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7337 Model 360 External DLT Tape Library

7337 Model 360 Digital Linear Tape Library Setup and Operator Guide

SA41-0051-01

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>
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Contents

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DANGER

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DANGER

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DANGER

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International Business Machines Corporation
New Orchard Road
Armonk, NY 10504

Telephone: 1-919-543-2193

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About This Guide

This guide describes how to install and use the 7337 Model 360 DLT Tape Library. It is intended for use by anyone who would install, use, or maintain the 7337 Tape Library. It contains the following chapters:

Chapter 1, "Introduction," describes the 7337 Tape Library, gives the system requirement, and lists hardware specifications.

Chapter 2, "Setting Up the 7337 Tape Library," tells how to install the library.

Chapter 3, "Operation," describes the how to use the operator controls to customize the library for your use.

Chapter 4, "Menus and Commands," describes how to use the 7337 Tape Library and its tape drives.

Chapter 5, "Removing the 7337 Tape Library," tells how to remove the library after it has been installed.

Chapter 6, "Using the Media," describes the media to use in the 7337 Tape Library and how to install and remove tape cartridges.

Appendix A, "Power Cables," provides power cable information for different countries.

Appendix B, "Troubleshooting," lists possible areas to investigate if you are experiencing problems with the 7337 Tape Library.

Appendix C, "Element Addressing," describes the addressing format for the elements of the library.

Appendix D, "SCSI Commands," lists the SCSI commands supported by the library and the tape drives.

Appendix E, "Barcode Label Specifications," provides specifications for creating bar code labels for use on cartridges for the library.

Appendix F, "Error Codes," lists the error codes that may be encountered and describes solutions for resolving the problem.

Store this guide with your system manuals.

Related Publications

- *7337 Model 360 Digital Linear Tape Library Service Guide*, SY44–0078, provides service and maintenance information for the 7337 Model 360 DLT Tape Library.
- *IBM Externally Attached Devices Safety Information*, SA26-2004, provides translations of danger notices.

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- The publication number of the book.
- The page number or topic to which your comment applies.

Chapter 1. Introduction

This chapter describes the 7337 Model 360 DLT Tape Library and its functions.

Subsystem Description

The 7337 Tape Library automates the retrieval, storage, and control of Digital Linear Tape (DLT) cartridges. Cartridges can be mounted into and dismounted from tape drives by using supporting software from the host without operator intervention.

The library has expandable configurations. It can be configured from one to six tape drives. The cartridge storage capacity can be configured with 15, 30, 45, or 60 storage slots.

The single slot I/O station contains a single storage slot. The maximum storage configuration contains a cartridge column that includes a multiple slot I/O station that holds 10 cartridges, and a five cartridge storage magazine. With the multiple slot I/O station feature, the library can be configured as 60 storage slots or 50 storage slots and 10 I/O station data slots.

The library is a stand-alone unit. With an optional feature, the library can be installed into a standard 19-inch rack.

All of the above configurations can be field upgraded to the maximum drive and storage configurations, and as well as a redundant power module. See "Optional Features" on page 7 for additional information.

Figure 1 shows an example of a library with a multiple slot I/O station and redundant dc power module.

1	I/O Station	**7**	Casters
2	Front Door	**8**	Tape Drive Sled
3	Door Lock	**9**	Filler Plate
4	Door Handle	**10**	AC Input Power Module
5	Operator Panel	**11**	DC Power Module
6	Host Interface Board (SCSI)	**12**	Redundant DC Power Module

Rear View   Front View
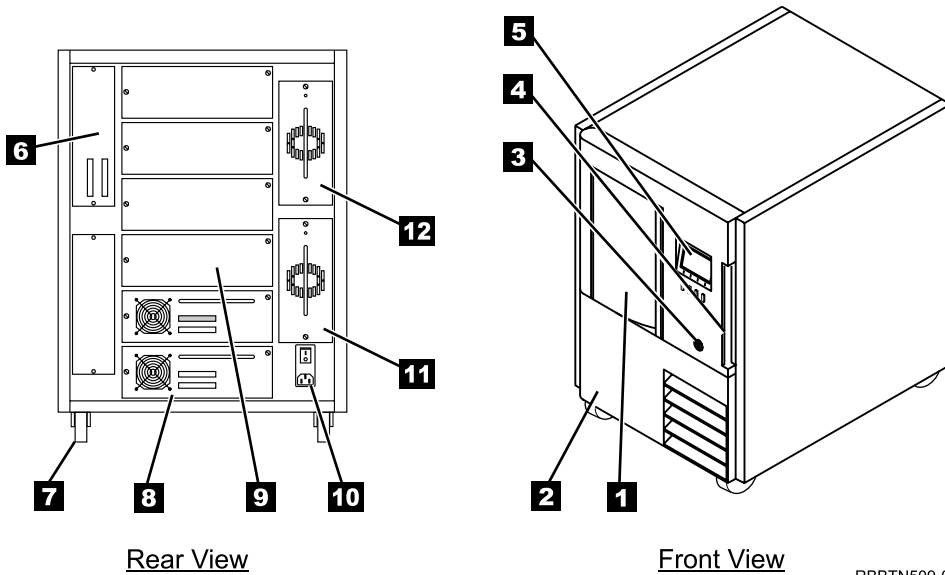
RBBTN509-0

Figure 1. Tape Library Subsystem (Stand-Alone Configuration)

Host Attachment

Depending on configuration, each library can have between two and seven small computer systems interface (SCSI) target devices. The minimum configuration is one host interface board (SCSI) and one drive for a total of two SCSI target devices. Up to five additional drives can be added for a maximum of seven SCSI target devices.

The host interface board (SCSI) is a Low Voltage Differential (LVD) connector. The host interface board (SCSI) connectors are High Density, 68-pin in order to support wide data transfer on the SCSI bus. The host interface board (SCSI) itself is a narrow device on a wide bus, and its SCSI ID range is limited from 0 to 7. Any initiator on the bus communicating with the host interface board (SCSI), such as a host adapter card, must also have its SCSI ID set from 0 to 7.

Note: Although communication between the host and the host interface board (SCSI) in the library is limited to narrow data transfer, all communication between the host and drives can be wide.

For maximum performance, the quantity of tape drives that you can attach to one SCSI bus is limited, and is based on the type of bus that you have and the amount of data compression achieved. Ultra SCSI buses have a bandwidth of 40 MB per second; Ultra–2 LVD SCSI buses have a bandwidth of 80 MB per second. The 7337 Tape Library is capable of data transfer rates of 6 MB per second with no compression and 12 MB per second at 2:1 compression.

Functional Description

The 7337 Tape Library automates the IBM DLT8000 tape drive. The library can be configured with one to six drives. Multiple drives offer enhanced functions such as faster transfer of data, simultaneous backup, concurrent read/write operations, and fault tolerance.

The 7337 Tape Library can be used for save/restore, program distribution, migration, data interchange, automatic migration of data between disk storage and tape, and mass storage for data archive. Full interchange of data is supported with the drives.

The 7337 Tape Library utilizes DLTtapeIV tape cartridges that provide 40 GB native capacity and up to 80 GB capacity with 2:1 hardware data compression. The library has a per drive native data rate up to 6 MB per second and up to 12 MB per second with 2:1 compression.

The 7337 Tape Library supports configurations with cartridge slot storage capacities of 15, 30, 45, and 60 cartridges, providing total capacities of 0.6 TB, 1.2 TB, 1.8 TB, and 2.4 TB of native data. With 2:1 compression, the largest model of the library can store 4.8 TB of data.

The 7337 Tape Library includes a bar code reader that allows positive tape cartridge identification and inventory, and an operator panel display.

The cartridge storage slots, and cartridge picker are accessed for maintenance purposes by opening the front door of the library. The tape drives, power modules, and host interface board (SCSI) are accessed from the back of the library for maintenance purposes.

Functional Units

The 7337 Tape Library consists of the following functional units:

- Tape drives in drive sleds
- Cartridge storage
- Tape cartridge
- I/O station
- Library control hardware
- Robotics system

Tape Drives

The 7337 Tape Library supports the IBM DLT8000 tape drive with Low Voltage Differential (LVD) Ultra-2 SCSI

All tape drives are packaged in a common drive sled that is a field replaceable unit (FRU) designed for quick removal and replacement.

Cartridge Storage

The library can have up to five columns (see Figure 2 on page 5.) One column contains tape drives, and one to four columns contain cartridges. The columns are numbered 1 to 5, starting at the I/O station column and continuing clockwise. Column 1 can be a single slot I/O station or a multiple slot I/O station. Column 2 is a cartridge storage column and is standard in all libraries. Column 3 is the drive column. Columns 4 and 5 are cartridge storage columns. Column 4 is standard in all 7337 libraries and Column 5 may also be installed depending on the configuration.

Storage Slot Numbering

The I/O station, the cartridge storage columns, and the drive column, all can have storage slot number designations. Each cartridge column has three magazines containing five storage slots. The magazines within each column are designated A to C from top to bottom. The slots within each magazine are numbered 1 to 5 from top to bottom. The drives within the drive column are designated A to F from bottom to top (see Figure 2 on page 5).
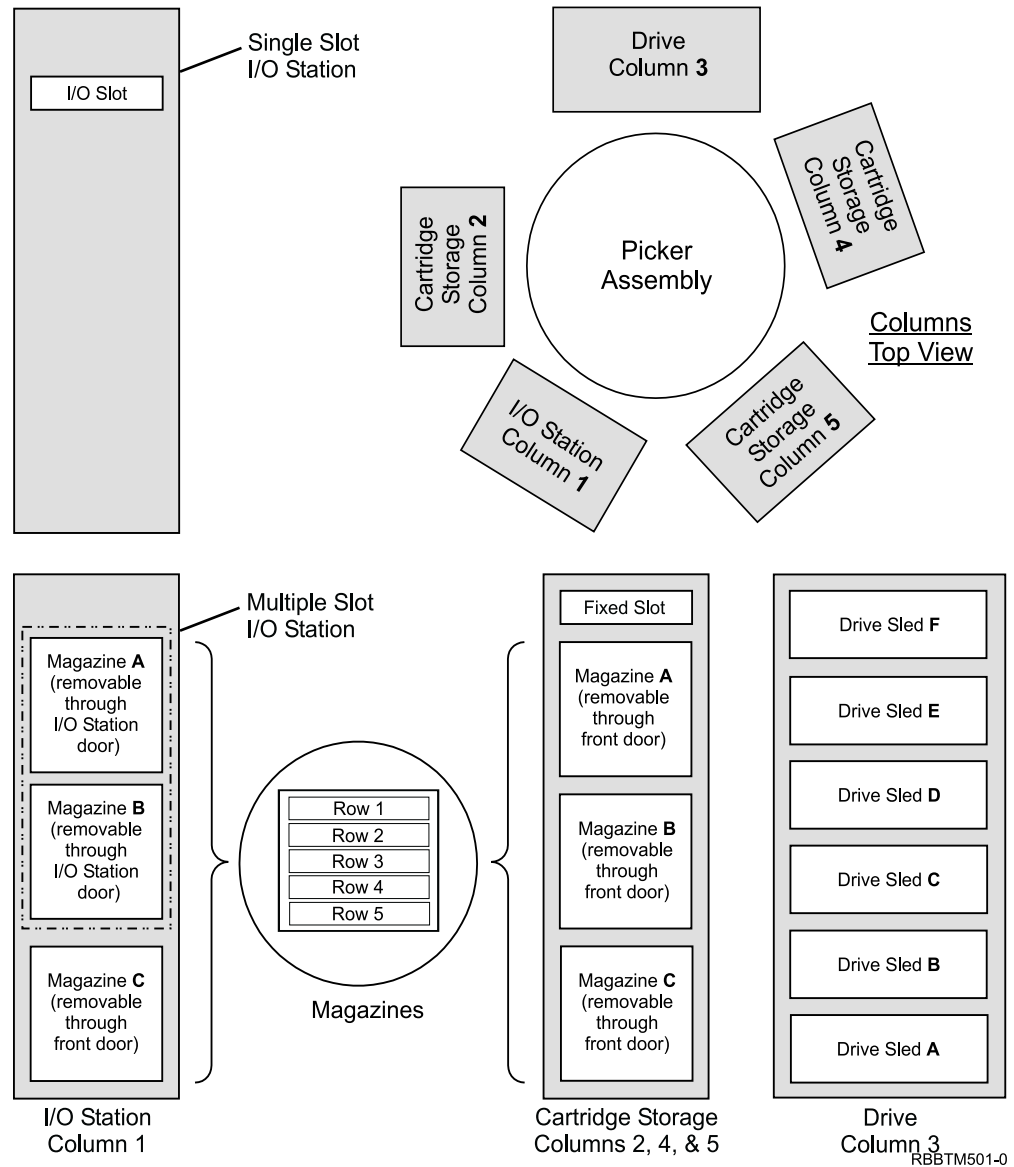
Figure 2. Storage Column Configurations and Coordinate System

To manipulate the media within the library, the host must reference each
movement with source and target designations. This is done using element
addressing, which specifies precisely which slots within the library are to be used.
For more information about the element addressing for the library, see
"Appendix C. Element Addressing" on page 137.

The total number of slots available per storage column is 16; however, the host
system only has access to 15. **The nonaddressable slot located at the top of
storage columns 2, 4, and 5 is reserved for future use. The picker cannot access
the cartridge if it is stored in the nonaddressable slot. Do not attempt to use the
top slot in storage columns 2, 4, and 5. The cartridge cannot be accessed from
this location.**

Tape Cartridge

The library automates the retrieval, storage, and control of DLTtape cartridges.

If the touch scan feature is disabled, each tape cartridge in the library **MUST** have an external barcode label that is machine readable to identify the volume serial number (volser). The external label contains up to thirteen characters for the volser. The characters can be uppercase A–Z, or numerics 0–9. If the touch scan feature is disabled and a cartridge in a storage or I/O station slot does not contain a label, the barcode reader will treat that slot as empty.

The external barcode labels on the cartridges identify the cartridges to the library. Some software requires that the internal volser and the external barcode label on the physical volume to be identical.

"Chapter 6. Using the Media" on page 103 lists the cartridge types available for use in the library.

I/O Station

This facility allows the insertion and ejection of cartridges without interrupting the normal operation of the library. There are two models of the I/O station:

- The single slot I/O station has a capacity of one tape cartridge. The cartridge can be inserted or ejected by opening the I/O station door.
- The multiple slot I/O station has a capacity of 10 tape cartridges contained in two magazines that can be inserted or removed by opening the I/O station door. There is also one fixed magazine that contains five storage slots inside the front door, just below the I/O station door. The multiple slot I/O station can also be configured as 10 additional storage slots (see the Config Dialog portion of the "Utils Submenu" on page 77). The configuration determines the number of cartridges available for data storage. Table 1 presents all possible I/O, storage combinations.

Table 1. Tape Library Configurations

Cartridge Storage Columns Installed	Single Slot I/O Station Installed	Multiple Slot I/O Station Installed	
		Configured as I/O	Configured as Storage
# 2	Storage Slots: 15 I/O Slots: 1	Storage Slots: 20 I/O Slots: 10	Storage Slots: 30 I/O Slots: 0
#2, #4	Storage Slots: 30 I/O Slots: 1	Storage Slots: 35 I/O Slots: 10	Storage Slots: 45 I/O Slots: 0
#2, #4, #5	Storage Slots: 45 I/O Slots: 1	Storage Slots: 50 I/O Slots: 10	Storage Slots: 60 I/O Slots: 0

Library Control Hardware

The library control hardware controls all operations in the library, including the interaction between the library and operators. The library firmware creates and maintains the library configuration, the physical location of the robotic system, and the inventory of cartridges. The database is kept in the flash memory of the library control hardware.

Robotic System

The robotic system identifies and moves cartridges between the storage slots, tape drives, and the I/O station. The robotic system has the following components:

- A cartridge picker for picking and placing cartridges in storage slots, tape drives, or the I/O station.
- A bar code scanner for reading the external labels on the cartridges. The bar code scanner is used during the inventory process to locate and categorize all cartridges installed in the library. The bar code scanner is also used to identify the types of storage and tape drives installed in the library.
- Robotic motion defined using the following system:
  - Y axis drive for moving the picker assembly in a vertical position
  - X axis drive for moving the picker assembly in a rotary position
  - Z axis drive for moving the picker assembly in a forward and backward motion

Optional Features

Table 2 lists optional features for the 7337 Tape Library.

Table 2. Tape Library Optional Features

Feature	Feature Code
IBM DLT8000 tape drive with Low Voltage Differential (LVD) Ultra-2 SCSI	FC8003
5 Cartridge Magazine with Cover	FC8005
Rackmount Kit	FC8006
Redundant DC Power Module	FC8008
15 Slot Tape Storage Column	FC8009
Multiple Slot I/O Station	FC8012

Specifications

Table 3 lists the specifications for the library. Specifications for tape cartridges are given in "Chapter 6. Using the Media" on page 103.

Table 3. Specifications for the Tape Library

Physical Specifications	
Specification	**Dimension**
Width	48.1 cm (18.9 in.)
Depth	73.5 cm (28.9 in.)
Height	68.5 cm (27.0 in.) (with casters)
Weight	65.8 kg (145 lb) (minimum configuration, no cartridges) 99.8 kg (220 lb) (maximum configuration, no cartridges) 116.6 kg (257 lb) (maximum configuration, with cartridges)
Rackmount Height	14 EIA Units
Power Specifications	
Voltage	90–137 V ac, 50–60 Hz
Current for 100 V ac	6.0 amps
Current for 240 V ac	3.0 amps
Maximum Electrical Power	0.720 kV·A
Inrush Current	45 amps at 120 V ac, 90 amps at 208 V ac

Environment Specifications			
Environmental Factor	**Operating**	**Storage**	**Shipping**
Temperature	10 to 38°C* (50 to 100°F)	-40 to 60°C (-40 to 140°F)	-40 to 60°C (-40 to 140°F)
Heat Output	542 W (483 Cal/Hr)		
Relative Humidity	20 to 80%	10 to 90%	10 to 90%
Maximum Wet Bulb Temperature	26°C (79°F)	Noncondensing	Noncondensing
Maximum Noise Level (operating/idle)	68/66 dB		
Maximum Altitude	2500 m (8202 ft.)		
* The operating environment of the library must not conflict with the media storage requirements (see "Chapter 6. Using the Media" on page 103). While the library may be capable of operating at elevated temperatures for an extended period of time, the temperature could shorten the useful life of media that is stored in the library. If media is stored in the library for more than 10 hours, the storage temperature requirements for media should be met. It should be assumed that media stored in the library will be two degrees C above ambient room temperature when the library is powered on.			

Product Environment

The library is designed to operate in a general business environment.

The library is a precision computer peripheral. To ensure maximum longevity of your library, place the library away from dust, dirt, and airborne particulates:

- Keep the library away from high-traffic areas, especially if the floor is carpeted. Carpeting harbors dust, and people walking on the carpet can cause the dust and carpet fibers to become airborne.
- Keep the library out of computer-printer rooms because of toner and paper dust. Additionally, do not store paper supplies next to the library.
- Keep the library away from moving air caused by doorways, open windows, fans, and air conditioners.

Ensure that the machine covers are always kept closed to minimize any contamination from airborne particles. Table 4 shows the particulate limits for Subclass P1 which is defined as general business office environment. Table 5 shows the corrosive gas limits for Subclass G1 which is defined as general business office environment.

Table 4. Particulate Limits, Subclass P1

Particulate Limits	Suspended Particulates (µg/m³) Base Sampling Period 24 hours	Settleable Particulates (µg/cm²) Sample Collection Time 30 days
Annual Average	150	500
50% of values are less than:	138	460
84% of values are less than:	207	690

Table 5. Corrosive Gas Limits, Subclass G1

Typical Environment Pollutant	Concentration Limits–Annual Arithmetic Mean (µg/m³)
Total Reduced Sulfur (S_x)	3.2
Acidic Chlorine Gases (Cl_x)	1.5
Sulfur Dioxide (SO_2)	100.0
Nitrogen Dioxide (NO_2)	140.0
Total Oxidant (O_3)	98.0

Environment and Usage Guidelines

It is the goal of IBM to provide you with a product that you can configure and use reliably. Tape drives require specific maintenance and environmental conditions to operate optimally over time. Using high quality, data grade media, handling and storing this media properly, operating the tape drive in a clean environment, and keeping the tape drive properly cleaned can help you to avoid problems with your IBM tape drive.

Use the following sections as guidelines when using the 7337 Model 360 DLT Tape Library.

Media Grades

IBM uses two different grades of media. Program Transmittal Fixes (PTFs) are supplied on a tape that is designed to be written to only once and read from several times. This tape is not designed to be used as a backup medium.

IBM also sells media designed to be used for storage. The data grade tape sold by IBM is the medium recommended and supported for use in the 7337 Model 360 DLT Tape Library. If IBM service personnel analysis indicates a problem with non-IBM media it may be necessary for the customer to replace the media.

Tape Handling and Storage

Most tape is supplied in a sealed cartridge. It is provided this way so that the tape will remain in a clean environment. The tape also is held under proper tension inside the cartridge. If the cartridge is dropped, this tension can be relaxed. Inserting a dropped cartridge into a tape drive can cause incorrect loading and result in a jam. This will ruin the tape and can cause physical damage if the cartridge is not removed properly.

When the tapes are stored, they must be replaced in their protective containers and stored on their end. The storage area must be clean, dry, normal room temperature and away from any magnetic fields. For guidelines to be followed when using DLT tape cartridges, see "Chapter 6. Using the Media" on page 103.

Environmental Issues

Tape drives are designed to operate in a clean environment. Dirt, dust, fibers, and airborne particles can cause problems if allowed to contaminate the tape drive or cartridges. Airborne particles are the most difficult to control. When a tape is installed in the tape drive, the clearance between the heads and the tape is smaller than the width of a speck of dust. Particles can damage the tape or the head if they come in contact with either. IBM offers a tape drive filter enclosure for some systems to solve this problem. The enclosure draws air in through a filter and supplies the tape drive with clean air. Customers are responsible to provide a clean operating environment for the tape drive and system.

Tape Drive Cleaning

No matter how clean the environment, debris may build up on the heads of any tape drive. Every time tape motion occurs, some of the media surface comes off on the heads. Over time, this builds up and causes errors in reading and writing. Customers are responsible to clean the tape drive in accordance with the cleaning information provided with the tape drive.

IBM only recommends and supports the use of IBM cleaning cartridges for IBM tape drives.

Cleaning cartridges can be used a limited number of times. Once a cleaning cartridge has been used to its maximum number of times, the cartridge is considered expired. When cartridges expire, they must be replaced. Never reuse an expired cleaning cartridge as this can allow previously removed dirt to be reintroduced to the tape drive. When you have cleaned the tape drive, mark the usage on the cartridge in order to best determine when your IBM cleaning cartridge has expired.

See "Cleaning Drives" on page 41 for the proper procedures to be used to clean the 7337 Tape Library.

SCSI Hardware Issues

SCSI bus cables and terminators may affect tape drive performance. IBM cables and terminators are designed specifically to keep the SCSI bus as free of noise as possible. Use of non-IBM cables or terminators may adversely affect the SCSI bus performance. If IBM service personnel analysis indicates a problem with non-IBM cables, it may be necessary for the customer to replace them with the appropriate IBM cables.

Microcode Updates

IBM constantly works to provide the best possible tape drive products. To make certain that the drives work their very best, IBM occasionally releases changed microcode for the tape drives. When a microcode change is developed, IBM makes it available to you through the service organization or by electronic delivery.

RS/6000 and eServer pSeries customers can download microcode changes from the following IBM Web site:

http://www.rs6000.ibm.com/support/micro

Microcode can be installed by your authorized IBM Customer Service Representative or your system administrator.

Summary

Your tape drive must be installed in the cleanest possible environment. Additionally, IBM tape drives require high quality, data grade tapes and cleaning on a regular basis. Media must also be stored and handled properly. Improper use, storage or handling of tape drives or media may void your IBM warranty or service agreement.

If a tape drive stops functioning due to a component failure during the tape drive warranty or maintenance time, IBM will replace the tape drive unit. IBM will replace any defective tape drive under the terms and conditions of the IBM warranty or service agreement. It is our objective to work with you to identify the cause of any tape drive problems and provide a solution.

Chapter 2. Setting Up the 7337 Tape Library

This chapter provides step-by-step instructions on how to properly install the 7337 Model 360 DLT Tape Library.

Note: If you need assistance with the installation, contact your IBM authorized service personnel. Since this product was designed for customer setup, requesting on-site service assistance may be a chargeable call.

Performing the Installation

To install the 7337 Model 360 Tape Library, familiarize yourself with the procedures in this manual and then complete the following steps.

Step 1. Unpacking the 7337 Tape Library

Before installing the 7337 Tape Library, 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.

The 7337 Tape Library 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 7337 Tape Library.

Attention: The first step in operating the 7337 Tape Library is to test the unit itself. Once you have completed "Step 2. Installing the 7337 Tape Library" on page 14 through "Step 4. Checking the Electrical Outlets" on page 17, the power cord should be installed, and the library powered up to perform its own internal self test. Do not connect to the host system until this self test has been completed.

CAUTION:
The weight of this part or unit is more than 55 kilograms (121.2 pounds). It takes specially trained persons with a lifting device to safely lift this part or unit. (RSFTC206)

Read the printed instructions located on the shipping container to unpack the 7337 Tape Library.

Note: If you return it for service, you must ship the 7337 Tape Library in its original or equivalent packing material, or the warranty may be invalidated.

Inspect the 7337 Tape Library for shipping damage. If there is damage, do not install the library. Report the damage immediately by contacting your place of purchase.

Check the accessories and make sure that you received the following items:
* Power cable (for the appropriate cable, see Appendix A, "Power Cables," on page 129)
* The *External Devices Warranty Information* (U.S., Canada, and Puerto Rico only)
* The *7337 Model 360 DLT Tape Library Setup and Operator Guide* (this guide)
* The *7337 Model 360 DLT Tape Library Service Guide* (required for your IBM authorized service personnel)

- The *IBM Externally Attached Devices Safety Information* manual
- Front door key (taped to the back of the library)
- One Tape Device Driver/AIX Enhanced media kit
- System-to-device SCSI bus (signal) cable
- Device-to-device SCSI cable for each drive included
- Terminator
- Data cartridge
- Test cartridge
- Cleaning cartridge
- Tape cartridge barcode labels (samples)
- Additionally purchased tape drives (optional)
- Additionally purchased storage columns (optional)
- Additionally purchased redundant power supply (optional)
- Additionally purchased tape magazines (optional)
- Additionally purchased rack mount hardware (optional)
- Additionally purchased tape (data or cleaning) cartridges (optional)

Step 2. Installing the 7337 Tape Library

The 7337 Tape Library can be located anywhere that is convenient to your system unit. The only restrictions are the weight, length of the power cord, and the SCSI cable. Recommended locations are:

- In a clean environment
- Away from the floor
- Where the library door can be easily opened to allow access to the inside of the library
- Where the display screen and operator buttons can be easily accessed
- Where the airflow around the unit is not obstructed

CAUTION:
The weight of this part or unit is more than 55 kilograms (121.2 pounds). It takes specially trained persons with a lifting device to safely lift this part or unit. (RSFTC206)

This section describes the procedures for installing the 7337 Tape Library as a stand alone unit (see "Installing a Stand-alone Library" on page 15) or mounted in a rack enclosure (see "Installing the Library into a Rack" on page 117). Select the location in which you want to install the library and perform the described installation procedure.

Installing a Stand-alone Library

Be familiar with these installation instructions before proceeding with the installation tasks.

Understand the requirements for connecting cables between the host and the 7337 Tape Library and all tape drives.

Use the inventory checklist to ensure that you have received the items required for installation.

CAUTION:
The weight of this part or unit is more than 55 kilograms (121.2 pounds). It takes specially trained persons with a lifting device to safely lift this part or unit. (RSFTC206)

Note: The sling that is shipped with the library can be used to lift and position the library during installation. It is recommended that four people use the handles **1** of the sling **2** to lift the library (see Figure 3).
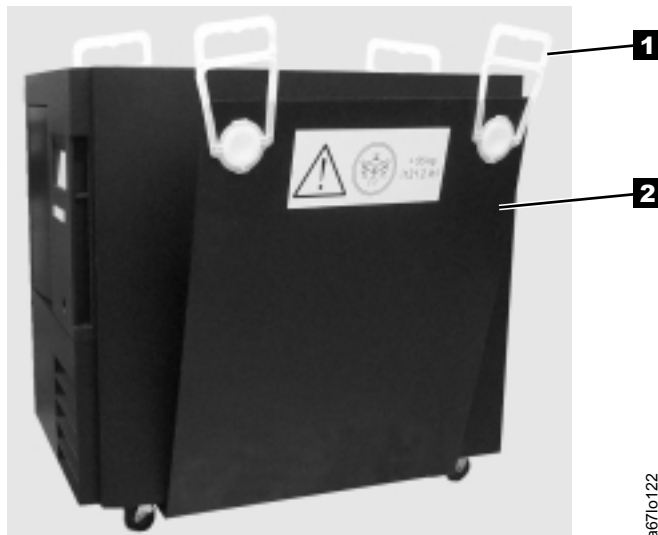
Figure 3. Lifting Device

1. Move the library into place. If you are installing the library on a raised floor, place the hole cutout under the rear of the frame.
2. Lock the two front casters **4** in place by turning the latch **3** counterclockwise (see Figure 4).
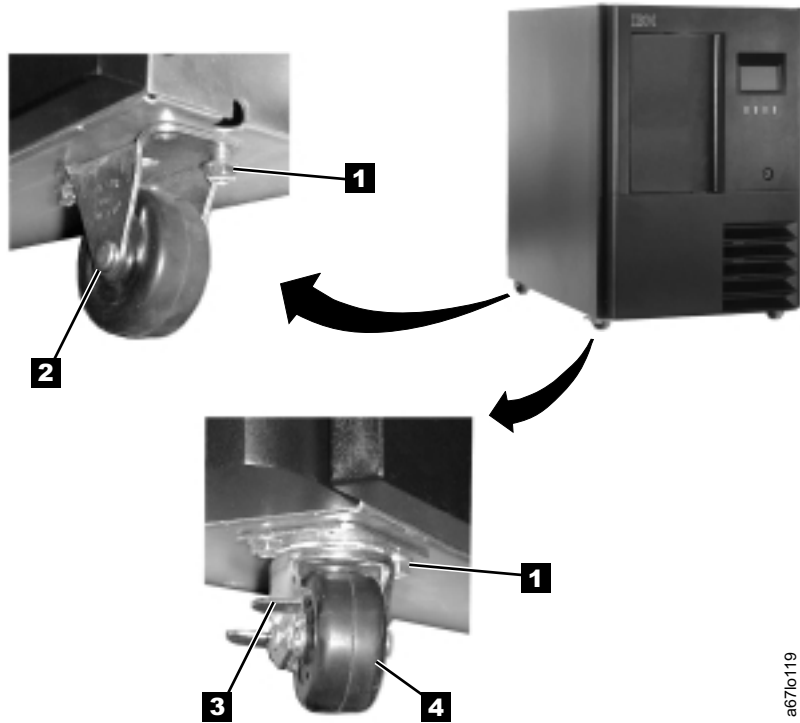
Figure 4. Locking Front Casters

3. Open the front door.
4. Remove the shipping strap that secures the picker assembly to the frame (see Figure 5 on page 17.) Save this strap for future use.
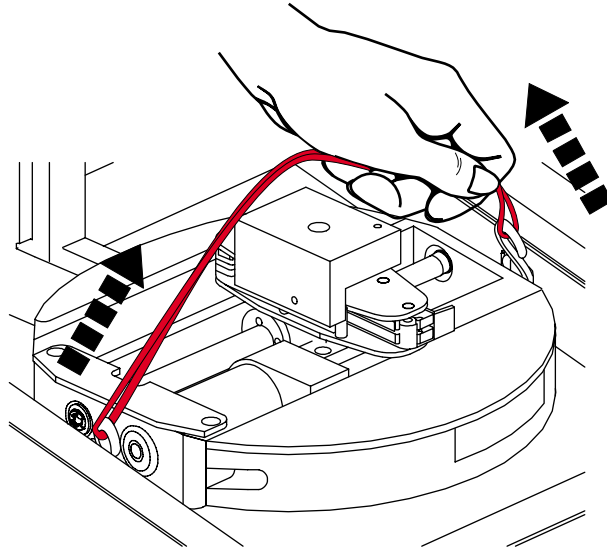
RBBTN502-0

Figure 5. Removing the Picker Assembly Shipping Strap

5. Go to "Step 3. Installing Optional Features".

Step 3. Installing Optional Features

The 7337 Model 360 Tape Library minimum configuration is shipped with one tape drive, 15 storage slots, one I/O mailbox slot, and one power supply installed in the library assembly. The library can accommodate up to six tape drives, two power supplies, and up to 60 storage slots. If any of the additional features purchased are not installed, they should be installed in the library now.

To install optional features, refer to "Chapter 7. Installing Optional Features" on page 113 for the correct procedure.

Step 4. Checking the Electrical Outlets

Make sure that the electrical outlets you use are properly grounded. If you are unsure whether the outlet is grounded properly, contact an electrician for assistance.

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)**

Step 5. Connecting the SCSI Bus Cables

Before installing the SCSI cables, inspect all cables for damage. Do not install a cable if it is damaged. Report the damage immediately by contacting your place of purchase.

The maximum allowable length of your bus cabling is 12 m (40 ft.). A maximum system-to-device cable length of 10 m (33 ft.) can be used when attaching to the host interface board (SCSI).

Host to Library SCSI Bus Cable

Attach the cable from the host into one connector of the host interface board (SCSI) (**1** in Figure 6).

Host Interface Board (SCSI) to Tape Drive SCSI Bus Cable

Note: For maximum performance, the quantity of tape drives that you can attach to one SCSI bus is limited, and is based on the amount of data compression achieved. Ultra SCSI buses have a bandwidth of 40 MB per second; Ultra–2 LVD SCSI buses have a bandwidth of 80 MB per second. The 7337 Tape Library is capable of data transfer rates of 6 MB per second with no compression and 12 MB per second at 2:1 compression.

RBBTM502-0
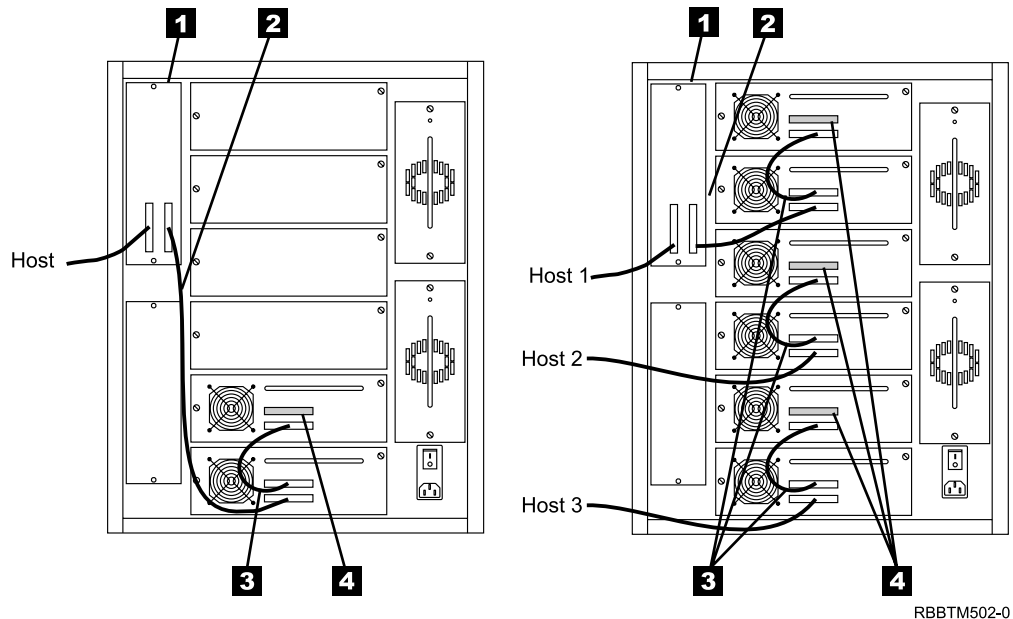
Figure 6. Examples of SCSI Cable Connections

1. Attach the cable from the host interface board (SCSI) **2** to the tape drive. See Figure 6 for examples of configurations (your library configuration may not be shown).
2. Install drive-to-drive SCSI cables **3** as shown, depending on how many drives are installed.
3. Install a terminator **4** on the last SCSI device on the bus.

   Note: Ensure that you are using the IBM terminator that was supplied with the library.

Step 6. Connecting the Library Power Cable

Before connecting the library to the host system, you should test for error conditions and prepare the library for use. This eliminates uninstalling the library if an error occurs and reduces the down time of the host system. The preparation requires power to the library. Use the following steps to connect the power cable:

1. Remove the power cable from the accessories included with the shipment.
2. Plug the power cable into the rear of the 7337 Tape Library.

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)**

3. Plug the other end of the power cable into an electrical outlet.

Step 7. Performing a Power-On Self Test (POST)

Before attaching the 7337 Tape Library to your host system, you should perform a power-on self test (POST) to ensure the library powers up correctly and reports no errors. To perform the POST:

1. Ensure that the power switch is set to off by pressing the O on the power switch (**1** in Figure 7).
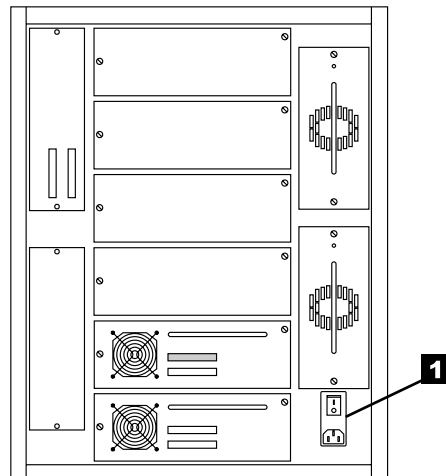
RBBTM517-0

Figure 7. Main Power Switch

2. Plug the power cord into the 7337 Tape Library, and then plug the other end into a grounded electrical outlet.
3. Open the front door and place the test cartridge (scratch cartridge) **1** that was shipped with the library into the single slot I/O station (not shown) or the top slot of the 10 slot I/O station **2** .

   Note: A barcode label MUST be installed on the tape cartridge. See "Types of Tape Cartridges" on page 103 for more information on placing cartridge labels.
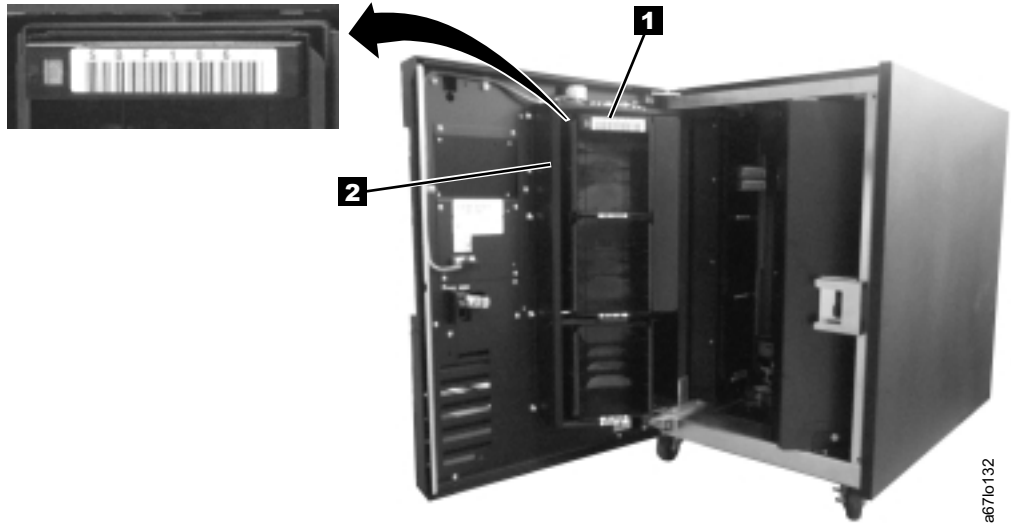
Figure 8. Inserting a Data Cartridge

4. Close the front door and I/O mailbox securely.
5. Push the | on the power switch to turn on the power.
6. Visually inspect the rear panel to ensure that all LEDs are green. If all LEDs are green, proceed with the installation. If any LEDs are not green, contact your IBM Service Representative.

Note: For a description of the operator panel status messages and icons, see "Chapter 3. Operation" on page 31.

7. The library firmware automatically initializes and starts the inventory/teach process. When the Main Menu displays on the operator panel **1** in Figure 9 on page 21, place the library in the Offline state by pushing the button **2** below the **Online/Offline** softkey, the follow on screen displays, and then push the button **2** below the **OK** softkey.
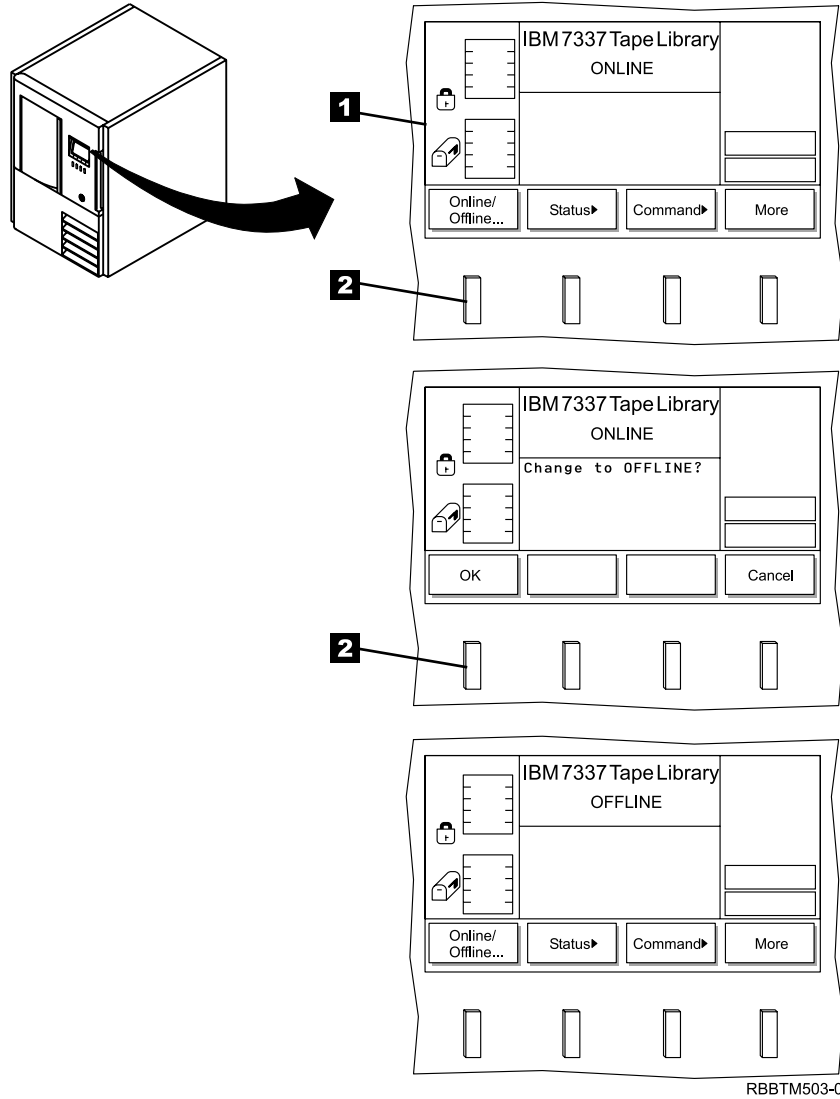
Figure 9. Operator Panel

Step 8. Determining the SCSI Address

The SCSI address identifies the device to the bus and the system. Care must be taken not to set two devices to the same SCSI address as this will cause errors that are often not easy to detect. The address selected sets the priority of the device on the bus. Tape drives are normally slow devices compared to hard disks and the tape drives should be set to a high priority to insure the tape drive gets access to the bus in a timely manner.

The RS/6000 (and pSeries) computers have 16 SCSI address setting available. The SCSI bus priority on these host systems is as follows:

Highest 7 6 5 4 3 2 1 0 15 14 13 12 11 10 9 8 Lowest

Note: The 7337 Tape Library may require up to seven SCSI address. One address is required for the library and one address for each of the installed tape drives.

Before you install the 7337 Tape Library, you must make sure that there are no duplicate SCSI addresses present on the SCSI bus.

The host interface board (SCSI) is a Low Voltage Differential (LVD) connector. The host interface board (SCSI) connectors are High Density, 68-pin in order to support wide data transfer on the SCSI bus. The host interface board (SCSI) itself is a narrow device on a wide bus, and its SCSI ID range is limited from 0 to 7. Any initiator on the bus communicating with the host interface board (SCSI), such as a host adapter card, must also have its SCSI ID set from 0 to 7.

Note: Although communication between the host and the host interface board (SCSI) in the library is limited to narrow data transfer, all communication between the host and drives can be wide.

IBM recommends that you use the following default SCSI address settings:

0   7337 Library Controller

1   Drive 1

2   Drive 2

3   Drive 3

4   Drive 4

5   Drive 5

6   Drive 6

To determine an unused SCSI address, you must:
- Identify the name and the port of the host system 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

__ 1. To identify the name and the port of the host system SCSI I/O controller that you want to attach to, at the system prompt type

```
lsdev -C | grep scsi | pg
```

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):

```
scsi0     Available 00-00-0S     Standard SCSI I/O Controller
scsi2     Available 00-01        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 1).

__ 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 | pg
```

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. (The list may contain multiple instances of a port. In the following example, for port 1 (identified in step 1) there are three instances.) The addresses of the other SCSI devices appear in the seventh position (highlighted in the example that follows):

```
hdisk0    Available   00-00-0S-0,0    SCSI Disk Drive
hdisk1    Available   00-01-00-2,0    SCSI Disk Drive
rmt0      Available   00-01-00-5,0    12.0 GB 8mm Tape Drive
cd1       Available   00-01-00-1,0    SCSI Multimedia CD-ROM Drive
```

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

__ 4. Determine an unused SCSI address for the 7337 Tape Library (in this case, 0 3, 4, 6, or 8 through 15 because 7 was used by the SCSI I/O controller and 2, 5, and 1 are used by other devices).

Step 9. Setting the SCSI Address

The 7337 Tape Library can consist of up to seven SCSI devices: the library and the drives (1–6). The default settings for the SCSI IDs are 0 for the library and 1–6 for the drives. Depending on your requirements, you may need to change the SCSI ID default settings for your installation.
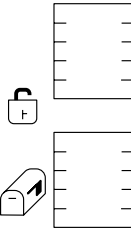
Notes:

1. Do not select an ID that is already in use on the same SCSI bus.
2. Do not select the SCSI ID of the SCSI host adapter card. The SCSI ID range of the host interface board (SCSI) is limited from 0 to 7. Any initiator on the bus communicating with the host interface board (SCSI), such as a host adapter card, must also have its SCSI ID set from 0 to 7. The SCSI ID of the SCSI host adapter card is usually higher than any device on the SCSI bus. Generally, the SCSI ID for the host adapter is 7.

Setting the Library SCSI ID

To determine the existing SCSI ID for the library, perform the following steps:

1. From the main menu, select **More** by pressing the button below the **More** softkey.
2. Select **Setup**, then **Library**, then **SCSI**. The SCSI Dialog screen displays (see Figure 10). The existing ID is the value in the `SCSI ID: CURRENT` field.

Figure 10. Library SCSI Dialog

To change the SCSI ID setting for the library, perform the following steps:

1. Press the button below the **Up** or **Down** softkey until the ID that you want displays in the `SCSI ID: NEW` field.
2. Press the button below the **Next** softkey until the **OK** softkey displays.
3. Press the button below the **OK** softkey to accept the new ID.
4. To activate the new SCSI ID, cycle the power (turn it off, then on again).

Setting the Drives SCSI IDs

To determine the existing SCSI ID for the drives, perform the following steps:

1. From the main menu, select **More** by pressing the button below the **More** softkey.

2. Select **Setup**, then **Drives**, then **SCSI**. The Drive SCSI Dialog screen displays (see Figure 11). The current drive is the value in the `Drive: XX` field. The existing drive SCSI ID is the value in the `SCSI ID: CURRENT` field.


```
          IBM 7337 Tape Library

                  OFFLINE

        Drive   : 01
                   CURRENT NEW
        SCSI ID:    01    01
        Drives with this ID:
                   NONE

   OK        Change      Next       Cancel
             Drive
```

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Figure 11. Drive SCSI Dialog

To change the current drive, press the button below the **Change Drive** softkey until the number of the drive you want displays in the `Drive: XX` field, then select **OK**.

To change the SCSI ID setting for the drive, perform the following steps:

1. Press the button below the **Next** softkey. The Drive SCSI ID Dialog displays (see Figure 12).


```
          IBM 7337 Tape Library

                  OFFLINE

        Drive   : 01
                   CURRENT NEW
        SCSI ID:    01    02
        Drives with this ID:
                   NONE

   Up         Down       Next       Cancel
```

RBBTM510-0

Figure 12. Drive SCSI ID Dialog

2. Press the button below the **Up** or **Down** softkey until the ID that you want displays in the `SCSI ID: NEW` field.

3. Press the button below the **Next** softkey until the **OK** softkey displays.

4. Press the button below the **OK** softkey to accept the new ID.

5. To activate the new SCSI ID, cycle the power (turn it off, then on again).

Step 10. Installing the Enhanced AIX Device Driver

To use the robotic features of the 7337 Tape Library with an RS/6000, you must install the AIX device driver (known as the Atape driver) that you received on the Tape Device Driver/AIX Enhanced media. You may also be able to use the device driver you received with the backup software application.

To install the device driver and to configure the 7337 Tape Library with default parameters, refer to the procedures that follow.

Note: You must have root authority to perform the commands in this section.

To determine if the Atape driver is already installed on your system, type

```
lslpp -l Atape.driver
```

and press Enter. The system returns a message showing the level of the Atape driver installed or a message to inform you that the driver is not installed. The minimum level of Atape driver supported for the 7337 Tape Library is 5.4.4. If your system does not have this level or higher, install the Atape driver installed with your system.

Refer to the *SCSI Tape Drive, Medium Changer, and Library Device Drivers Installation and User's Guide*, GC35–0154, for installation procedures and information about using the device driver.

Step 11. Performing a System Shutdown

Attention: Do not attach the 7337 Tape Library to a host system unit that is powered on. This can damage the 7337 Tape Library, the system unit, or both.

To perform a system shutdown of the host, do the following:

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 `Halt Completed` 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. Turn off the power to the 7337 Tape Library.

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)

5. Unplug the power cable to the 7337 Tape Library from the electrical outlet.

6. Unplug the power cables to all external devices from their electrical outlets.

7. Unplug the system unit power cable from the electrical outlet.

Step 12. Connecting the Power Cables

To connect the power cables:

1. Plug the 7337 Tape Library power cable into an electrical outlet.

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. Plug the power cables for all external devices and the system unit into electrical outlets.

3. Turn on the power to all of the external devices.

4. Turn on the power to the system unit.

Step 13. Performing the Checkout Procedure

Verify that the 7337 Tape Library has been configured to the host system software by doing the following:

1. Log into the host (AIX operating system).

    Note: You must have root authority to install or remove the 7337 Tape Library from the system. To obtain root authority, see your system administrator.

2. At the system prompt, type the following command and press Enter.

    ```
    lsdev -Cs scsi tape
    ```

    The command lists all of the SCSI devices that are connected to the host. Figure 13 shows an example of the screen that displays. The screen lists:

    | 1 | Device name |
    | 2 | Device status |
    | 3 | SCSI address (begins with 7th digit) |
    | 4 | Description of the SCSI device |


```
 1          2            3              4
hdisk0   Available   00-00-0S-0,0   SCSI Disk Drive
hdisk1   Available   00-01-00-2,0   SCSI Disk Drive
rmt0     Available   00-01-00-5,0   4.0 GB 4mm Tape Drive
cd1      Available   00-01-00-1,0   SCSI Multimedia CD-ROM Drive
smc0     Available   10-79-00-0,0   IBM 7337 Tape Medium Changer
rmt0     Available   10-79-00-0,1   Differential SCSI DLT Tape Drive
rmt1     Available   10-79-00-0,2   Differential SCSI DLT Tape Drive
rmt2     Available   10-79-00-0,3   Differential SCSI DLT Tape Drive
rmt3     Available   10-79-00-0,4   Differential SCSI DLT Tape Drive
                                                     RZBAA515-3
```

Figure 13. Screen Display of SCSI Devices Attached to the RS/6000

3. From the list of SCSI devices, identify the 7337 Tape Library (if the Atape driver was installed, the library is listed as *IBM 7337 Tape Medium Changer*. If the driver was not installed, the library is not listed, only the drives are shown.)

    *   If the status of the 7337 Tape Library is displayed as *Available*, the device has successfully been configured.
    *   If the status is not displayed as *Available*, refer to Chapter 3, "Maintenance Analysis Procedures," in the *7337 Model 360 DLT Tape Library Service Guide*. For more information about configuring the 7337 Tape Library to the system software, refer to your AIX or host system manuals.

Note: For more information about configuring the 7337 Tape Library to the system software, refer to your AIX or host system manuals, or Chapter 3, "Installation and Configuration Instructions," in the *SCSI Tape Drive, Medium Changer, and Library Device Drivers Installation and User's Guide*.

4. Run the system diagnostics on each tape drive to ensure proper function.
   a. Load the test tape cartridge into the drive to be tested.
   b. At the system prompt, type the command

      `run diag rmt x`

      where x is the SCSI address of the drive to be tested.
   c. Follow the prompts issued by the system.
5. This completes the 7337 Tape Library installation.

Chapter 3. Operation

You can issue commands to the 7337 Tape Library through the host or through the operator panel. The operator panel allows you to perform the following actions:

- Start up the 7337 Tape Library
- Shut down the 7337 Tape Library
- Initial configuration and setup
- Handle media
- Search for error codes

Operator Panel

The operator panel provides an interactive path between you and the 7337 Tape Library. See Figure 14 for an illustration of the operator panel. Visual indications and push buttons **6** enable you to control the 7337 Tape Library.

The 7337 Tape Library operator panel is divided into five areas: I/O station status **1**, library status **2**, messages **3**, drive status **4**, and softkeys **5**.
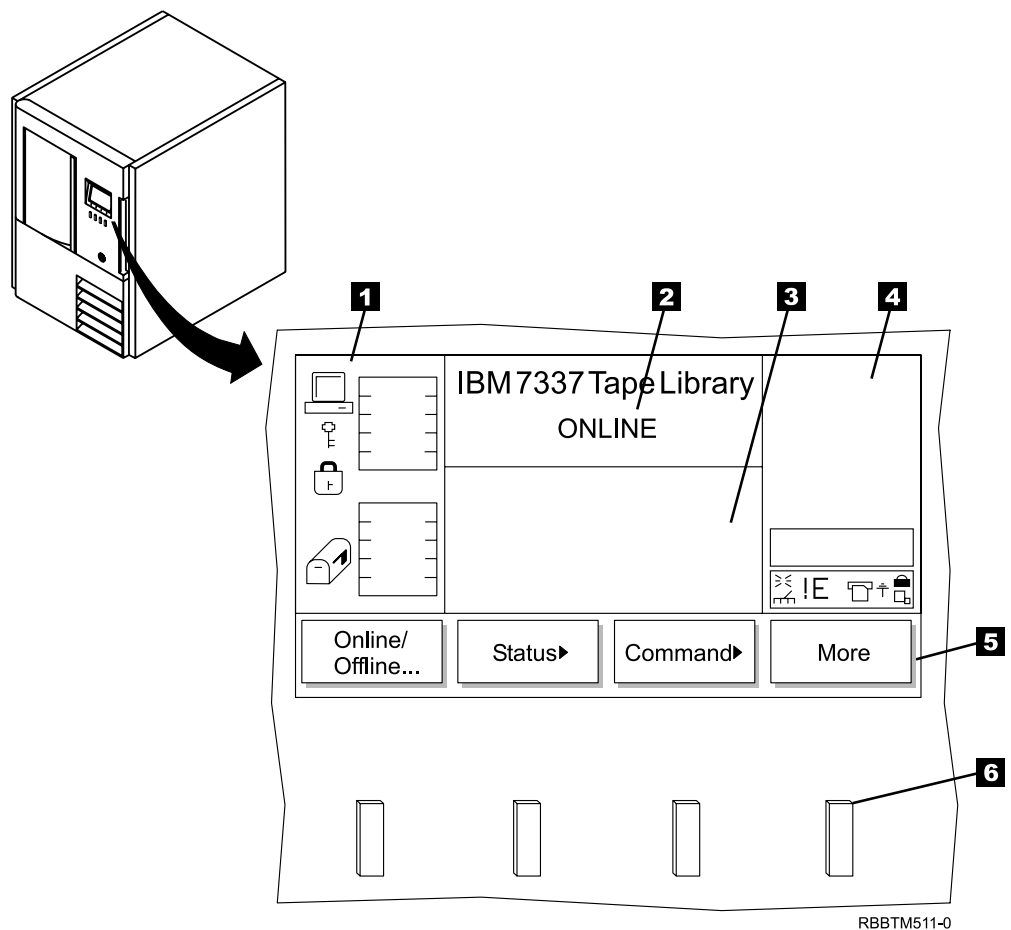
Figure 14. Operator Panel

I/O Station Status Area

The I/O station status area provides constant information about the I/O station (see **1** in Figure 15).
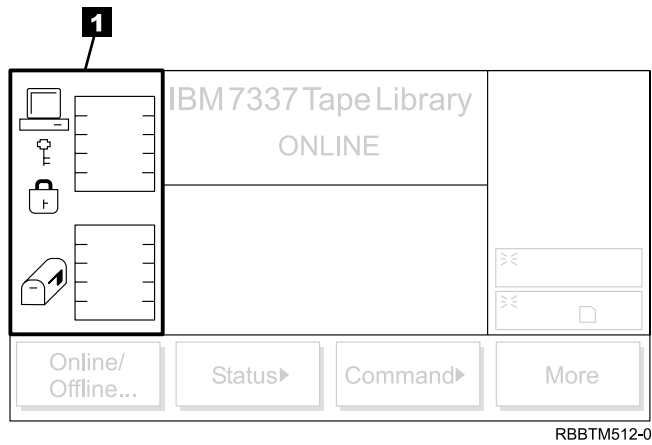
RBBTM512-0

Figure 15. I/O Station Status Area

Table 6 shows and describes the icons in the I/O station status area.

Table 6. I/O Station Icons

Icon	Description
	This icon is displayed on screen if the host has issued a **PREVENT/ALLOW MEDIUM REMOVAL** SCSI command and locked the I/O station.
	This icon is displayed on screen if the I/O station is locked. The I/O station can be locked by the following conditions: • The host issues a **PREVENT/ALLOW MEDIUM REMOVAL** SCSI command and locks the I/O station. • The 7337 Tape Library is accessing an I/O station slot. • The I/O station has been configured as all storage. This icon is displayed if the I/O station is unlocked.
	These icons are displayed on screen for the six I/O station states. State 1: The I/O station door is closed. Any cartridge in the I/O station has previously been inventoried. State 2: The I/O station door is partially open. Any cartridge in the I/O station has previously been inventoried. State 3: The I/O station door is fully open. Any cartridge in the I/O station has previously been inventoried. For an import operation, a cartridge can be inserted. State 4: The I/O station door is closed. A cartridge has been exported and not yet removed. State 5: The I/O station door is partially open. A cartridge has been exported and not yet removed. State 6: The I/O station door is fully open. A cartridge has been exported and not yet removed. While in this state, an exported cartridge can be removed.
	These icons are displayed on screen to show the possible configurations of the I/O station. Type 1: This icon displays when a single slot I/O station is installed in the library. Type 2: This icon displays when a multiple slot I/O station is installed in the library. Cartridges are indicated by black slots. A total of 10 slots are available. Type 3: This icon displays when a multiple slot I/O station is installed in the library and is configured as storage. A total of 10 slots are available.

Library Status Area

The library status area displays the current action, activity, or state of the library (see **1** in Figure 16).
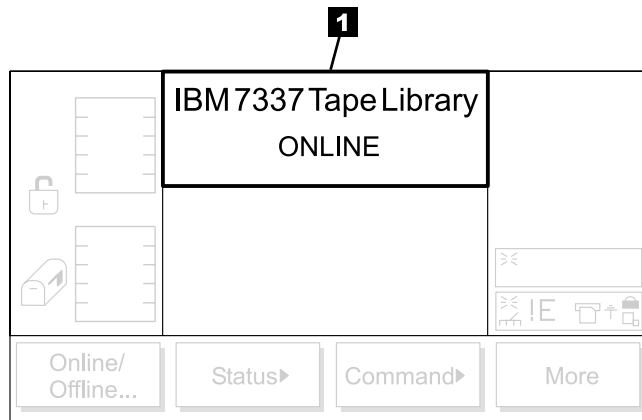
Figure 16. Library Status Area

Table 7 describes the text displayed in the library status area.

Table 7. Library Status Area

Text	Definition
OFFLINE	The media changer equipment is in an Offline state.
ONLINE	The media changer equipment is in an Online state.
Status or Attention Message	The library reports status or messages to solicit operator intervention.

Drive Status Area

The drive status area provides constant information about the drives (see **1** in Figure 17).
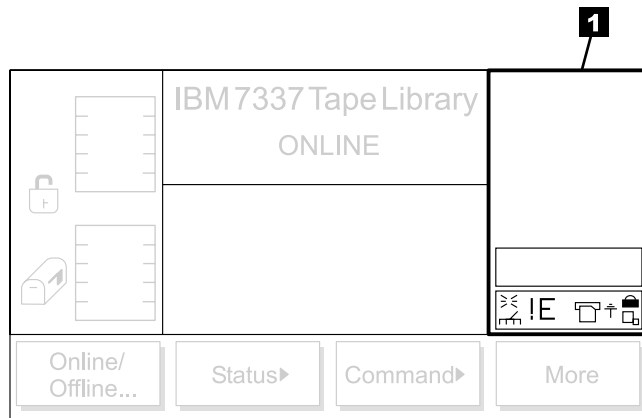
Figure 17. Drive Status Area

Table 8 shows and describes the icons in the drive status area.

Table 8. Drive Status Icons

Status	Icon	Description
Drive Present	⬒	A tape drive is present but does not contain a cartridge.
Power On	≥≤	If power is applied to the tape drive, the Power On icon displays.
Cleaning Required	⊓	If tape drive cleaning is required, the Cleaning Required icon displays.
Error Code	! n	If a drive error occurs, an error code displays. See "Drive Error Codes" on page 146 for a list of drive error codes. 'n' represents the character that displays. It can be: `0–9, or A, B, E, F, o, c, b, d, h, or C.`
Compression On	⬛	If the tape drive is compressing data on tape, the Compression On icon displays.
Write Protect	⬤	If the tape is write protected, the Write Protect icon displays.
Tape Activity	⬒↑	A tape drive is loading a cartridge.
	⬜	A tape drive has a cartridge loaded.
	←⬜	A tape drive is rewinding a cartridge.
	←⬒	A tape drive is unloading a cartridge.
	⬒	A tape drive has unloaded a cartridge.
	⬜→	A tape drive is reading data from a cartridge.
	→⬜	A tape drive is writing data to a cartridge.
	←⬜	A tape drive is erasing data from a cartridge.
	⬜↑	A tape drive is locating data on a cartridge.

Message Area

The message area displays six lines of text, graphic representations, or a combination of both (see **1** in Figure 18). Each text line can be up to 20 characters long. These lines communicate interactive dialogs, special messages, alerts, library configurations, and error codes. For more information about the error codes that display, see "Appendix F. Error Messages" on page 145.

RBBTM516-0
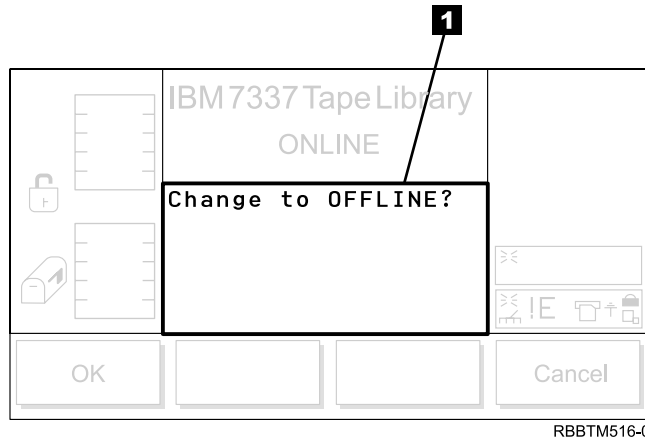
Figure 18. Messages Area

Tape Library Startup

Perform the following to start the 7337 Tape Library:

1. Securely latch the front door. The library does not require the door to be locked to operate properly. You can lock the front door for library security or to prevent the door from being opened accidentally.

2. Push the | on the main power switch (**1** in Figure 19 on page 37) to turn on the power.

CAUTION:
Movements of mechanical components in the 7337 Tape Library can cause serious injury. Before turning the main power switch ON, confirm that no danger exists to personnel or property.
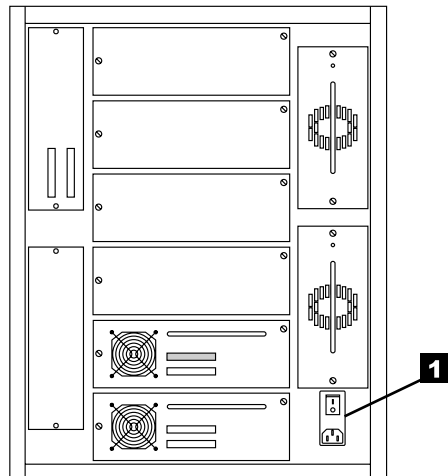
RBBTM517-0

Figure 19. Main Power Switch

Power is applied to the 7337 Tape Library. The firmware starts the boot process
with an introductory boot screen (see Figure 20).
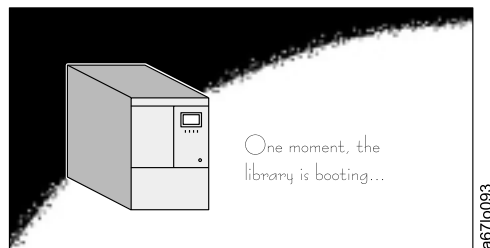
Figure 20. Boot Screen

The firmware initiates a SELF-TEST, TEACH (auto-configuration) and
INVENTORY operation. After all of the firmware procedures complete, the LCD
screen on the operator panel displays the Main Menu (initial screen) (see Figure 21
on page 38).

Tape Library Shutdown

You can shut down the 7337 Tape Library normally or by the emergency shutdown method.

Attention: Except in emergencies, stop the 7337 Tape Library with the normal shutdown procedure before switching off the main power switch. IBM is not responsible for damage that is caused by improper use of the main power switch. All risk lies entirely with the user.

Normal Shutdown

To properly shut down the 7337 Tape Library, perform the following steps:

1. Ensure that no communication is in progress between the host and the drives.
2. If the 7337 Tape Library is Online, press the button below the **Online/Offline** softkey (see Figure 21).

IBM 7337 Tape Library

ONLINE

| Online/ Offline... | Status▶ | Command▶ | More |

RBBTM518-0
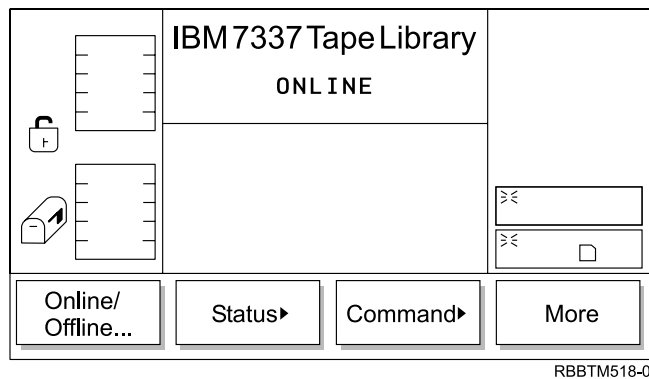
Figure 21. Main Menu (Initial Screen)

The Offline Confirmation Screen is displayed (see Figure 22).

IBM 7337 Tape Library

ONLINE

Change to OFFLINE?

| OK | | | Cancel |

RBBTM519-0
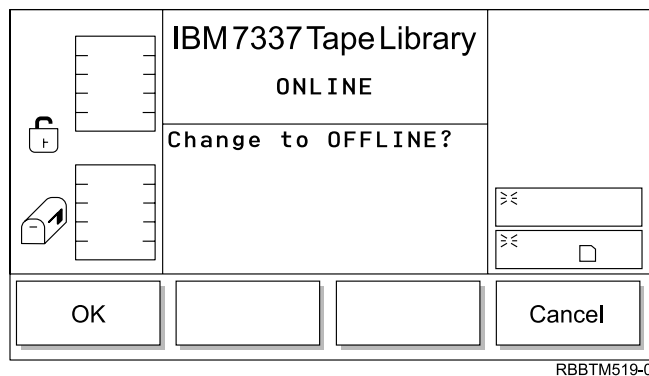
Figure 22. Offline Confirmation Dialog

3. Press the button below the **OK** softkey.

   The Offline Dialog displays (see Figure 23 on page 39).
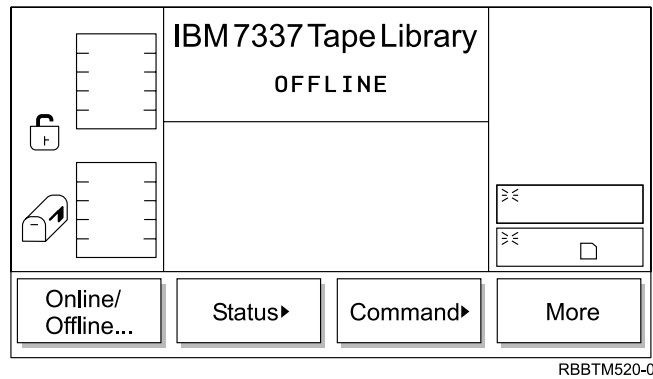
Figure 23. Offline Dialog

4. Visually confirm that the 7337 Tape Library has changed to the Offline state.

   The picker completes the current task. The library status area text line changes to OFFLINE.

5. Push the O on the main power switch (**1** in Figure 19 on page 37) to turn off the power.

   Power is removed from the 7337 Tape Library.

Emergency Shutdown

Attention: Perform the following step in cases of emergency only.

Push the O on the main power switch (**1** in Figure 19 on page 37) to turn off power.

Power is removed from the 7337 Tape Library. All picker movements stop immediately.

Tape Library Restart

Perform the following to restart the 7337 Tape Library:

1. If applicable, correct any conditions that required the 7337 Tape Library shutdown.

2. See "Tape Library Startup" on page 36 for instructions on the 7337 Tape Library start procedure.

Inserting Media

There are two ways to insert media into the library: through the I/O station or directly. The first time that you insert media into the library, you should use direct insertion (see "Direct Insertion into the Tape Library" on page 40).

I/O Station

Placement of new media into the library is best accomplished by using the I/O station. Using the I/O station to insert cartridges (import) does not disrupt library operations. To insert cartridges through the I/O station, perform the following procedure:

1. Open the I/O station door.

2. Insert the cartridge into an empty slot.

Chapter 3. Operation   **39**

Note: A barcode label MUST be installed on the tape cartridge if the library touch scan feature has been disabled. See "Config Dialog" on page 78 for more information on configuring the cartridge recognition features.

3. Close the I/O station.

   The library locks the I/O station and executes the TEACH and INVENTORY procedures for column 1. The library unlocks the I/O station.

4. Move the cartridge to the desired storage slot using one of the following methods:

   - Use the host software application.
   - Issue the SCSI MOVE MEDIUM command from the host with the source I/O station element address and the destination storage element address.
   - Use the Import command from the operator panel (see "Import Dialog" on page 67).
   - Use the Move Media command from the operator panel (see "Move Media Dialog" on page 59).

Direct Insertion into the Tape Library

To directly insert media, perform the following procedure:

1. Use the operator panel to place the library into the Offline state (**Main Menu —> Online/Offline —> OK**).

   The picker completes any current task.

2. Unlock and open the library door.

3. Place the cartridge into the desired storage slot.

   Note: A barcode label MUST be installed on the tape cartridge if the library touch scan feature has been disabled. See "Config Dialog" on page 78 for more information on configuring the cartridge recognition features.

4. Close and lock the door.

   The library executes the TEACH and INVENTORY procedures.

Ejecting Media

There are two ways to remove media from the library: through the I/O station or directly.

I/O Station

Use the I/O station to remove media from the library. Using the I/O station to remove cartridges (export) does not disrupt library operations. To remove cartridges through the I/O station, perform the following procedure:

1. Select which cartridges you want to move to the I/O station using one of the following methods:

   - Use the host software application.
   - Issue a SCSI MOVE MEDIUM command from the host with the source storage element address and the destination I/O station element address.
   - Use the Export command from the operator panel (see "Export Dialog" on page 68).
   - Use the Move Media command from the operator panel (see "Move Media Dialog" on page 59).

2. Pull on the handle to open the I/O station.

3. Remove the cartridge from the storage slot.

4. Close the I/O station.

   The library locks the I/O station and executes the TEACH and INVENTORY procedures for column 1. The library unlocks the I/O station.

Direct Removal from the Tape Library

To directly remove media, perform the following procedure:

1. Use the operator panel to place the library into the Offline state (**Main Menu —> Online/Offline —> OK**).

   The picker completes any current task.

2. Unlock and open the library door.

3. Remove the cartridge from the desired storage slot.

4. Close and lock the door.

   The library executes the TEACH and INVENTORY procedures.

Cleaning Drives

Whenever a drive requires cleaning, it alerts you with a message on the library operator panel or host console. The library uses the DLT cleaning cartridge to clean the drive with whatever cleaning method that you choose. In all methods, cleaning is performed after the data cartridge has been unloaded from the drive and before the next load.

There are two methods available for cleaning drives in the 7337 Tape Library:

Host cleaning
> Host/Application maintained and activated is the default condition. Host cleaning enables the host to detect the need to clean a tape drive and to control the cleaning process. The cleaning cartridge must be stored in one of the available storage slots within the library. For more information, see the section about cleaning in your application software documentation.

> **Note:** A barcode label MUST be installed on the tape cartridge if the library touch scan feature has been disabled. See "Config Dialog" on page 78 for more information on configuring the cartridge recognition features.

Manual cleaning
> Manual cleaning requires that you use the Move Media command from the library operator panel to insert a cleaning cartridge into the library to perform cleaning on one or more of the tape drives (see "Move Media Dialog" on page 59).

> **Note:** A barcode label MUST be installed on the tape cartridge if the library touch scan feature has been disabled. See "Config Dialog" on page 78 for more information on configuring the cartridge recognition features.

Cleaning the drive on a periodic basis is not recommended. Only clean the drive when the cleaning symbol displays in the drive status area of the operator panel (see Figure 17 on page 34).

Chapter 4. Menus and Commands

The operator panel provides a menu driven operator interface to the 7337 Tape Library. Menus allow selection of parameters and information regarding the status and current operating parameters of the 7337 Tape Library.

Using the Operator Panel Menu

Each menu is accessible through the operator panel push buttons. See "Operator Panel" on page 31 for an illustration and definition of the push buttons. See Figure 24 for an illustration of the menu tree mapping. Go to "Main Menu Selection" on page 45 for the actual menus.

Note: The information menus do not dynamically update. To view changes, reselect the menu that was changed.
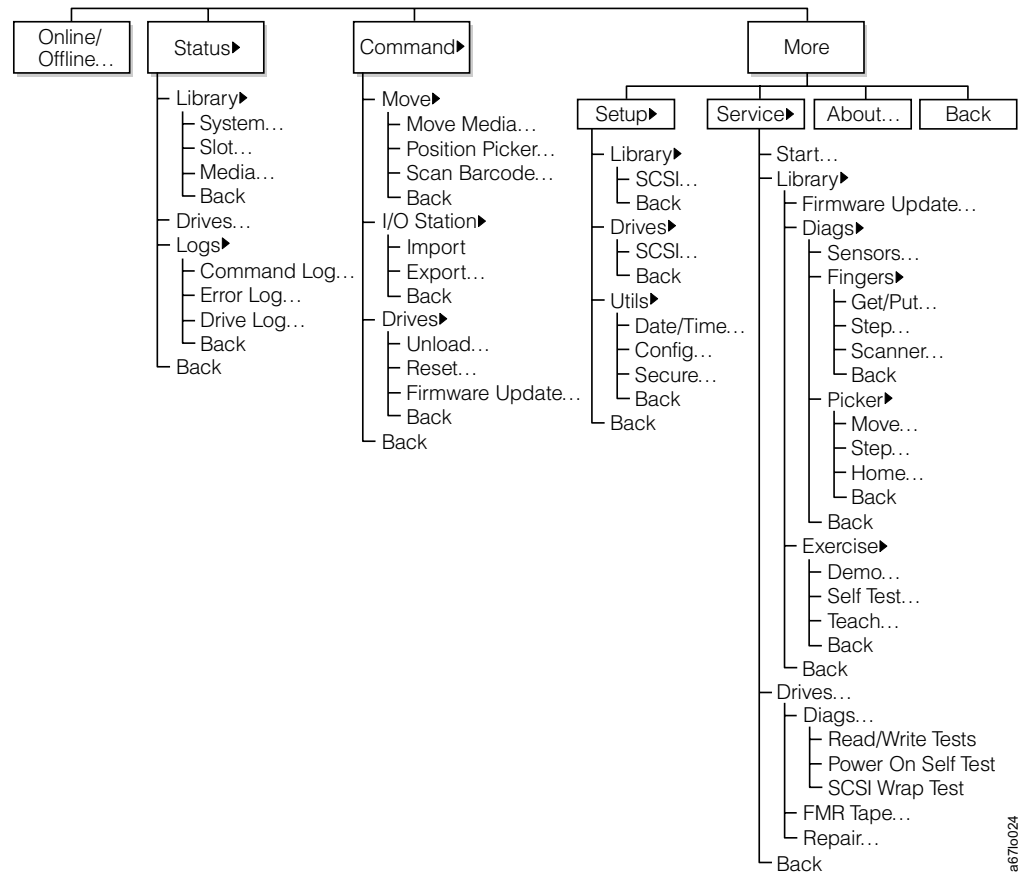
Figure 24. Menu Tree

Menu Guidelines

All menus and respective options are grouped according to function. The special characters following the softkey menu titles are described below.

- A keyword leading to another menu is followed by a black arrow. Example: **Move▶**

- A keyword leading to a dialog box is followed with three closely spaced dots. Example: **Move Media...**
- A keyword leading to an immediate action has no suffix.
- Most fields on the menus, submenus, dialogs, and screens are read-only. The fields that are writable are in reverse video. Example: `ON`

Using Commands That Require an Offline State

The commands listed under the **Commands** and **Service** menus require that the library be in an Offline state. If you attempt these commands while the library is Online, you will be requested to take the library Offline with the following dialogs (see Figure 25, Figure 26, and Figure 27 on page 45).

Figure 25. Change Dialog

To choose one of the selections, press the button below the desired softkey.
- If **Change** is selected, Figure 26 displays.
- If **Cancel** is selected, the operation is canceled, and the originating menu displays.

Figure 26. Offline Confirmation Dialog

To choose one of the selections, press the button below the desired softkey.
- If **OK** is selected, the library goes offline.
- If **Cancel** is selected, the operation is canceled, and the originating menu displays.

RBBTM523-0
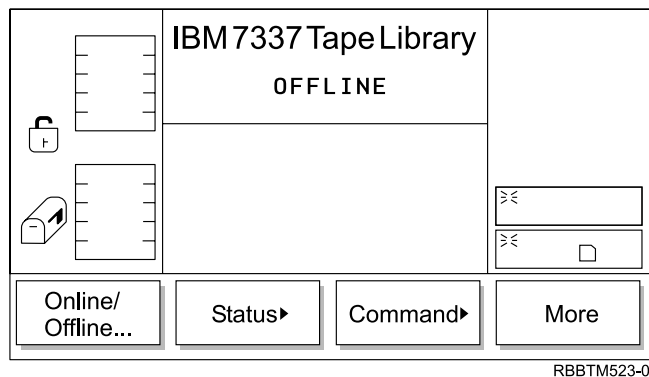
Figure 27. Completed Verification Dialog

Operator Intervention Message

If a problem causes an operator intervention message to appear, refer to the *7337 Model 360 Digital Linear Tape Library Service Guide*, SY44–0078 for a description of Service Action Codes, operator intervention messages, and parameters.

Operator Information Message

During the course of normal operation, operator information messages appear. See "Operator Information Messages" on page 145 for a listing of the available messages.

Main Menu Selection

The Main Menu is the first interactive menu that displays after turning the power on. The Main Menu consists of the initial screen and the alternate screen. All subsequent menus and options are selectable from the Main Menu. Eight options are available with four of the options present at all times. See Figure 28 for an illustration of the initial screen and Figure 29 on page 46 for the alternate screen of the Main Menu.
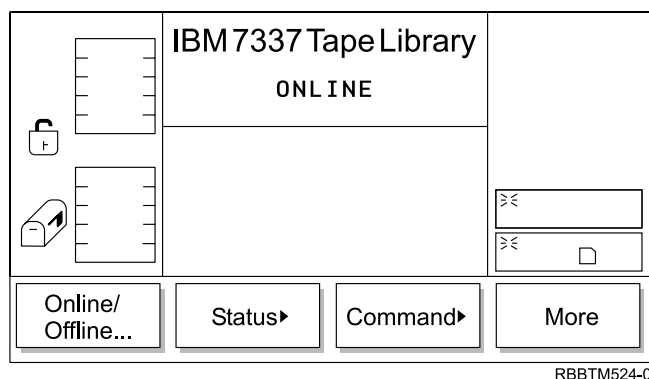
RBBTM524-0

Figure 28. Main Menu (initial screen)

Pressing the button below the **More** softkey causes the Main Menu (alternate screen) to display (see Figure 29 on page 46).
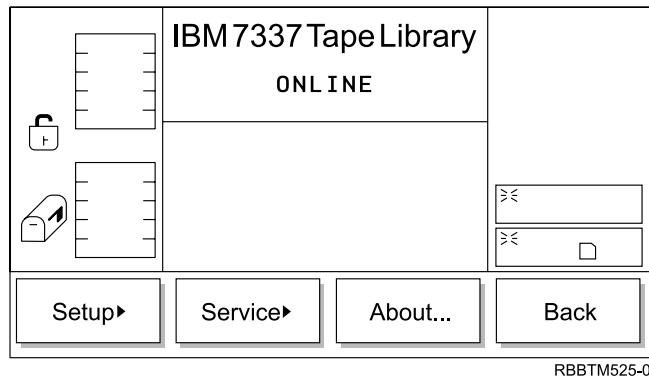
```
        ┌─────────────────────────────────────┐
        │           IBM 7337 Tape Library      │
        │              ONLINE                  │
        │                                      │
        │                                      │
        │                                      │
        ├──────────┬──────────┬────────┬───────┤
        │  Setup▶  │ Service▶ │ About..│  Back │
        └──────────┴──────────┴────────┴───────┘
                                    RBBTM525-0
```

Figure 29. Main Menu (alternate screen)

Pressing the button below the **Back** softkey causes the Main Menu (initial screen) to display again. To choose any of the selections, press the button below the desired softkey selection.

The selected operation is applied, and the appropriate menu displays.

Online/Offline Selection

The **Online/Offline** selection is used to change the operating state of the 7337 Tape Library after start-up, before shutdown, or before diagnostic operations. To select **Online/Offline** from the Main Menu (initial screen), press the button below the **Online/Offline** softkey.

The 7337 Tape Library changes from either Offline to Online state or Online to Offline state. This group of menus is discussed in "Using Commands That Require an Offline State" on page 44.

Status Menu Selection

The Status Menu is primarily used to provide various static and dynamic operating statistics. To select **Status** from the Main Menu (initial screen), press the button below the **Status** softkey. The Status Menu displays (see Figure 30).
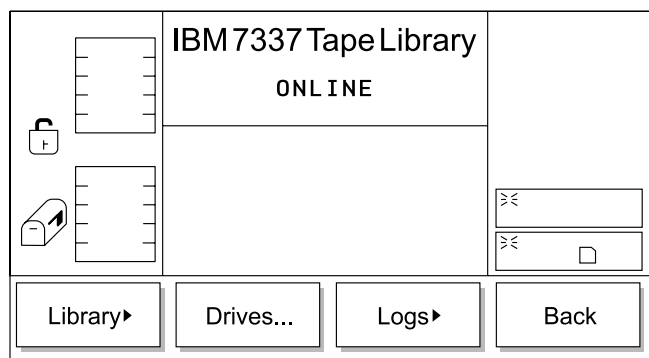
```
        ┌─────────────────────────────────────┐
        │           IBM 7337 Tape Library      │
        │              ONLINE                  │
        │                                      │
        │                                      │
        │                                      │
        ├──────────┬──────────┬────────┬───────┤
        │ Library▶ │ Drives.. │  Logs▶ │  Back │
        └──────────┴──────────┴────────┴───────┘
                                    RBBTM526-0
```

Figure 30. Status Menu

To choose one of the selections, press the button below the desired softkey.

- If **Library** is selected, the "Library Submenu" on page 47 displays.

- If **Drives** is selected, the "Drives Dialog" on page 51 displays.
- If **Logs** is selected, the "Logs Submenu" on page 52 displays.
- If **Back** is selected, the "Main Menu Selection" on page 45 displays.

Library Submenu

When **Library** is selected, the Library Submenu displays (see Figure 31). This is a collection of specific library status options.

RBBTM527-0
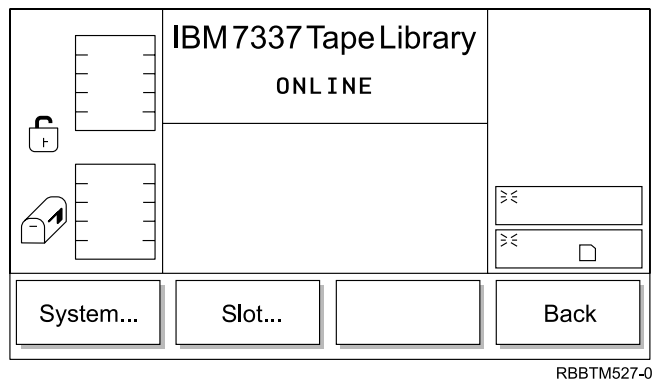
Figure 31. Library Submenu

To choose one of the selections, press the button below the desired softkey.
- If **System** is selected, the "System Dialog" displays.
- If **Slot** is selected, the "Slot Dialog" on page 48 displays.
- If **Back** is selected, the "Status Menu Selection" on page 46 displays.

System Dialog

When **System** is selected, the System Dialog displays (see Figure 32). Use this option to view the current library physical and statistical characteristics.

RBBTM528-0

Figure 32. System Dialog

To choose one of the selections, press the button below the desired softkey.
- If **OK** is selected, the "Library Submenu" displays.
- If **Next** is selected, the follow on dialog displays (see Figure 33 on page 48).

```
        IBM 7337 Tape Library
               ONLINE

        Moves:            37
        MB accessed:       0
        Get retries:       0
        Put retries:       0
        Scan retries:      0

           OK        Next
```

RBBTM529-0

Figure 33. Statistics Dialog

To choose one of the selections, press the button below the desired softkey.
• If **OK** is selected, the "Library Submenu" on page 47 displays.
• If **Next** is selected, the first screen of the Statistics Dialog displays again.

Slot Dialog
When **Slot** is selected, the Slot Dialog displays (see Figure 34). Use this option to view details about a specific slot within the library.

Note: The column, magazine, and slot parameter selections are interactive. The combination of the three parameters generates the element address.


```
        IBM 7337 Tape Library
               OFFLINE

           3        A
         2    4     B
          1  5      C
        Select TARGET: 1 C 1
        Storage <empty>

         OK    Change   Next   Cancel
              Column
```

RBBTM530-0

Figure 34. Slot Dialog

To choose one of the selections, perform the following steps:
1. Press the button below the desired softkey.
   • If **OK** is selected, the source parameters are accepted, and the Slot Information Dialog displays (see Figure 38 on page 50).
   • If **Change Column** is selected, the column indicator steps clockwise to the next column address. Repeat until the desired column is indicated.

     Note: If the chosen column element is a drive (column 3), no slot or magazine parameters are available. The current source parameter changes from column to drive and the Change Drive Dialog displays (see Figure 35 on page 49).

- If **Next** is selected, the current source parameter changes from column to magazine and the Change Magazine Dialog displays (see Figure 36).
- If **Cancel** is selected, the "Slot Dialog" on page 48 displays.
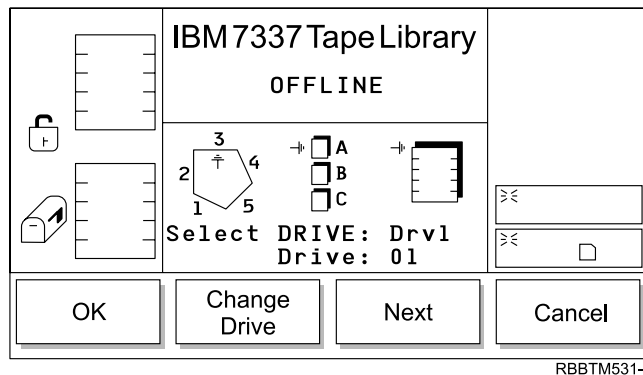
Figure 35. Change Drive Dialog
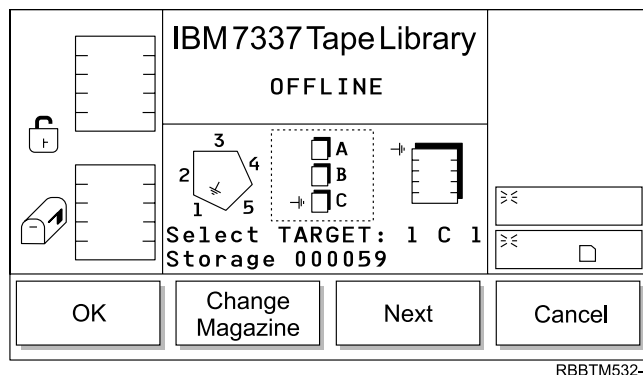
Figure 36. Change Magazine Dialog

2. Press the button below the desired softkey.
   - If **OK** is selected, the source parameters are accepted, and the Slot Information Dialog displays (see Figure 38 on page 50).
   - If **Change Magazine** is selected, the magazine indicator steps downward to the next magazine address. Repeat until the desired magazine is indicated.
   - If **Next** is selected, the current source parameter changes from magazine to slot and the Change Slot Dialog displays (see Figure 37 on page 50).
   - If **Cancel** is selected, the "Slot Dialog" on page 48 displays.

```
          IBM 7337 Tape Library
               OFFLINE

            3
           /|\        □ A
          2 | 4       □ B
          1 | 5    ┤ □ C
         Select TARGET: 1 C 1
         Storage 000059
```

| OK | Change Slot | Next | Cancel |
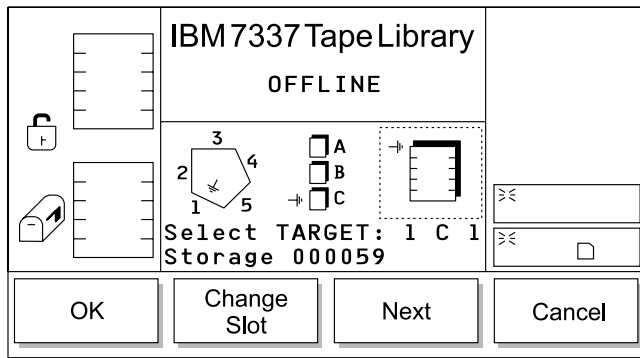
RBBTM533-0

Figure 37. Change Slot Dialog

3. Press the button below the desired softkey.
   - If **OK** is selected, the source parameters are accepted, and the Slot Information Dialog displays (see Figure 38).
   - If **Change Slot** is selected, the slot indicator rotates downward to the next slot address. Repeat until the desired slot is indicated.
   - If **Next** is selected, the current source parameter changes from slot to column as shown in the Slot Dialog (see Figure 34 on page 48).
   - If **Cancel** is selected, the "Slot Dialog" on page 48 displays.


```
          IBM 7337 Tape Library
               OFFLINE

         Status: Empty
         Volser: None
         Source: None
         Valid : Yes
```

| OK | Next | | |
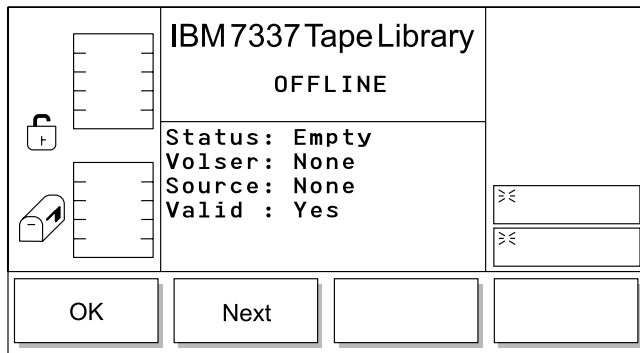
RBBTM534-0

Figure 38. Slot Information Dialog

4. Press the button below the desired softkey.
   - If **OK** is selected, the "Slot Dialog" on page 48 displays.
   - If **Next** is selected, the follow on dialog displays (see Figure 39 on page 51).

```
                 IBM 7337 Tape Library
                       OFFLINE

              Total Puts : 0000000
              Put Retries: 0000000
              Get Retries: 0000000

   OK            Next
```
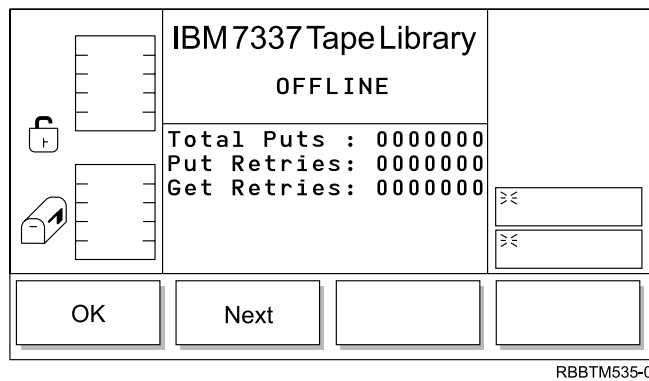
RBBTM535-0

Figure 39. Put/Get Information

- If **OK** is selected, the "Slot Dialog" on page 48 displays.
- If **Next** is selected, the follow on dialog displays (see Figure 40).


```
                 IBM 7337 Tape Library
                       OFFLINE

              Reserved    : No
              Reserve ID : N/A
              Reserved by: N/A

   OK            Next
```
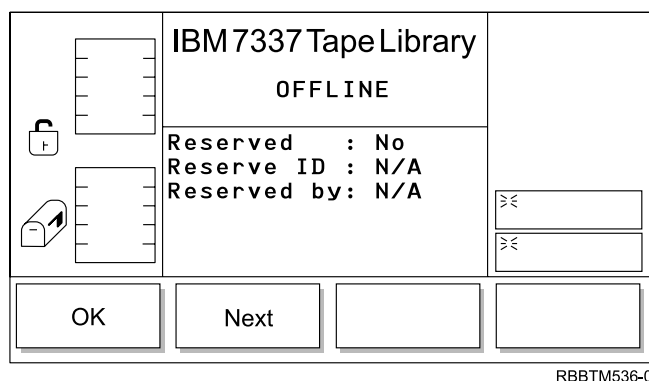
RBBTM536-0

Figure 40. Reserved Information

- If **OK** is selected, the "Slot Dialog" on page 48 displays.
- If **Next** is selected, the Slot Information Dialog displays (see Figure 38 on page 50).

Drives Dialog

When **Drives** is selected, the Drives Dialog displays (see Figure 41 on page 52). This is a collection of specific drive information.
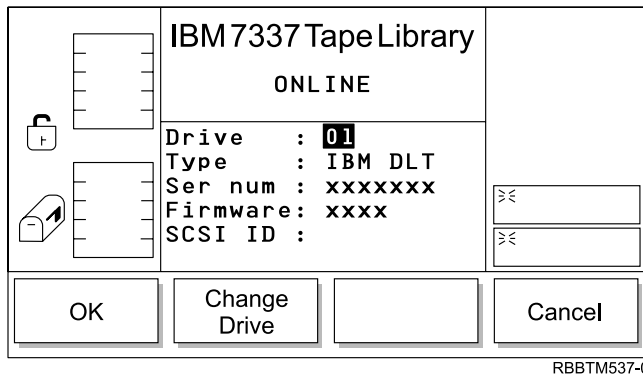
```
        ┌─────┐  IBM 7337 Tape Library
        │     │
        │     │       ONLINE
   🔓   │     │
   [F]  └─────┘ Drive   : 01
        ┌─────┐ Type    : IBM DLT
        │     │ Ser num : xxxxxxx        ✂
   ◢    │     │ Firmware: xxxx
        │     │ SCSI ID :               ✂
        └─────┘
    ┌──────────┬──────────┬──────────┬──────────┐
    │   OK     │  Change  │          │  Cancel  │
    │          │  Drive   │          │          │
    └──────────┴──────────┴──────────┴──────────┘
                                        RBBTM537-0
```

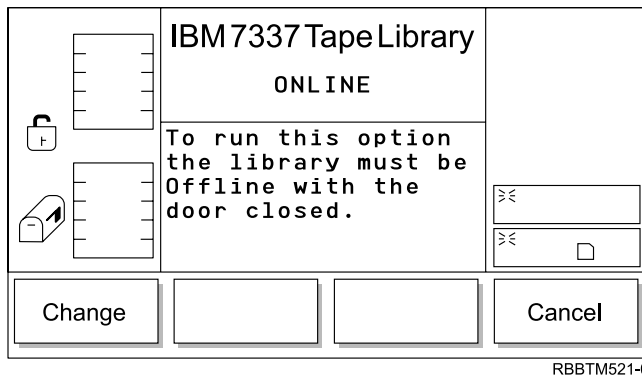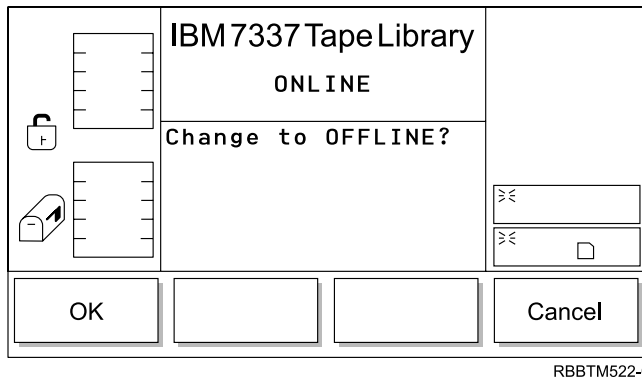*Figure 41. Drives Dialog*

To choose one of the selections, press the button below the desired softkey.
- If **OK** is selected, the "Status Menu Selection" on page 46 displays.
- If **Change Drive** is selected, the next drive in the library is chosen. The display refreshes with the information for the current drive selection.
- If **Cancel** is selected, the "Status Menu Selection" on page 46 displays.

Logs Submenu

When **Logs** is selected, the Logs Submenu displays (see Figure 42). The submenu offers various log information.
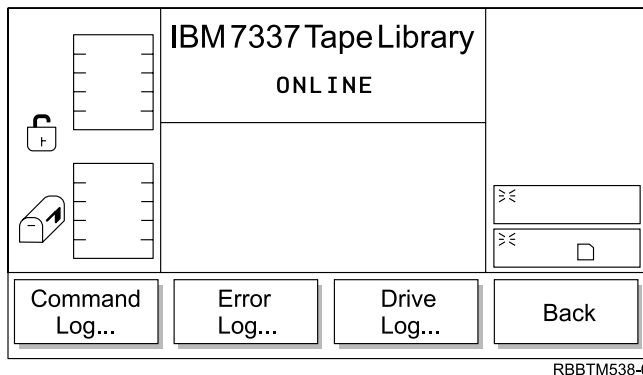

```
        ┌─────┐  IBM 7337 Tape Library
        │     │
        │     │       ONLINE
   🔓   │     │
   [F]  └─────┘
        ┌─────┐                          ✂
        │     │
   ◢    │     │                          ✂    ▢
        │     │
        └─────┘
    ┌──────────┬──────────┬──────────┬──────────┐
    │ Command  │  Error   │  Drive   │          │
    │ Log...   │  Log...  │  Log...  │   Back   │
    └──────────┴──────────┴──────────┴──────────┘
                                        RBBTM538-0
```

Figure 42. Logs Submenu

To choose one of the selections, press the button below the desired softkey.
- If **Command Log** is selected, the "Command Log Dialog" displays.
- If **Error Log** is selected, the "Error Log Dialog" on page 53 displays.
- If **Drive Log** is selected, the "Drive Log Dialog" on page 54 displays.
- If **Back** is selected, the "Status Menu Selection" on page 46 displays.

Command Log Dialog
When **Command Log** is selected, the Command Log Dialog displays (see Figure 43 on page 53). You can use this option to view a running history log of library operations with the option to dump the log to the serial port.

The log display starts at the most recent entry. The log keeps a maximum of 50 entries.

IBM 7337 Tape Library

ONLINE

01/30/00 17:12:09
SCSIDONE RES: Status
 good

| Next | Previous | Print | Cancel |

RBBTM539-0
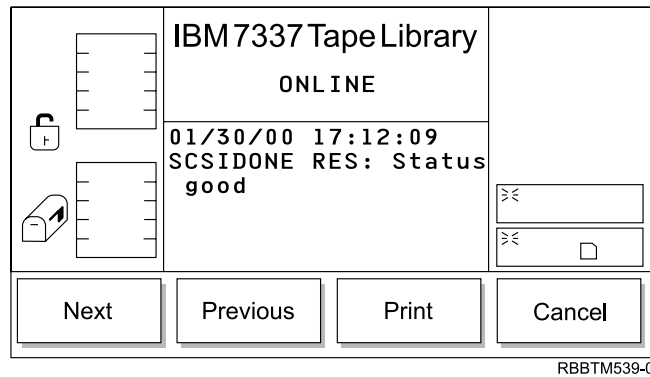
Figure 43. Command Log Dialog

To choose one of the selections, press the button below the desired softkey.

- If **Next** is selected, the next command log displays.
- If **Previous** is selected, the previous command log displays.
- If **Print** is selected, the "Print Dialog" displays.
- If **Cancel** is selected, the "Logs Submenu" on page 52 displays.

Print Dialog: When **Print** is selected, the Print Dialog displays (see Figure 44). Use this option to print a running history log of library operations.

IBM 7337 Tape Library

ONLINE

The library is about
to print the log to
the serial port!

| OK | | | Cancel |

RBBTM540-0
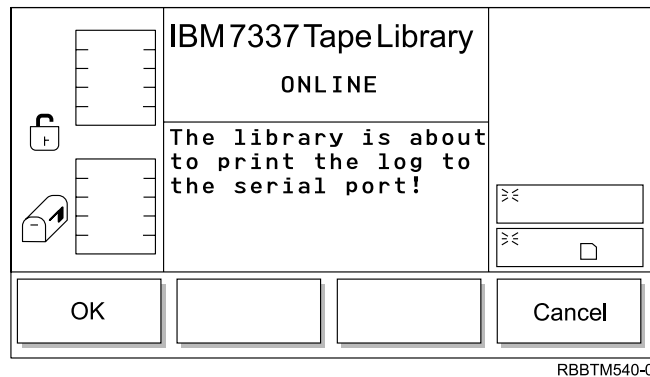
Figure 44. Print Dialog

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the command log is output on the serial port.
- If **Cancel** is selected, the "Command Log Dialog" on page 52 displays.

Error Log Dialog

When **Error Log** is selected, the Error Log Dialog displays (see Figure 45 on page 54). Use this option to view a running history log of error conditions that have occurred with the option to dump the log to the serial port.

The log display starts at the most recent entry. The log keeps a maximum of 213 entries.
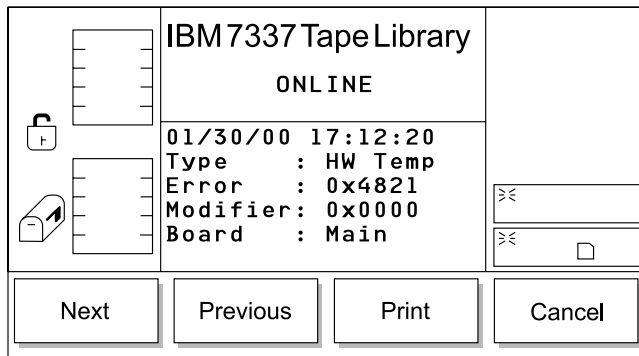
Figure 45. Error Log Dialog

To choose one of the selections, press the button below the desired softkey.

- If **Next** is selected, the next error log displays.
- If **Previous** is selected, the previous error log displays.
- If **Print** is selected, the follow on dialog displays (see "Print Dialog").
- If **Cancel** is selected, the "Logs Submenu" on page 52 displays.

Print Dialog: When **Print** is selected, the Print Dialog displays (see Figure 46). Use this option to print a running history log of library errors.

Figure 46. Print Dialog

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the error log is output on the serial port.
- If **Cancel** is selected, the "Error Log Dialog" on page 53 displays.

Drive Log Dialog

When **Drive Log** is selected, the Select Drive Dialog displays (see Figure 47 on page 55). Use this option to select which drive to view the log.

```
              IBM 7337 Tape Library

                       OFFLINE

              Select the drive to
              view the log.

              Drive: 01

     OK        Change                      Cancel
               Drive
```
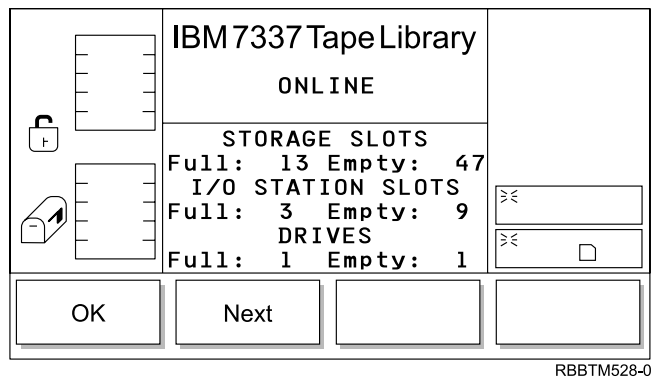
RBBTM543-0
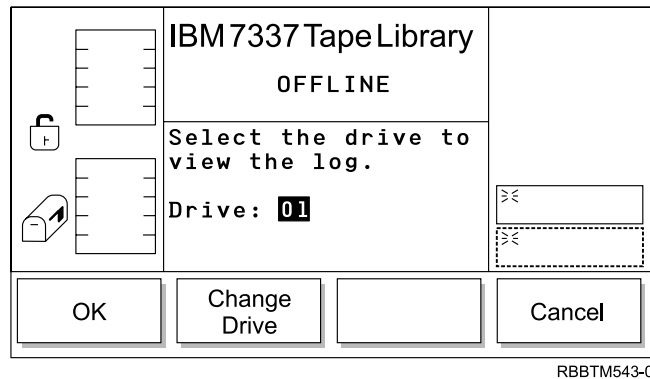
Figure 47. Select Drive Dialog

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the "Drive Log Dialog" displays.
- If **Change Drive** is selected, the next drive in the library is chosen. To view the Drive Log Dialog select **OK**, the "Drive Log Dialog" displays.
- If **Cancel** is selected, the "Logs Submenu" on page 52 displays.

Drive Log Dialog: When **OK** is selected, the Drive Log Dialog displays (see Figure 48). Use this option to view a running history log of drive error conditions that have occurred.


```
              IBM 7337 Tape Library

                       ONLINE

              Num  Error  FSC1  FSC2
               0     8    0000  0000
               1     8    0102  0000
               2     7    0102  0000
               3     6    0000  0000
               4     6    0000  0000

     Next       Previous     Options      Cancel
```

RBBTM544-0
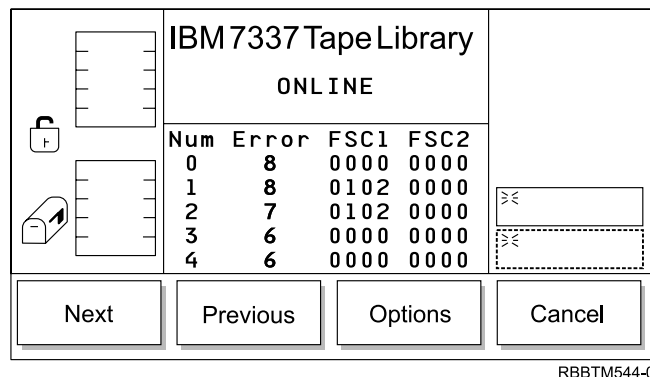
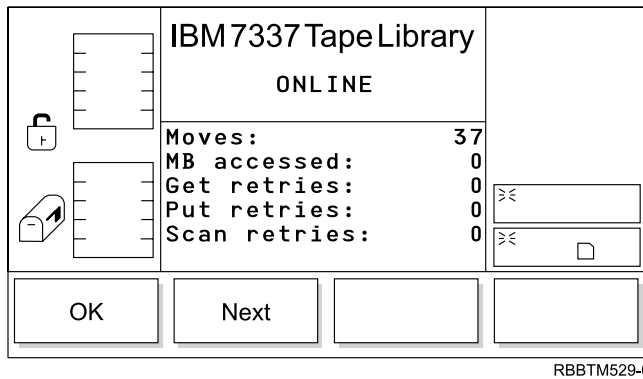*Figure 48. Drive Log Dialog*
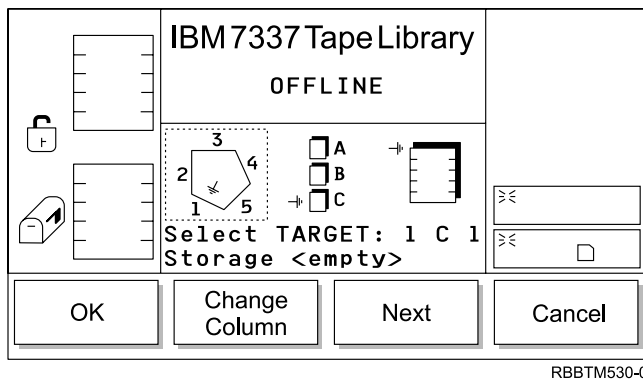
To choose one of the selections, press the button below the desired softkey.

- If **Next** is selected, the next set of logs displays.
- If **Previous** is selected, the previous set of logs displays.
- If **Options** is selected, the "Drive Log Options Dialog" displays.
- If **Cancel** is selected, the "Logs Submenu" on page 52 displays.

Drive Log Options Dialog: When **Drive Log** is selected, the Drive Log Options Dialog displays (see Figure 49 on page 56). Use this dialog to choose an option for the drive log.

```
         IBM 7337 Tape Library
                 OFFLINE

    Num  Error  FSC1  FSC2
     0     8    0000  0000
     1     8    0102  0000
     2     7    0102  0000
     3     6    0000  0000
     4     6    0000  0000

    Clear      Force      Copy        Back
    Log...     Dump...    Dump...
```
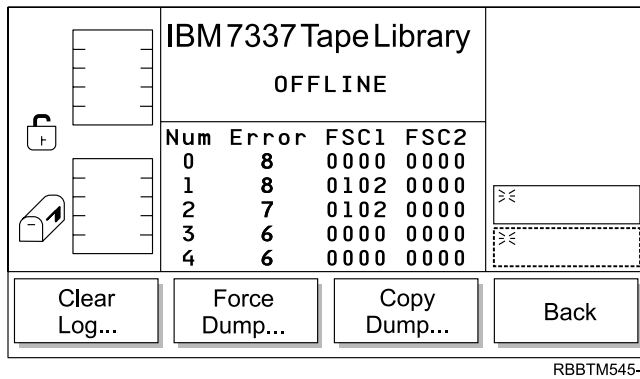
RBBTM545-0

Figure 49. Drive Log Options Dialog

To choose one of the selections, press the button below the desired softkey.
- If **Clear Log** is selected, the "Clear Log Dialog" displays.
- If **Force Dump** is selected, the "Force Dump Dialog" displays.
- If **Copy Dump** is selected, the "Copy Dump Dialog" on page 57 displays.
- If **Back** is selected, the "Drive Log Options Dialog" on page 55 displays.

Clear Log Dialog: When **Clear Log** is selected, the Clear Log Dialog displays (see Figure 50). Use this option to clear the drive log errors.


```
         IBM 7337 Tape Library
                 OFFLINE

    This option will
    clear the current
    drive log contents.


     OK                           Cancel
```
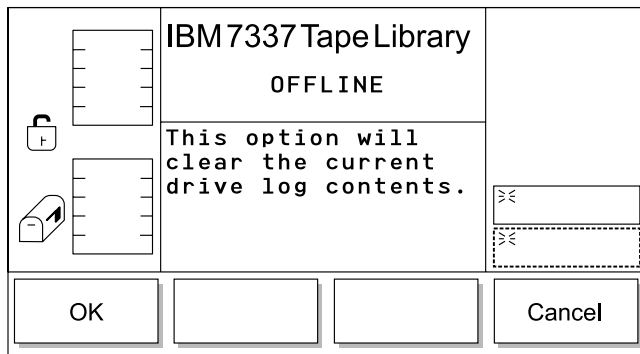
RBBTM546-0

Figure 50. Clear Log Dialog

To choose one of the selections, press the button below the desired softkey.
- If **OK** is selected, the error log is cleared.
- If **Cancel** is selected, the "Drive Log Options Dialog" on page 55 displays.

Force Dump Dialog: When **Force Dump** is selected, the Force Dump Dialog displays (see Figure 51 on page 57). Use this option to obtain a dump of the drive log.
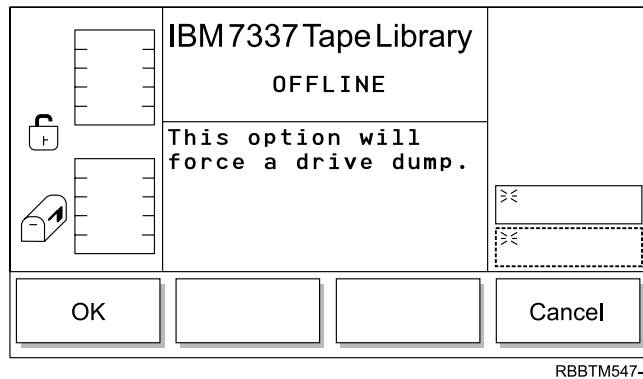
Figure 51. Force Dump Dialog

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the drive performs a dump.
- If **Cancel** is selected, the "Drive Log Options Dialog" on page 55 displays.

Copy Dump Dialog: When **Copy Dump** is selected, the Copy Dump Dialog displays (see Figure 52). Use this option to copy a dump of the drive log to a scratch (blank data or test cartridge) tape.
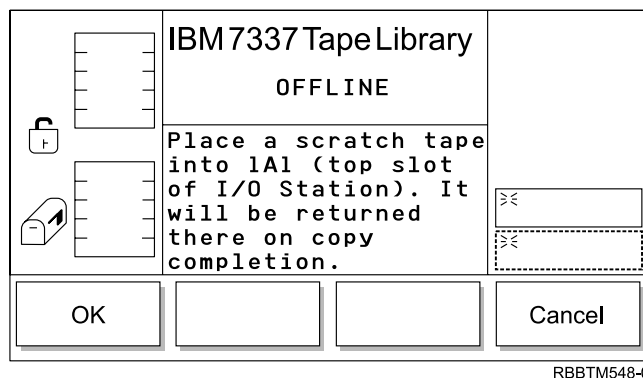
Figure 52. Copy Dump Dialog

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the drive performs a dump.
- If **Cancel** is selected, the "Drive Log Options Dialog" on page 55 displays.

Command Menu Selection

The Command Menu is primarily used to manipulate the library at a motion command level. Select **Command** from the Main Menu by pressing the button below the **Command** softkey. The Command Menu displays (see Figure 53).

```
┌──────────────────────────────────────────────┐
│  ┌────┐   IBM 7337 Tape Library               │
│  │    │        ONLINE                          │
│  └────┘                                        │
│  ┌─┐                                           │
│  │⊢│                                   ┌────┐  │
│  └─┘                                   │ ⊰⊱ │  │
│  ┌────┐                                ├────┤  │
│  │╱▮  │                                │ ⊰⊱ │  │
│  └────┘                                │  ▯ │  │
│                                        └────┘  │
│ ┌───────┐┌───────────┐┌─────────┐┌──────────┐ │
│ │ Move▶ ││I/O Station▶││ Drives▶ ││   Back   │ │
│ └───────┘└───────────┘└─────────┘└──────────┘ │
└──────────────────────────────────────────────┘
                                    RBBTM549-0
```
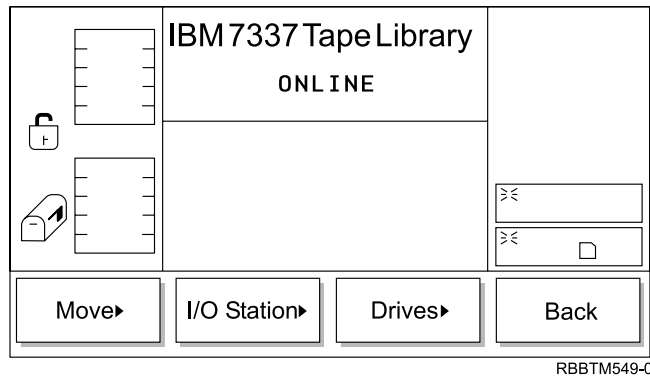
Figure 53. Command Menu

To choose one of the selections, press the button below the desired softkey.
- If **Move** is selected, the "Move Submenu" displays.
- If **I/O Station** is selected, the "I/O Station Submenu" on page 67 displays.
- If **Drives** is selected, the "Drives Submenu" on page 70 displays.
- If **Back** is selected, the "Main Menu Selection" on page 45 displays.

Move Submenu

When **Move** is selected, the Move Submenu displays (see Figure 54). This submenu contains a group of movement options.

```
┌──────────────────────────────────────────────┐
│  ┌────┐   IBM 7337 Tape Library               │
│  │    │        ONLINE                          │
│  └────┘                                        │
│  ┌─┐                                           │
│  │⊢│                                   ┌────┐  │
│  └─┘                                   │ ⊰⊱ │  │
│  ┌────┐                                ├────┤  │
│  │╱▮  │                                │ ⊰⊱ │  │
│  └────┘                                │  ▯ │  │
│                                        └────┘  │
│ ┌───────┐┌───────────┐┌─────────┐┌──────────┐ │
│ │ Move  ││ Position  ││  Scan   ││   Back   │ │
│ │Media...││ Picker... ││Barcode...││          │ │
│ └───────┘└───────────┘└─────────┘└──────────┘ │
└──────────────────────────────────────────────┘
                                    RBBTM550-0
```
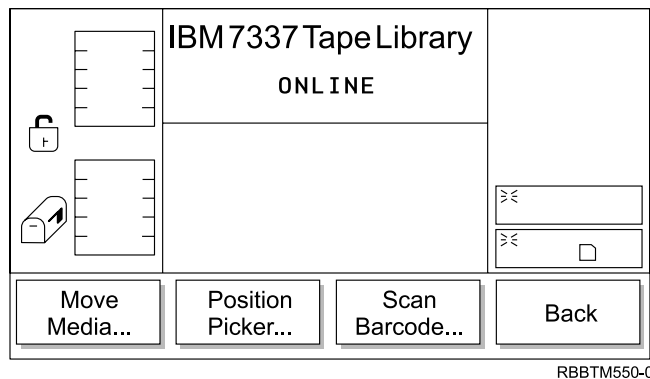
Figure 54. Move Submenu

To choose one of the selections, press the button below the desired softkey.
- If **Move Media** is selected, the "Move Media Dialog" on page 59 displays.
- If **Position Picker** is selected, the "Position Picker Dialog" on page 61 displays.
- If **Scan Barcode** is selected, the "Scan Barcode Dialog" on page 63 displays.
- If **Back** is selected, the "Command Menu Selection" displays.

Move Media Dialog

When **Move Media** is selected, the Source Move Media Dialog displays (see Figure 55). This option moves a cartridge from one element location to another element location.

Note: The column, magazine, and slot parameter selections are interactive. The combination of the three parameters generates the element address.
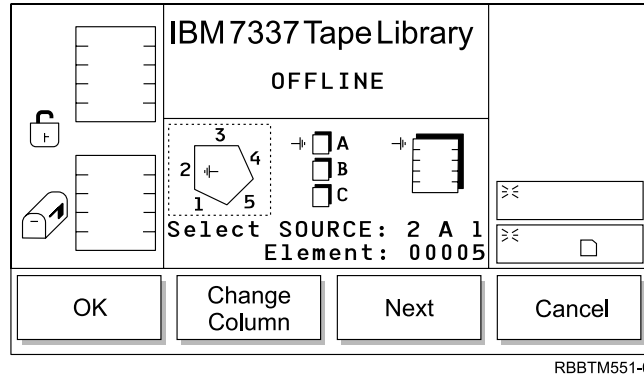
RBBTM551-0

Figure 55. Source Move Media Dialog

To choose one of the selections, follow the steps.

1. Press the button below the desired softkey.
   - If **OK** is selected, the source parameters are accepted and the Destination Move Media Dialog displays (see Figure 59 on page 61).
   - If **Change Column** is selected, the column indicator steps clockwise to the next column address. Repeat until the desired column is indicated.

     Note: If the chosen column element is a drive (column 3), no slot or magazine parameters are available. The current source parameter changes from column to drive and the Change Drive Dialog displays (see Figure 56).

   - If **Next** is selected, the current source parameter changes from column to magazine and the Change Magazine Dialog displays (see Figure 57 on page 60).
   - If **Cancel** is selected, the "Move Submenu" on page 58 displays.
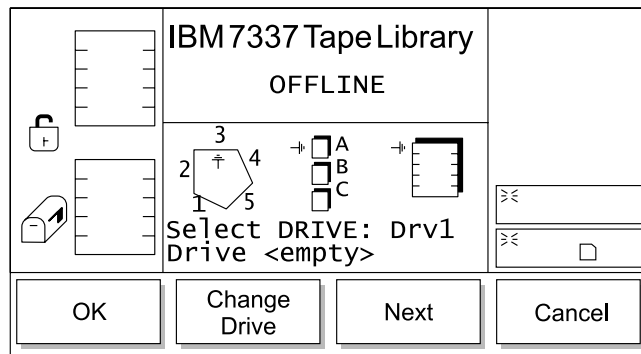
RBBTM552-0

Figure 56. Change Drive Dialog

IBM 7337 Tape Library

OFFLINE

Select SOURCE: 1 C 1
Storage <empty>

OK   Change Magazine   Next   Cancel
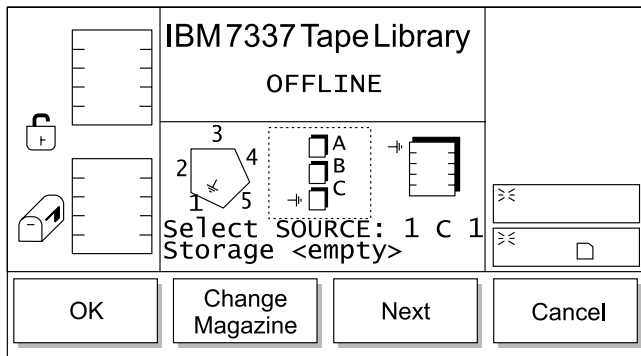
RBBTM553-0

Figure 57. Change Magazine Dialog

2. Press the button below the desired softkey.
   - If **OK** is selected, the source parameters are accepted and the Destination Move Media Dialog displays (see Figure 59 on page 61).
   - If **Change Magazine** is selected, the magazine indicator steps downward to the next magazine address. Repeat until the desired magazine is indicated.
   - If **Next** is selected, the current source parameter changes from magazine to slot and the Change Slot Dialog displays (see Figure 58).
   - If **Cancel** is selected, the "Move Submenu" on page 58 displays.

IBM 7337 Tape Library

OFFLINE

Select SOURCE: 1 C 1
Storage <empty>

OK   Change Slot   Next   Cancel
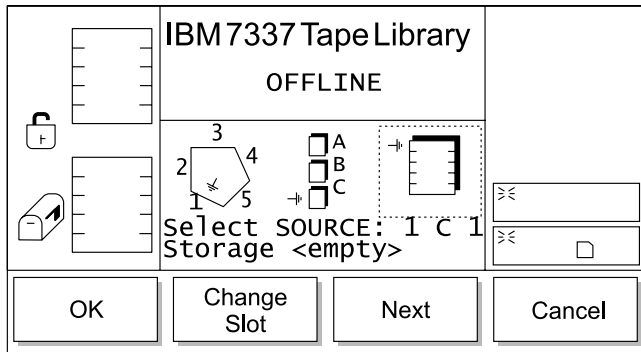
RBBTM554-0

Figure 58. Change Slot Dialog

3. Press the button below the desired softkey.
   - If **OK** is selected, the source parameters are accepted and the Destination Move Media Dialog displays (see Figure 59 on page 61).
   - If **Change Slot** is selected, the slot indicator steps downward to the next slot address. Repeat until the desired slot is indicated.
   - If **Next** is selected, the current source parameter changes from slot to column (see Figure 55 on page 59).
   - If **Cancel** is selected, the "Move Submenu" on page 58 displays.
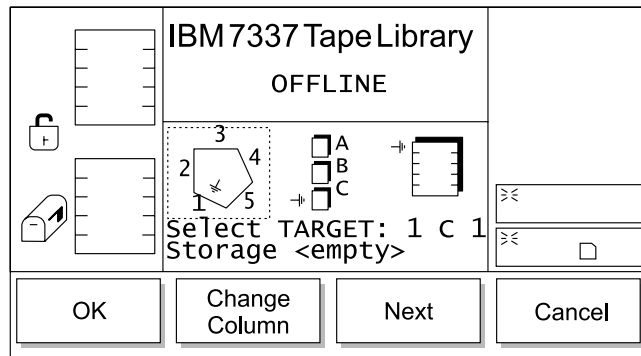
Figure 59. Destination Move Media Dialog

4. Repeat the Source Move procedure Step 1 through Step 3 in "Move Media Dialog" on page 59, to establish the Destination Move element address.

The cartridge moves from the chosen source element address location to the chosen destination element address location.

Position Picker Dialog

When **Position Picker** is selected, the Position Picker Dialog displays (see Figure 60). This option positions the picker in front of a specific element.

Note: The column, magazine, and slot parameter selections are interactive. The combination of the three parameters generates the element address.
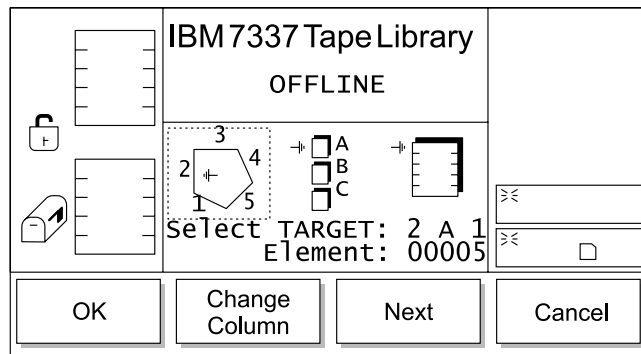
Figure 60. Position Picker Dialog

To choose one of the selections, perform the following steps:

1. Press the button below the desired softkey.
   - If **OK** is selected, the source parameters are accepted, and the picker moves to the chosen element address location.
   - If **Change Column** is selected, the column indicator steps clockwise to the next column address. Repeat until the desired column is indicated.

     Note: If the chosen column element is a drive (column 3), no slot or magazine parameters are available. The current source parameter changes from column to drive and the Change Drive Dialog displays (see Figure 61 on page 62).

- If **Next** is selected, the current source parameter changes from column to magazine and the Change Magazine Dialog displays (see Figure 62).
- If **Cancel** is selected, the "Move Submenu" on page 58 displays.
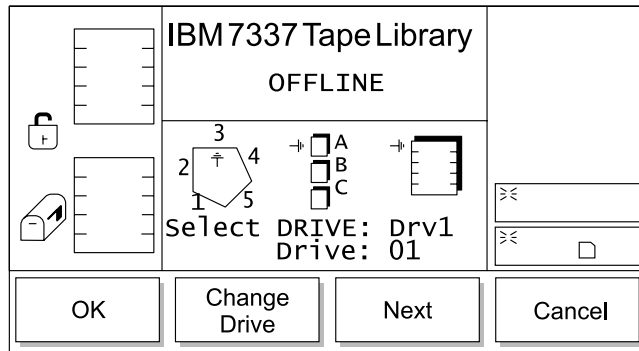
RBBTM557-0

Figure 61. Change Drive Dialog
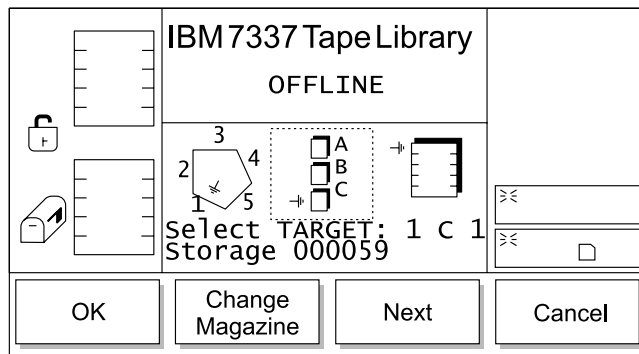
RBBTM558-0

Figure 62. Change Magazine Dialog

2. Press the button below the desired softkey.
   - If **OK** is selected, the source parameters are accepted, and the picker moves to the chosen element address location.
   - If **Change Magazine** is selected, the magazine indicator steps downward to the next magazine address. Repeat until the desired magazine is indicated.
   - If **Next** is selected, the current source parameter changes from magazine to slot and the Change Slot Dialog displays (see Figure 63 on page 63).
   - If **Cancel** is selected, the "Move Submenu" on page 58 displays.
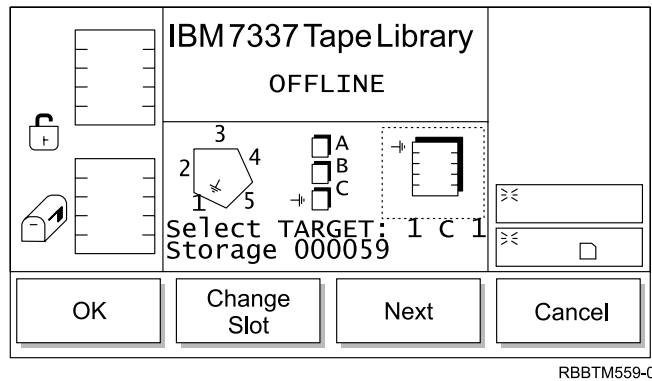
Figure 63. Change Slot Dialog

3. Press the button below the desired softkey.
   - If **OK** is selected, the source parameters are accepted, and the picker moves to the chosen element address location.
   - If **Change Slot** is selected, the slot indicator rotates downward to the next slot address. Repeat until the desired slot is indicated.
   - If **Next** is selected, the current source parameter changes from slot to column as shown in the Position Picker Dialog (see Figure 60 on page 61).
   - If **Cancel** is selected, the "Move Submenu" on page 58 displays.

Scan Barcode Dialog

When **Scan Barcode** is selected, the Scan Barcode Dialog displays (see Figure 64). This option performs an inventory on a range of slots.

Note: The column, magazine, and slot parameter selections are interactive. The combination of the three parameters generates the element address.
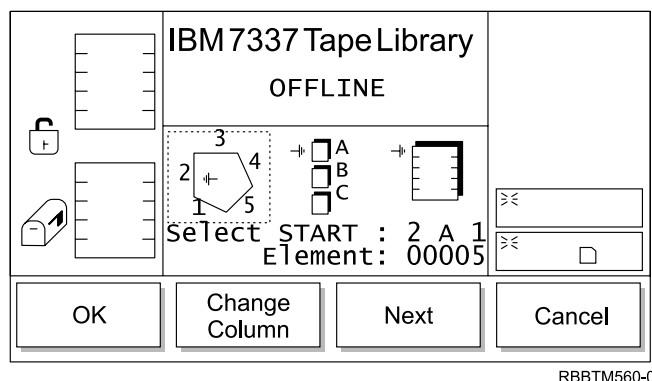
Figure 64. Scan Barcode Dialog

To choose one of the selections, perform the following steps:
1. Press the button below the desired softkey.
   - If **OK** is selected, the fields are accepted and the follow on dialog displays (see Figure 68 on page 65).
   - If **Change Column** is selected, the column indicator steps clockwise to the next column address. Repeat until the desired column is indicated.

Note: If the chosen column element is a drive (column 3), no slot or magazine parameters are available. The current source parameter changes from column to drive and the Change Drive Dialog displays (see Figure 65).

- If **Next** is selected, the current source parameter changes from column to magazine and the Change Magazine Dialog displays (see Figure 66).
- If **Cancel** is selected, the "Command Menu Selection" on page 58 displays.
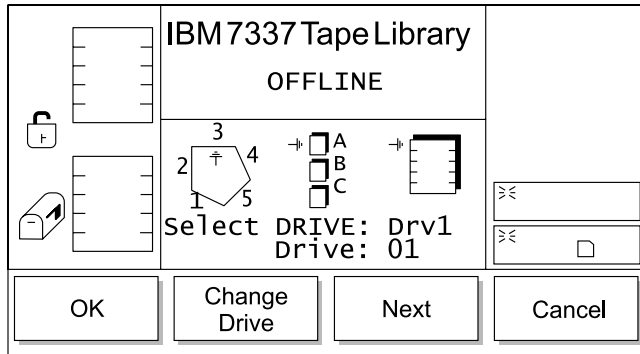
RBBTM561-0

Figure 65. Change Drive Dialog
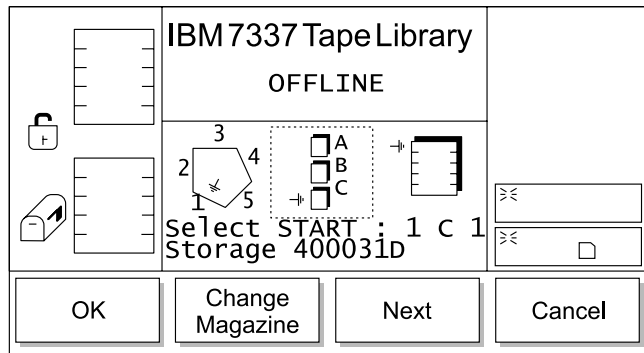
RBBTM562-0

Figure 66. Change Magazine Dialog

2. Press the button below the desired softkey.
   - If **OK** is selected, the fields are accepted and the follow on dialog displays (see Figure 68 on page 65).
   - If **Change Magazine** is selected, the magazine indicator steps downward to the next magazine address. Repeat until the desired magazine is indicated.
   - If **Next** is selected, the current source parameter changes from magazine to slot and the Change Slot Dialog displays (see Figure 67 on page 65).
   - If **Cancel** is selected, the "Command Menu Selection" on page 58 displays.

IBM 7337 Tape Library

OFFLINE

Select START : 4 B 3
Storage 000035

OK | Change Slot | Next | Cancel
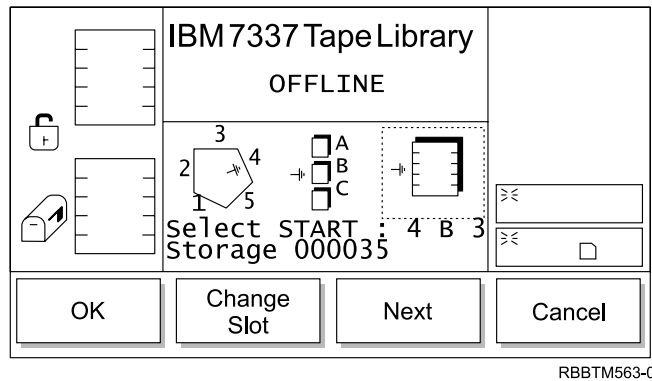
RBBTM563-0

Figure 67. Change Slot Dialog

3. Press the button below the desired softkey.
   - If **OK** is selected, the fields are accepted and the follow on dialog displays (see Figure 68).
   - If **Change Slot** is selected, the slot indicator rotates downward to the next slot address. Repeat until the desired slot is indicated.
   - If **Next** is selected, the current source parameter changes from slot to column as shown in the Scan Barcode Dialog (see Figure 64 on page 63).
   - If **Cancel** is selected, the "Command Menu Selection" on page 58 displays.

IBM 7337 Tape Library

OFFLINE

Enter the number of slots to scan: 060

Show results : Yes

Up | Down | Next | Cancel
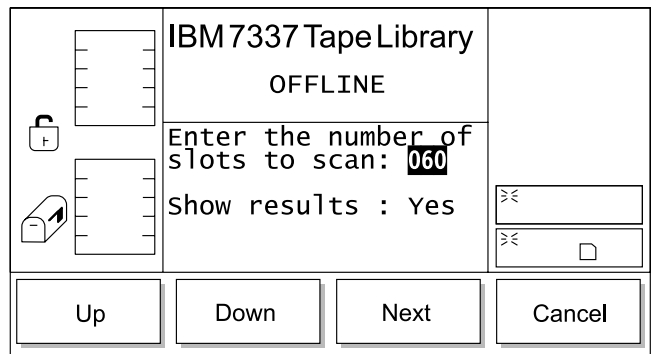
RBBTM564-0

Figure 68. Select Slots Dialog

4. Press the button below the desired softkey.
   - If **Up** is selected, the value of the current field is increased.
   - If **Down** is selected, the value of the current field is decreased.
   - If **Next** is selected, the next field in the list becomes the active field (see Figure 69 on page 66).
   - If **Cancel** is selected, the "Command Menu Selection" on page 58 displays.

```
        ┌────────────────────────────────┐
        │  ┌────┐  IBM 7337 Tape Library  │
        │  │    │                         │
        │  │    │       OFFLINE           │
        │  │    │  ┌──────────────────┐   │
        │ 🔒 ├──┤  │Enter the number of│  │
        │  │  │  │  │slots to scan: 060 │  │
        │  │    │  │Show results : ▮Yes▮│ ✂│
        │  │    │  └──────────────────┘  ✂ ▯│
        │  └────┘                         │
        ├───────┬────────┬────────┬───────┤
        │  OK   │ Yes/No │  Next  │ Cancel│
        └───────┴────────┴────────┴───────┘
```
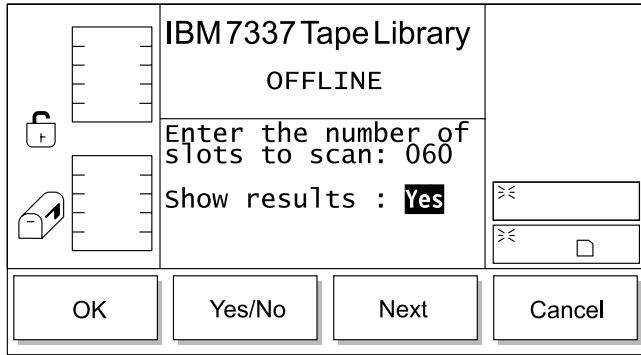
RBBTM565-0

Figure 69. Confirm Dialog

5. Press the button below the desired softkey.
   - If **OK** is selected, the fields are accepted and the follow on dialog displays (see Figure 70 and Figure 71).
   - If **Yes/No** is selected, the value of the current field is toggled.
   - If **Next** is selected, the next field in the list becomes the active field (see Figure 68 on page 65).
   - If **Cancel** is selected, the "Command Menu Selection" on page 58 displays.


```
        ┌────────────────────────────────┐
        │  ┌────┐  IBM 7337 Tape Library  │
        │  │    │                         │
        │  │    │       OFFLINE           │
        │ 🔒 ├──┤  Requested command is   │
        │  │  │  │  now in progress...    │
        │  │    │                        ✂│
        │  │    │                       ✂ ▯│
        │  └────┘                         │
        ├───────┬────────┬────────┬───────┤
        │  OK   │        │        │       │
        └───────┴────────┴────────┴───────┘
```

RBBTM569-0

Figure 70. Progress Dialog


```
        ┌────────────────────────────────┐
        │  ┌────┐  IBM 7337 Tape Library  │
        │  │    │                         │
        │  │    │       OFFLINE           │
        │ 🔒 ├──┤  Requested command is   │
        │  │  │  │  now complete.         │
        │  │    │  Found storage    :1    │
        │  │    │  Found I/O station:0   ✂│
        │  │    │  Found drives     :0  ✂ │
        │  └────┘        Total:1          │
        ├───────┬────────┬────────┬───────┤
        │  OK   │        │        │       │
        └───────┴────────┴────────┴───────┘
```
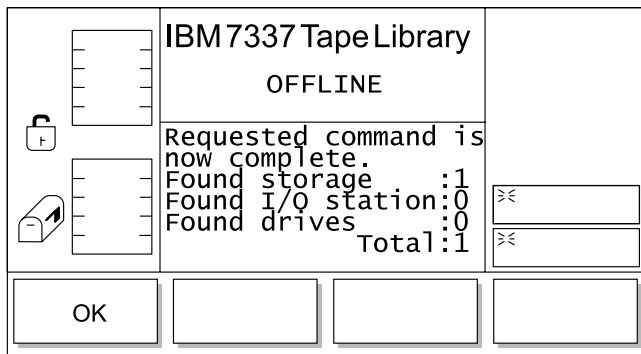
RBBTM567-0

Figure 71. Completion Dialog

I/O Station Submenu

When **I/O Station** is selected, the I/O Station Submenu displays (see Figure 72). This submenu imports cartridges to the library or exports cartridges from the library.

Figure 72. Import/Export Dialog

To choose one of the selections, press the button below the desired softkey.

- If **Import** is selected, the "Import Dialog" displays.
- If **Export** is selected, the "Export Dialog" on page 68 displays.
- If **Back** is selected, the "Command Menu Selection" on page 58 displays.

Import Dialog

When **Import** is selected, the Import Dialog displays (see Figure 73). This screen indicates the initial operation for importing cartridges into the library.

Figure 73. Command in Progress Screen

The picker scans the cartridge and moves the cartridge to the first available empty slot.

```
                    IBM 7337 Tape Library
                           OFFLINE

                    Requested command is
                    now complete.




         OK
```
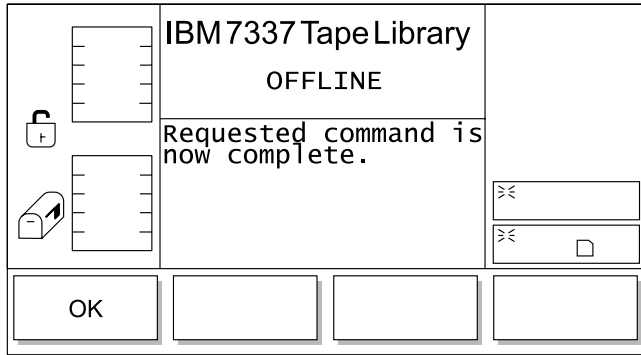
RBBTM570-0

Figure 74. Command Completed Screen

The picker has completed the Import operation.

- If **OK** is selected, the "I/O Station Submenu" on page 67 displays.

Export Dialog

When **Export** is selected, the Export screen displays (see Figure 75). This dialog indicates the initial operation for exporting cartridges out of the library. Each cartridge that is exported reduces the maximum export limit.


```
                    IBM 7337 Tape Library
                           OFFLINE

                    Choose cartridges to
                    export from the list
                    that follows. Use
                    Select for choices,
                    OK to begin export.
                    Export limit: 12

         OK                                 Cancel
```
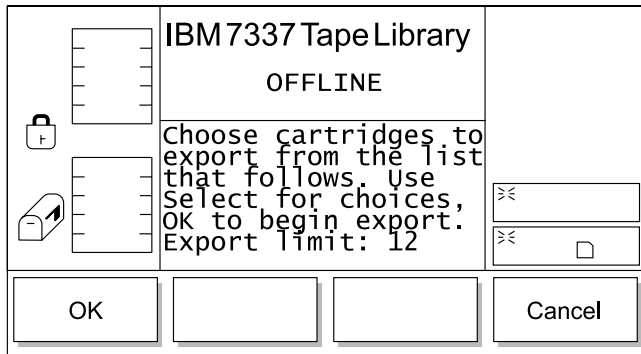
RBBTM571-0

Figure 75. Export Dialog

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the follow on dialog displays (see Figure 76 on page 69).
- If **Cancel** is selected, the "I/O Station Submenu" on page 67 displays.

```
                IBM 7337 Tape Library
                      OFFLINE

        000095              [2B4]
        EMS119              [2B5]
        EMS152              [4A3]
        EMS005              [4B1]
        EMS129              [5B2]


    Select      Page Up      Page        Cancel
                             Down
```

RBBTM572-0

Figure 76. Export List Dialog

To choose one of the selections, press the button below the desired softkey.
- If **Select** is selected, the selection cursor displays next to the first item in the item list (see Figure 77).
- If **Page Up** is selected, the dialog refreshes with the previous set of list items.
- If **Page Down** is selected, the dialog refreshes with the next set of list items.
- If **Cancel** is selected, the "I/O Station Submenu" on page 67 displays.


```
                IBM 7337 Tape Library
                      OFFLINE

       >000095              [2B4]
        EMS119              [2B5]
        EMS152              [4A3]
        EMS005              [4B1]
        EMS129              [5B2]


      OK         Select       Next        Pages
```

RBBTM573-0

Figure 77. Export Select Dialog

To choose one of the selections, press the button below the desired softkey.
- If **OK** is selected and cartridges are selected, the list is accepted, and the Export operation begins. If no items are selected, this softkey is not enabled.
- If **Select** is selected, the current item is highlighted to indicate a valid selection (see Figure 78 on page 70).
- If **Next** is selected, the selection cursor displays by the next item in the item list.
- If **Pages** is selected, the dialog returns to the Export List Dialog (see Figure 76). You can make additional selections, or cancel the Export operation.

```
          IBM 7337 Tape Library
                OFFLINE

      > 000095            [2B4]
        EMS119            [2B5]
        EMS152            [4A3]
        EMS005            [4B1]
        EMS129            [5B2]
```

| OK | Select | Next | Pages |
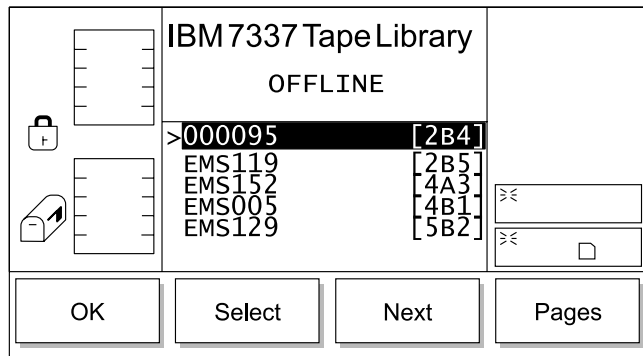
RBBTM574-0

Figure 78. Export Selected Dialog

Drives Submenu

When **Drives** is selected, the Drives Submenu displays (see Figure 79). This submenu contains functions performed by the drives.


```
          IBM 7337 Tape Library
                OFFLINE
```

| Unload... | Reset... | Firmware Update... | Back |
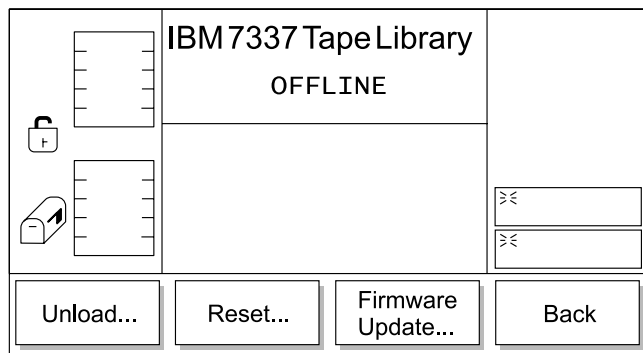
RBBTM575-0

Figure 79. Drives Submenu

To choose one of the selections, press the button below the desired softkey.

- If **Unload** is selected, the "Unload Dialog" displays.
- If **Reset** is selected, the "Reset Dialog" on page 71 displays.
- If **Firmware Update** is selected, the "Firmware Update Dialog" on page 72 displays.
- If **Back** is selected, the "Command Menu Selection" on page 58 displays.

Unload Dialog
When **Unload** is selected, the Unload Dialog displays (see Figure 80 on page 71). This option unloads a tape cartridge from the selected drive.

```
        ┌─────┐  IBM 7337 Tape Library
        │     │
        │     │       OFFLINE
    ┌┐  └─────┘  ─────────────────────
    └┘          Select the drive to
        ┌─────┐  unload and the tape
        │     │  will be returned to     ┌──────┐
        │  ╱  │  its home slot.          │  ><  │
        │ ╱   │  Drive: 01               └──────┘
        └─────┘                          ┌┄┄┄┄┄┄┐
                                         ┊  ><  ┊
                                         └┄┄┄┄┄┄┘
    ┌──────────┬──────────┬──────────┬──────────┐
    │    OK    │  Change  │          │  Cancel  │
    │          │  Drive   │          │          │
    └──────────┴──────────┴──────────┴──────────┘
                                         RBBTM576-0
```

Figure 80. Unload Dialog

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the unload operation begins.
- If **Change Drive** is selected, the next drive in the library is chosen. To start the unload operation select **OK**.
- If **Cancel** is selected, the "Drives Submenu" on page 70 displays.

Reset Dialog

When **Reset** is selected, the Reset Dialog displays (see Figure 81). This option resets the selected drive.
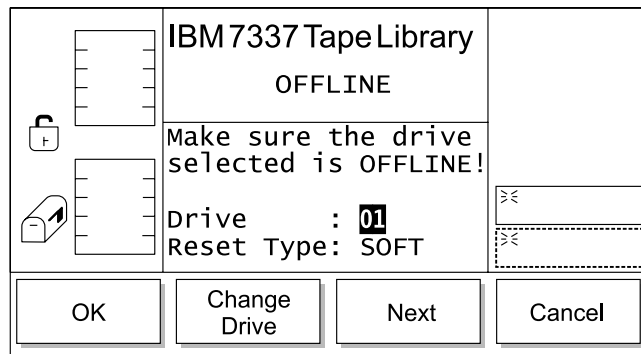
```
        ┌─────┐  IBM 7337 Tape Library
        │     │
        │     │       OFFLINE
    ┌┐  └─────┘  ─────────────────────
    └┘          Make sure the drive
        ┌─────┐  selected is OFFLINE!
        │     │                          ┌──────┐
        │  ╱  │  Drive     : 01          │  ><  │
        │ ╱   │  Reset Type: SOFT        └──────┘
        └─────┘                          ┌┄┄┄┄┄┄┐
                                         ┊  ><  ┊
                                         └┄┄┄┄┄┄┘
    ┌──────────┬──────────┬──────────┬──────────┐
    │    OK    │  Change  │   Next   │  Cancel  │
    │          │  Drive   │          │          │
    └──────────┴──────────┴──────────┴──────────┘
                                         RBBTM577-0
```

Figure 81. Reset Dialog

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the reset operation begins.
- If **Change Drive** is selected, the next drive in the library is chosen. To start the reset operation select **OK**.
- If **Next** is selected, the next field becomes the active field (see Figure 82 on page 72).
- If **Cancel** is selected, the "Drives Submenu" on page 70 displays.
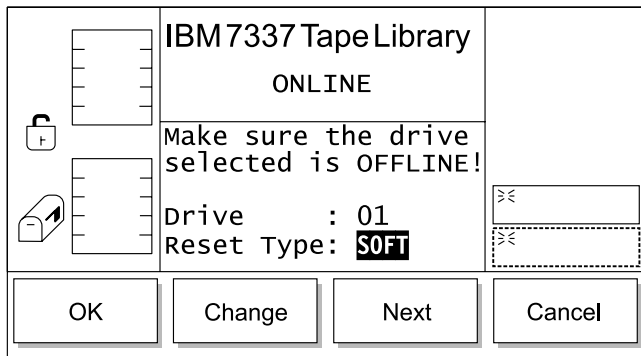
```
┌─────────────────────────────────────────────────┐
│  ┌───┐  IBM 7337 Tape Library                     │
│  │   │           ONLINE                           │
│  │   │  ┌──────────────────────┐                  │
│  │   │  │Make sure the drive   │                  │
│ ┌┴┐   │ │selected is OFFLINE!  │  ┌────────────┐  │
│ │F│     │                      │  │     ><     │  │
│ └─┘  ┌──┤ Drive     : 01       │  ├────────────┤  │
│ ╱▔▏  │  │ Reset Type: ▉SOFT▉   │  │     ><     │  │
│ ▏ ╱  │  │                      │  └────────────┘  │
│  ┌─────────┐ ┌─────────┐ ┌────────┐ ┌─────────┐  │
│  │   OK    │ │ Change  │ │  Next  │ │ Cancel  │  │
│  └─────────┘ └─────────┘ └────────┘ └─────────┘  │
└─────────────────────────────────────────────────┘
                                      RBBTM578-0
```
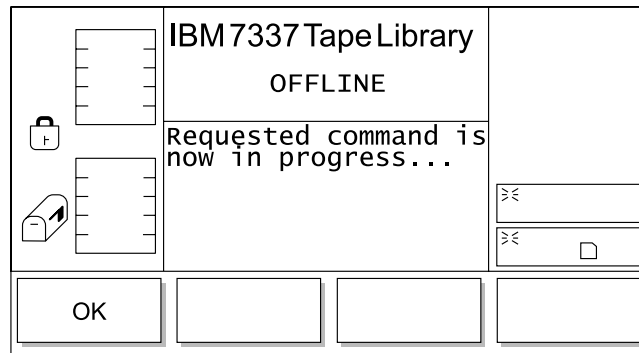
Figure 82. Reset Type Dialog

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the reset operation begins.
- If **Change** is selected, the next field becomes the active field. To start the reset operation select **OK**.
- If **Next** is selected, the value of the current field is toggled.
- If **Cancel** is selected, the "Drives Submenu" on page 70 displays.

Firmware Update Dialog

When **Firmware Update** is selected, the Firmware Update Dialog displays (see Figure 83). This option updates firmware on a selected drive.
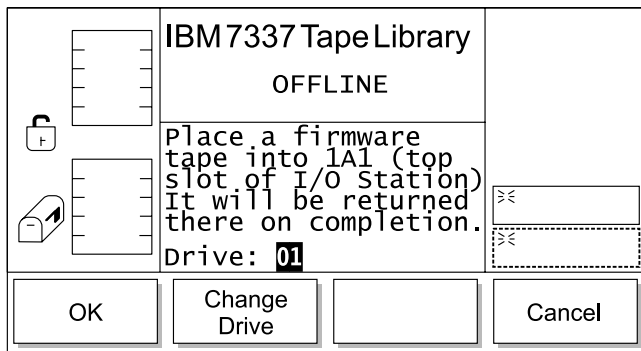
```
┌─────────────────────────────────────────────────┐
│  ┌───┐  IBM 7337 Tape Library                     │
│  │   │           OFFLINE                          │
│  │   │  ┌──────────────────────┐                  │
│ ┌┴┐   │ │Place a firmware      │                  │
│ │F│   │ │tape into 1A1 (top    │                  │
│ └─┘   │ │slot of I/O Station)  │  ┌────────────┐  │
│ ╱▔▏┌──┤ │It will be returned   │  │     ><     │  │
│ ▏ ╱│  │ │there on completion.  │  ├────────────┤  │
│    │  │ │Drive: ▉01▉           │  │     ><     │  │
│    └──┘ └──────────────────────┘  └────────────┘  │
│  ┌─────────┐ ┌─────────┐ ┌────────┐ ┌─────────┐  │
│  │   OK    │ │ Change  │ │        │ │ Cancel  │  │
│  │         │ │ Drive   │ │        │ │         │  │
│  └─────────┘ └─────────┘ └────────┘ └─────────┘  │
└─────────────────────────────────────────────────┘
                                      RBBTM579-0
```

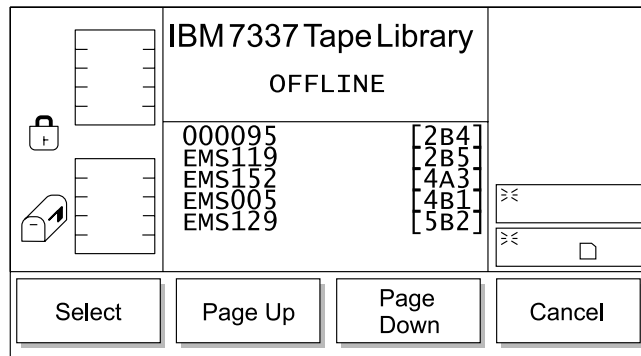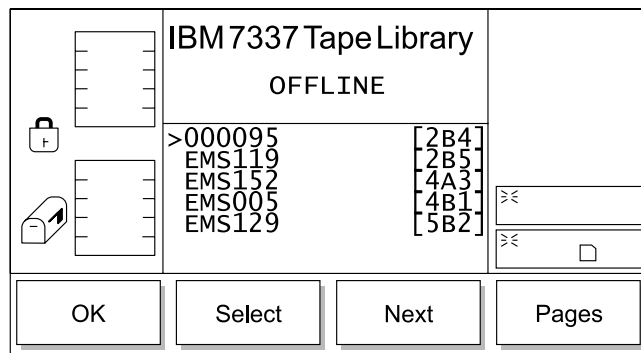*Figure 83. Firmware Update Dialog*

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the library reboots. During the reboot, the library will pause and wait for the host system to download the new firmware using the SCSI bus. If the host system does not download the new firmware within 10 minutes, the library will continue its reboot with the current level of firmware..
- If **Change Drive** is selected, the next drive in the library is chosen. To start the Firmware Update operation select **OK**.
- If **Cancel** is selected, the "Drives Submenu" on page 70 displays.

Setup Menu Selection

The Setup Menu is primarily used to configure the library. To select **Setup** from the Main Menu, press the button below the **Setup** softkey. The Setup Menu displays (see Figure 84).

Figure 84. Setup Menu

To choose one of the selections, press the button below the desired softkey.
- If **Library** is selected, the "Library Submenu" displays.
- If **Drives** is selected, the "Drives Submenu" on page 75 displays.
- If **Utils** is selected, the "Utils Submenu" on page 77 displays.
- If **Back** is selected, the "Main Menu Selection" on page 45 displays.

Library Submenu

When **Library** is selected, the Library Submenu displays (see Figure 85). This submenu contains a collection of routines to set up the library.

Figure 85. Library Submenu

To choose one of the selections, press the button below the desired softkey.
- If **SCSI** is selected, the "SCSI Dialog" displays.
- If **Back** is selected, the "Setup Menu Selection" displays.

SCSI Dialog
When **SCSI** is selected, the SCSI Dialog displays (see Figure 86 on page 74). This option allows setting the SCSI ID.

The 7337 Tape Library consists of up to seven SCSI devices: the library and the drives (1–6). The default settings for the SCSI IDs are 0 for the library and 1–6 for the drives.
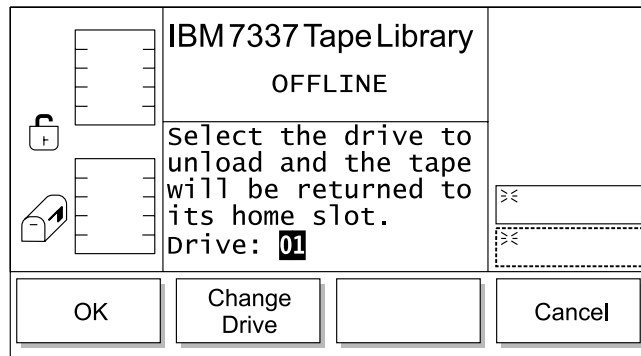
Notes:

1. Do not select an ID that is already in use on the same SCSI bus.
2. Do not select the SCSI ID of the SCSI host adapter card. The SCSI ID range of the host interface board (SCSI) is limited from 0 to 7. Any initiator on the bus communicating with the host interface board (SCSI), such as a host adapter card, must also have its SCSI ID set from 0 to 7. The SCSI ID of the SCSI host adapter card is usually higher than any device on the SCSI bus. Generally, the SCSI ID for the host adapter is 7.
3. The library must be reset in order for SCSI ID changes to take effect.


```
        IBM 7337 Tape Library

              OFFLINE

              CURRENT  NEW
SCSI ID:        6       6
Retries:      001     001
Parity :      Yes     Yes
Library sign-on:
            IBM7337

    Up      Down      Next      Cancel
```

RBBTM582-0

Figure 86. SCSI Dialog

To choose one of the selections, perform the following steps:

1. Press the button below the desired softkey.
   - If **Up** is selected, the value of the current field is increased.
   - If **Down** is selected, the value of the current field is decreased.
   - If **Next** is selected, the next field in the list becomes the active field. If the next field is the Parity field, see Figure 87.
   - If **Cancel** is selected, the "Library Submenu" on page 73 displays.


```
        IBM 7337 Tape Library

              OFFLINE

              CURRENT  NEW
SCSI ID:        6       6
Retries:      001     001
Parity :      Yes     Yes
Library sign-on:
            IBM7337

    OK     Yes/No     Next      Cancel
```

RBBTM583-0

Figure 87. Parity Dialog

2. Press the button below the desired softkey.

- If **OK** is selected, the value of the field is accepted.
- If **Yes/No** is selected, the value of the current field is toggled.
- If **Next** is selected, the next field in the list becomes the active field. If the next field is the Library Sign-on field (see Figure 88).
- If **Cancel** is selected, the "Library Submenu" on page 73 displays.
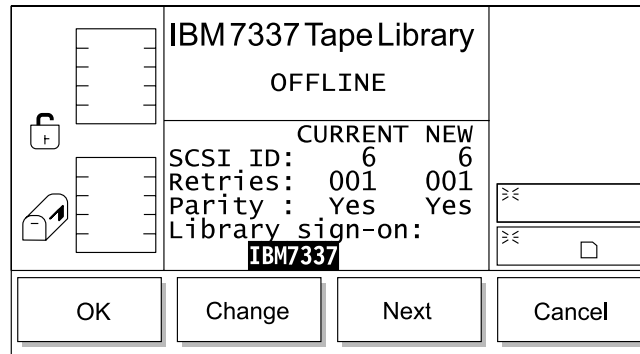
Figure 88. Library Dialog

3. Press the button below the desired softkey.
   - If **OK** is selected, the value of the field is accepted.
   - If **Change** is selected, the value of the current field is toggled.
   - If **Next** is selected, the first field in the list becomes the active field.
   - If **Cancel** is selected, the "Library Submenu" on page 73 displays.

Drives Submenu

When **Drives** is selected, the Drives Submenu displays (see Figure 89). This submenu contains a collection of routines to set up the drives.
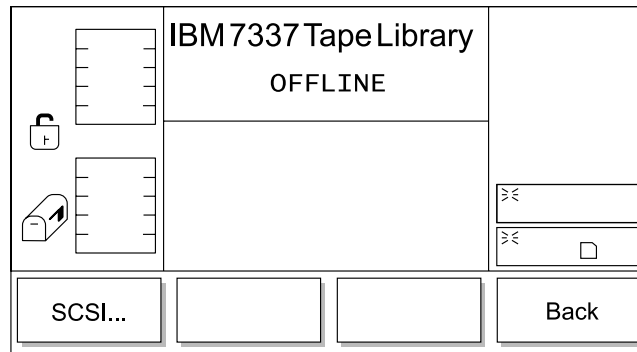
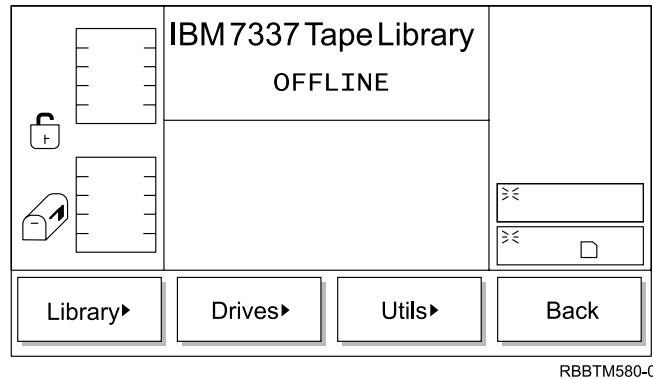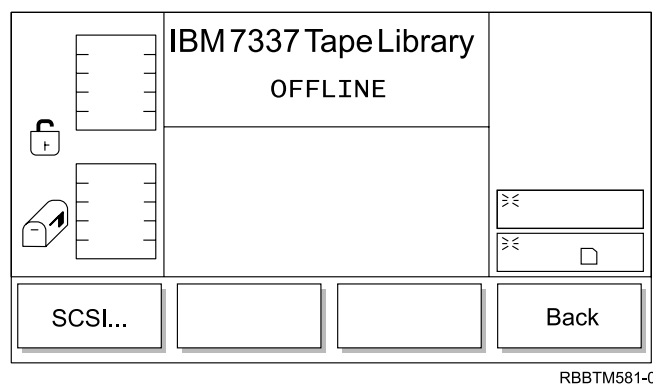Figure 89. Drives Submenu

To choose one of the selections, press the button below the desired softkey.
- If **SCSI** is selected, the "Drive SCSI Dialog" displays.
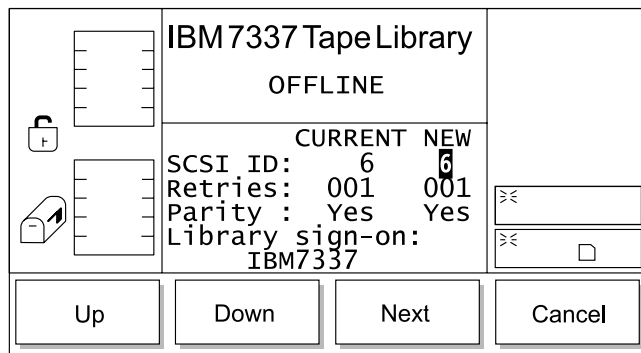- If **Back** is selected, the "Setup Menu Selection" on page 73 displays.

Drive SCSI Dialog

When **SCSI** is selected, the Drive SCSI Dialog displays (see Figure 90 on page 76). This option allows setting the SCSI ID.

The 7337 Tape Library consists of up to seven SCSI devices: the library and the drives (1–6). The default settings for the SCSI IDs are 0 for the library and 1–6 for the drives.

Notes:

1. Do not select an ID that is already in use on the same SCSI bus.

2. Do not select the SCSI ID of the SCSI host adapter card. The SCSI ID range of the host interface board (SCSI) is limited from 0 to 7. Any initiator on the bus communicating with the host interface board (SCSI), such as a host adapter card, must also have its SCSI ID set from 0 to 7. The SCSI ID of the SCSI host adapter card is usually higher than any device on the SCSI bus. Generally, the SCSI ID for the host adapter is 7.

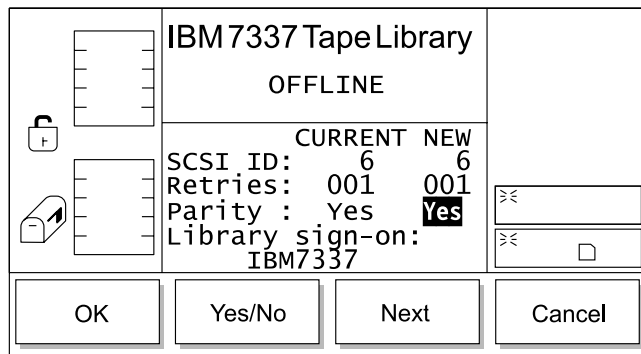3. The drive must be reset in order for SCSI ID changes to take effect.
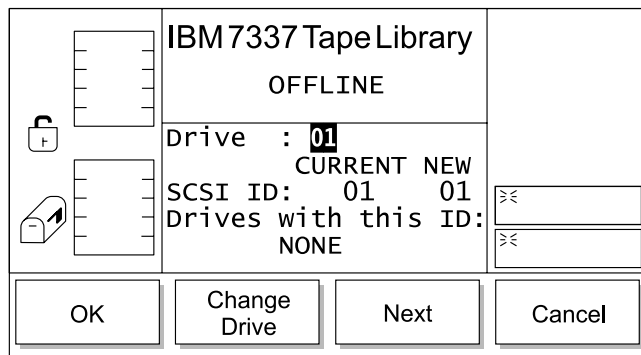
```
┌─────────────────────────────────────────────────┐
│  ┌───────┐  IBM 7337 Tape Library                │
│  │       │                                        │
│  │       │         OFFLINE                        │
│  ┌─┐ ├───────────────────────────────┤           │
│  └─┘     Drive  :  01                             │
│  ┌───────┐        CURRENT NEW                     │
│  ╱│       │ SCSI ID:   01      01  │✂│            │
│ ╱ │       │ Drives with this ID:   │✂│            │
│   └───────┘        NONE                           │
│  ┌────────┬────────┬────────┬────────┐           │
│  │        │ Change │        │        │           │
│  │   OK   │ Drive  │  Next  │ Cancel │           │
│  └────────┴────────┴────────┴────────┘           │
└─────────────────────────────────────────────────┘
                                    RBBTM586-0
```

Figure 90. Drive SCSI Dialog

To choose one of the selections, perform the following steps:

1. Press the button below the desired softkey.
   - If **OK** is selected, the value of the current field is accepted.
   - If **Change Drive** is selected, the next drive in the library is chosen.
   - If **Next** is selected, the Drive SCSI ID Dialog displays (see Figure 91).
   - If **Cancel** is selected, the "Drives Submenu" on page 75 displays.
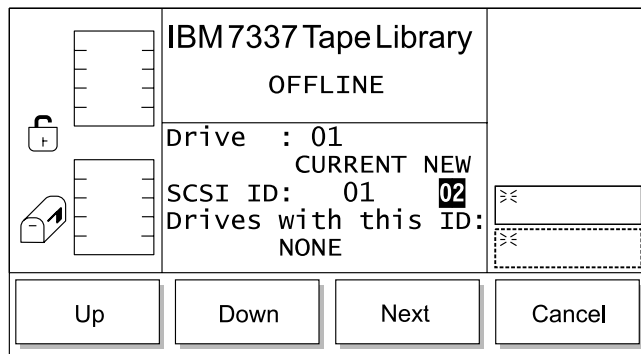
```
┌─────────────────────────────────────────────────┐
│  ┌───────┐  IBM 7337 Tape Library                │
│  │       │                                        │
│  │       │         OFFLINE                        │
│  ┌─┐ ├───────────────────────────────┤           │
│  └─┘     Drive  :  01                             │
│  ┌───────┐        CURRENT NEW                     │
│  ╱│       │ SCSI ID:   01      02  │✂│            │
│ ╱ │       │ Drives with this ID:   │✂│            │
│   └───────┘        NONE                           │
│  ┌────────┬────────┬────────┬────────┐           │
│  │        │        │        │        │           │
│  │   Up   │  Down  │  Next  │ Cancel │           │
│  └────────┴────────┴────────┴────────┘           │
└─────────────────────────────────────────────────┘
                                    RBBTM587-0
```

Figure 91. Drive SCSI ID Dialog

2. Press the button below the desired softkey.
   - If **Up** is selected, the value of the current field is increased.

- If **Down** is selected, the value of the current field is decreased.
- If **Next** is selected, the display reverts back to the Drive SCSI ID Dialog (see Figure 90 on page 76).
- If **Cancel** is selected, the "Drives Submenu" on page 75 displays.

Utils Submenu

When **Utils** is selected, the Utils Submenu displays (see Figure 92). This submenu contains a collection of utility routines.

Figure 92. Utils Submenu

To choose one of the selections, press the button below the desired softkey.
- If **Date/Time** is selected, the "Date/Time Dialog" displays.
- If **Config** is selected, the "Config Dialog" on page 78 displays.
- If **Secure** is selected, the "Secure Dialog" on page 78 displays.
- If **Back** is selected, the "Setup Menu Selection" on page 73 displays.

Date/Time Dialog
When **Date/Time** is selected, the Date/Time Dialog displays (see Figure 93). This option sets the library date and time.
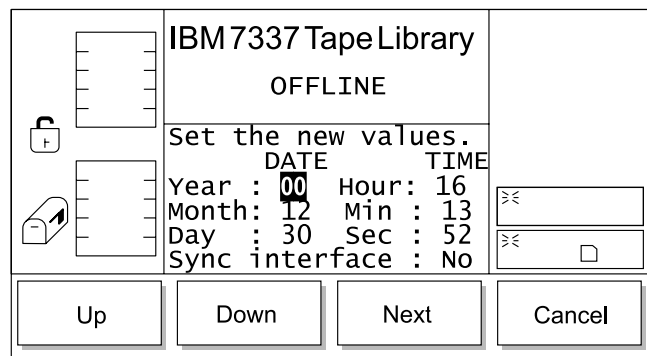
Figure 93. Date/Time Dialog

To choose one of the selections, press the button below the desired softkey.
- If **Up** is selected, the value of the current field is increased.
- If **Down** is selected, the value of the current field is decreased.
- If **Next** is selected, the next field in the list becomes the active field. If the next field is the last field, the Sync Dialog displays (see Figure 94 on page 78).

• If **Cancel** is selected, the "Utils Submenu" on page 77 displays.

```
┌──────────────────────────────────────────────┐
│  ┌────┐   IBM 7337 Tape Library               │
│  │    │                                        │
│  │    │        OFFLINE                         │
│  ┌─┐  │   ┌──────────────────────┐            │
│  │⊢│  │   Set the new values.     ┌──────┐    │
│  └─┘  │        DATE        TIME   │  ✂   │    │
│  ┌────│   Year : 00   Hour: 16    └──────┘    │
│  │╱   │   Month: 10   Min : 13    ┌──────┐    │
│  │    │   Day  : 20   Sec : 52    │✂   □ │    │
│  └────┘   Sync interface : ▇No    └──────┘    │
│  ┌────────┐ ┌────────┐ ┌────────┐ ┌────────┐  │
│  │  OK    │ │ Yes/No │ │  Next  │ │ Cancel │  │
│  └────────┘ └────────┘ └────────┘ └────────┘  │
└──────────────────────────────────────────────┘
                                      RBBTM590-0
```

Figure 94. Sync Dialog

To choose one of the selections, press the button below the desired softkey.
• If **OK** is selected, the value of the current field is accepted.
• If **Yes/No** is selected, the value of the current field is toggled.
• If **Next** is selected, the active field reverts to the first field in the list.
• If **Cancel** is selected, the "Utils Submenu" on page 77 displays.

Config Dialog

When **Config** is selected, the Config Dialog displays (see Figure 95). This option allows you to change the configuration of the library, including configuring the I/O Station as either Import/Export or Storage.

```
┌──────────────────────────────────────────────┐
│  ┌────┐   IBM 7337 Tape Library               │
│  │    │                                        │
│  │    │        OFFLINE                         │
│  ┌─┐  │                                        │
│  │⊢│  │   Backlight on :    Yes                │
│  └─┘  │   Audio on      :   Yes                │
│  ┌────│   Scan on Init :    Yes  ┌──────┐     │
│  │╱   │   Touch on Init:    No   │  ✂   │     │
│  │    │   I/O Station:Ipt/Ext    ┌──────┐     │
│  └────┘                          │  ✂   │     │
│  ┌────────┐ ┌────────┐ ┌────────┐ ┌────────┐  │
│  │  OK    │ │ Yes/No │ │  Next  │ │ Cancel │  │
│  └────────┘ └────────┘ └────────┘ └────────┘  │
└──────────────────────────────────────────────┘
                                      RBBTM591-0
```

Figure 95. Config Dialog

To choose one of the selections, press the button below the desired softkey.
• If **OK** is selected, the value of the current field is applied, and the operation completes.
• If **Yes/No** is selected, the value of the current field is toggled.
• If **Next** is selected, next field in the list becomes the active field.
• If **Cancel** is selected, the "Utils Submenu" on page 77 displays.
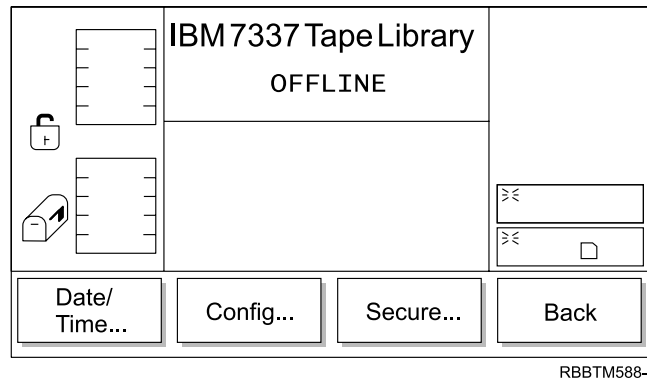
Secure Dialog

When **Secure** is selected, the Secure Dialog displays (see Figure 96 on page 79). This option allows you to set the security features of the library.

```
              IBM 7337 Tape Library
                     OFFLINE

              Security Enabled: N<
              Change Password : Y

                       Accept: N

      Up          Down         Next         Cancel
```

RBBTM592-0
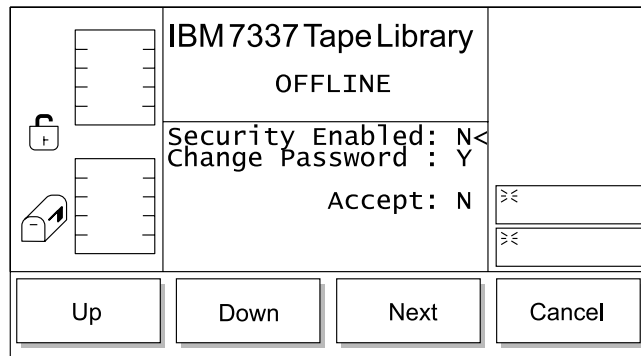
Figure 96. Secure Dialog

To choose one of the selections, press the button below the desired softkey.
- If **Up** is selected, the value of the current field is toggled.
- If **Down** is selected, the value of the current field is toggled.
- If **Next** is selected, the next field in the list becomes the active field.
- If **Cancel** is selected, the "Utils Submenu" on page 77 displays.

Service Menu Selection

The Service Menu is primarily used to provide various routines that are associated with maintaining the system. To select **Service** from the Main Menu, press the button below the **Service** softkey. The Service Menu displays (see Figure 97).

```
┌─────────────────────────────────────────────────┐
│ ┌──────┐  IBM 7337 Tape Library  ┌──────────────┐│
│ │      │         ONLINE          │              ││
│ │      │                         │              ││
│ ┌─┐    │                         │              ││
│ │├│    ├─────────────────────────┤              ││
│ └─┘    │                         ├──────────────┤│
│ ┌──────┤                         │  ><          ││
│ │      │                         ├──────────────┤│
│ │/▲    │                         │  ><      ▢   ││
│ └──────┴─────────────────────────┴──────────────┘│
│ ┌────────┐ ┌────────┐ ┌────────┐ ┌────────┐     │
│ │ Start..│ │Library▶│ │Drives..│ │ Back   │     │
│ └────────┘ └────────┘ └────────┘ └────────┘     │
└─────────────────────────────────────────────────┘
                                        RBBTM593-0
```
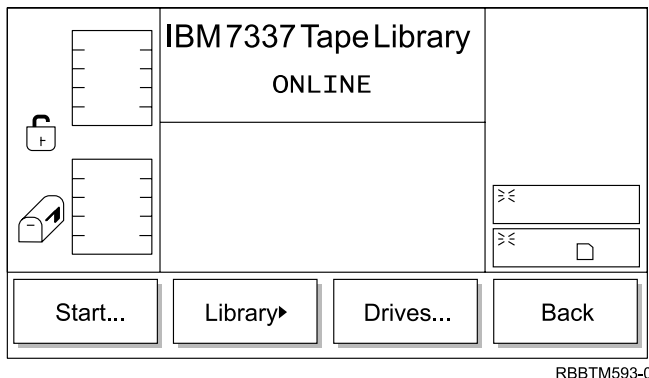
Figure 97. Service Menu

To choose one of the selections, press the button below the desired softkey.
- If **Start** is selected, the "Start Dialog" displays.
- If **Library** is selected, the "Library Submenu" on page 81 displays.
- If **Drives** is selected, the "Drives Dialog" on page 93 displays.
- If **Back** is selected, the "Main Menu Selection" on page 45 (alternate screen) displays.

Start Dialog

When **Start** is selected, the Start Dialog displays (see Figure 98). This dialog displays Service Action Code (SAC) information.

```
┌─────────────────────────────────────────────────┐
│ ┌──────┐  IBM 7337 Tape Library  ┌──────────────┐│
│ │      │         OFFLINE         │              ││
│ │      │                         │              ││
│ ┌─┐    ├─────────────────────────┤              ││
│ │├│    │Found SAC at:            │              ││
│ └─┘    │00/00/00  03:00:00       ├──────────────┤│
│ ┌──────┤SAC   : XXXX             │  ><          ││
│ │      │Error: 0x0000            ├──────────────┤│
│ │/▲    │                         │  ><          ││
│ └──────┴─────────────────────────┴──────────────┘│
│ ┌────────┐ ┌────────┐ ┌────────┐ ┌────────┐     │
│ │ Next   │ │Previous│ │        │ │ Cancel │     │
│ └────────┘ └────────┘ └────────┘ └────────┘     │
└─────────────────────────────────────────────────┘
                                        RBBTM594-0
```
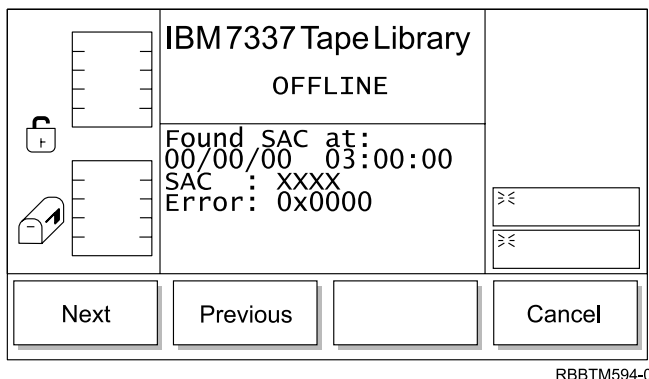
Figure 98. Start Dialog

To choose one of the selections, press the button below the desired softkey.
- If **Next** is selected, the next SAC displays. If this is the last SAC, the follow on dialog displays (see Figure 99 on page 81).
- If **Previous** is selected, the Previous SAC displays. If this is the last SAC, the follow on dialog displays (see Figure 99 on page 81).
- If **Cancel** is selected, the "Service Menu Selection" displays.

IBM 7337 Tape Library

ONLINE

There are no more
SACs to report.

OK
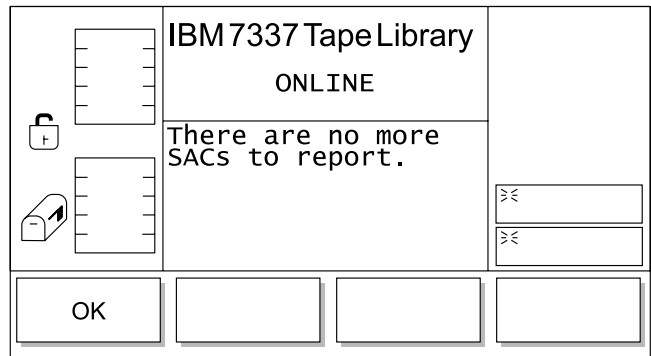
RBBTM595-0

Figure 99. SAC Dialog

If **OK** is selected, the Figure 97 on page 80 displays.

Library Submenu

When **Library** is selected, the Library Submenu displays (see Figure 100). This dialog displays a collection of routines specific to servicing the library.

IBM 7337 Tape Library

OFFLINE

Firmware
Update...   Diags▸   Exer-
cise▸   Back
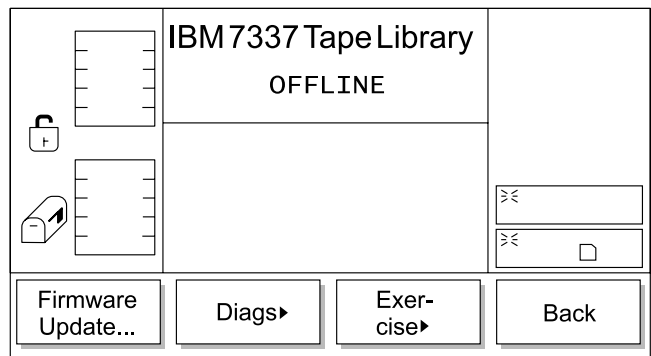
RBBTM596-0

Figure 100. Library Submenu

To choose one of the selections, press the button below the desired softkey.

• If **Firmware Update** is selected, the "Firmware Update Dialog" displays.

• If **Diags** is selected, the "Diags Submenu" on page 82 displays.

• If **Exercise** is selected, the "Exercise Submenu" on page 89 displays.

• If **Back** is selected, the "Service Menu Selection" on page 80 displays.

Firmware Update Dialog

When **Firmware Update** is selected, the Firmware Update Dialog displays (see Figure 101 on page 82). This option allows you to update the firmware of the library.

IBM 7337 Tape Library

OFFLINE

Updating firmware on
the library requires
a reboot. Press OK
to proceed.

OK   Cancel

RBBTM597-0

Figure 101. Firmware Update Dialog

To choose one of the selections, press the button below the desired softkey.
* If **OK** is selected, the library reboots.
* If **Cancel** is selected, the "Library Submenu" on page 81 displays.

Diags Submenu
When **Diags** is selected, the Diags Submenu displays (see Figure 102). This option
is a collection of library diagnostics.

IBM 7337 Tape Library

OFFLINE

Sensors...   Fingers▶   Picker▶   Back
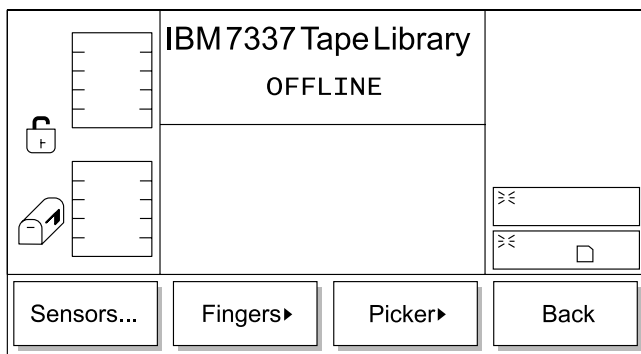
RBBTM598-0

Figure 102. Diags Submenu

To choose one of the selections, press the button below the desired softkey.
* If **Sensors** is selected, the "Sensor Dialog" displays.
* If **Fingers** is selected, the "Fingers Submenu" on page 83 displays.
* If **Picker** is selected, the "Picker Submenu" on page 86 displays.
* If **Back** is selected, the "Library Submenu" on page 81 displays.

Sensor Dialog: When **Sensors** is selected, the Sensor Dialog displays (see
Figure 103 on page 83). This option displays the real time state of the sensors and
provides a means to lock or unlock the I/O station.

```
          IBM 7337 Tape Library
                OFFLINE

          PwrFan =0  IE Lock=0
          PwrSply=0  IE Open=0
          DrvRmvd=0  IE Clsd=1
          GrpThrm=0  DoorOpn=0
          GrpClsd=0
```

Lock/Unlock   Cancel

RBBTM599-0

Figure 103. Sensor Dialog

To choose one of the selections, press the button below the desired softkey.
* If **Lock/Unlock** is selected, the I/O station is toggled between locked and unlocked.
* If **Cancel** is selected, the "Diags Submenu" on page 82 displays.

Fingers Submenu: When **Fingers** is selected, the Fingers Submenu displays (see Figure 104). This option is a collection of routines to manipulate the open/close and reach/retract operations.


```
          IBM 7337 Tape Library
                OFFLINE
```
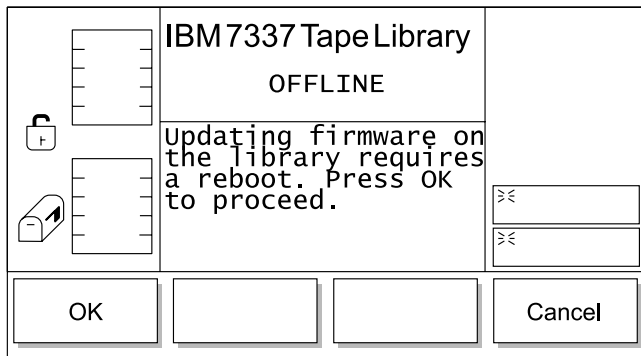
Get/Put...   Step...   Scanner...   Back

RBBTM600-0

Figure 104. Fingers Submenu

To choose one of the selections, press the button below the desired softkey.
* If **Get/Put** is selected, the "Get/Put Dialog" displays.
* If **Step** is selected, the "Step Dialog" on page 84 displays.
* If **Scanner** is selected, the "Scanner Dialog" on page 85 displays.
* If **Back** is selected, the "Diags Submenu" on page 82 displays.

Get/Put Dialog: When **Get/Put** is selected, the Get/Put Dialog displays (see Figure 105 on page 84). This option initiates gets and puts of cartridges to either storage slots or drives.

Note: This operation will place the cartridges in a different order within the library.
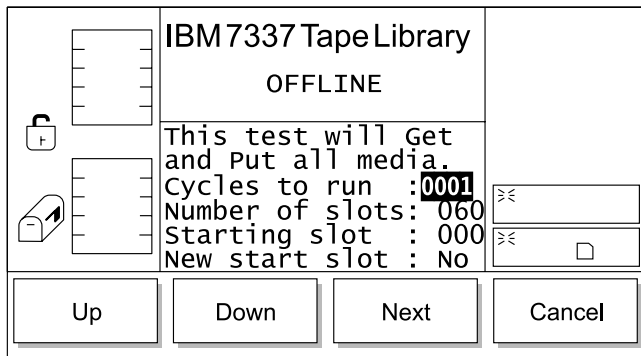
```
┌─────────────────────────────────────────────┐
│  ┌─────┐  IBM 7337 Tape Library              │
│  │     │                                     │
│  │     │        OFFLINE                      │
│  │     │                                     │
│  ┌─┐    ┌──────────────────────┐             │
│  │F│    │This test will Get     │            │
│  └─┘    │and Put all media.     │ ┌────┐     │
│  ┌─────┐│Cycles to run  :0001   │ │ ⋈  │     │
│  │  ◢  ││Number of slots: 060   │ └────┘     │
│  │     ││Starting slot  : 000   │ ┌────┐     │
│  └─────┘│New start slot : No    │ │ ⋈ □│     │
│         └──────────────────────┘ └────┘     │
│  ┌────────┐┌────────┐┌────────┐┌────────┐   │
│  │  Up    ││ Down   ││ Next   ││ Cancel │   │
│  └────────┘└────────┘└────────┘└────────┘   │
└─────────────────────────────────────────────┘
                                    RBBTM601-0
```

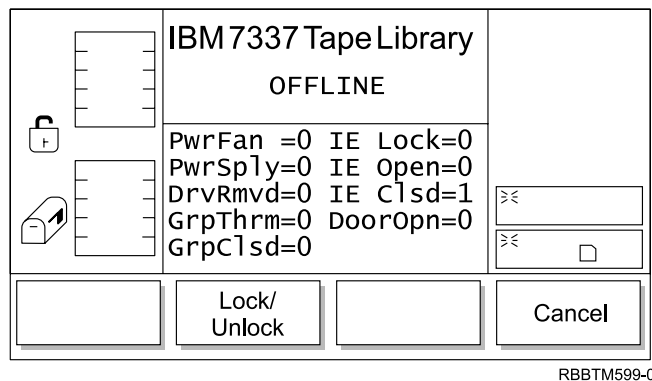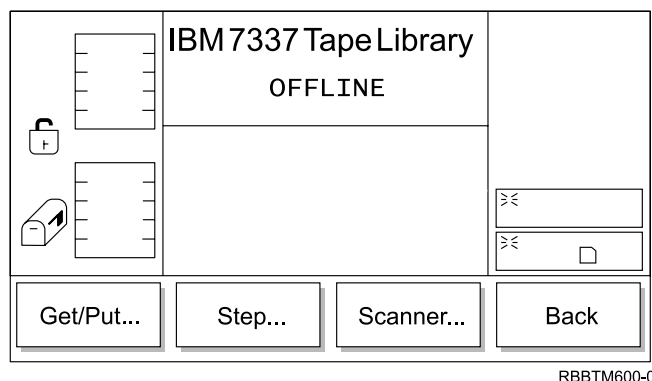*Figure 105. Get/Put Dialog*

To choose one of the selections, press the button below the desired softkey.

- If **Up** is selected, the value of the current field is increased.
- If **Down** is selected, the value of the current field is decreased.
- If **Next** is selected, the next field in the list becomes the active field. When the **Next** push-button moves the field to New start slot, the follow on dialog appears (see Figure 106). After reaching the end of the field list, the active field reverts to the first field in the list.
- If **Cancel** is selected, the "Fingers Submenu" on page 83 displays.

```
┌─────────────────────────────────────────────┐
│  ┌─────┐  IBM 7337 Tape Library              │
│  │     │                                     │
│  │     │        OFFLINE                      │
│  │     │                                     │
│  ┌─┐    ┌──────────────────────┐             │
│  │F│    │This test will Get     │            │
│  └─┘    │and Put all media.     │ ┌────┐     │
│  ┌─────┐│Cycles to run  :0001   │ │ ⋈  │     │
│  │  ◢  ││Number of slots: 060   │ └────┘     │
│  │     ││Starting slot  : 000   │ ┌────┐     │
│  └─────┘│New start slot : No    │ │ ⋈ □│     │
│         └──────────────────────┘ └────┘     │
│  ┌────────┐┌────────┐┌────────┐┌────────┐   │
│  │  OK    ││ Yes/No ││ Next   ││ Cancel │   │
│  └────────┘└────────┘└────────┘└────────┘   │
└─────────────────────────────────────────────┘
                                    RBBTM602-0
```

Figure 106. Start New Slot Dialog

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the values of the fields are accepted.
- If **Yes/No** is selected, the value of the current field is toggled.
- If **Next** is selected, the first field in the list becomes the active field.
- If **Cancel** is selected, the "Fingers Submenu" on page 83 displays.

Step Dialog: When **Step** is selected, the Step Dialog displays (see Figure 107 on page 85). This option is a collection of routines to manipulate the open/close and reach/retract in incremental steps.

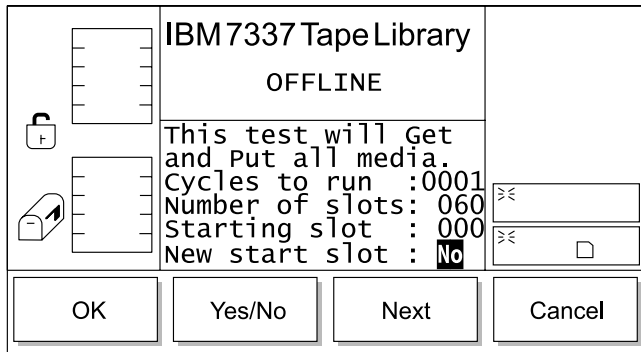**Note:** This is an advanced diagnostic tool that is not intended for use during normal operation.

```
          IBM 7337 Tape Library

                 OFFLINE

          This test should be
          used by trained
          personnel ONLY!




   OK                                    Cancel
```
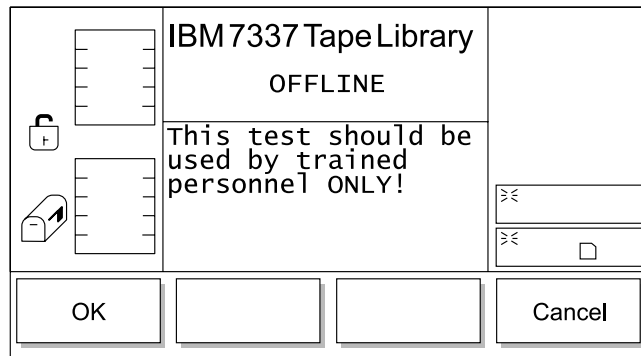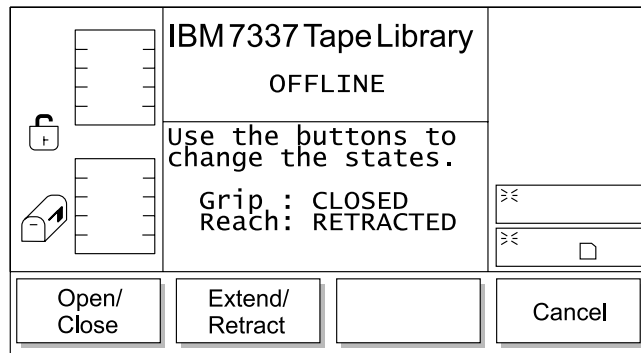
RBBTM603-0

Figure 107. Step Dialog

To choose one of the selections, press the button below the desired softkey.
- If **OK** is selected, the follow on dialog displays (see Figure 108).
- If **Cancel** is selected, the "Fingers Submenu" on page 83 displays.


```
          IBM 7337 Tape Library

                 OFFLINE

          Use the buttons to
          change the states.

            Grip : CLOSED
            Reach: RETRACTED

  Open/       Extend/                    Cancel
  Close       Retract
```

RBBTM604-0

Figure 108. Picker Finger Dialog

To choose one of the selections, press the button below the desired softkey.
- If **Open/Close** is selected, the picker fingers toggle between open and close. The screen updates to reflect the state.
- If **Extend/Retract** is selected, the picker fingers toggle between extended and retracted. The screen updates to reflect the state.
- If **Cancel** is selected, the "Fingers Submenu" on page 83 displays.

Scanner Dialog: When **Scanner** is selected, the Scanner Dialog displays (see Figure 109 on page 86). This option triggers the bar code scanner and reads the label information.

```
        ┌─────┐  IBM 7337 Tape Library
        │     │
        │     │        OFFLINE
   ┌─┐  │     │
   │ ┤  ├─────┤  Pressing Scan will
   └─┘  │     │  trigger scanner to
  ┌──┐  ├─────┤  read the barcode in
  │ ╱│  │     │  front of it.        ⋈
  └──┘  │     │                      ⋈    ▢
        └─────┘        <none>
  ┌──────────┬──────────┬──────────┬──────────┐
  │   Scan   │          │          │  Cancel  │
  └──────────┴──────────┴──────────┴──────────┘
```
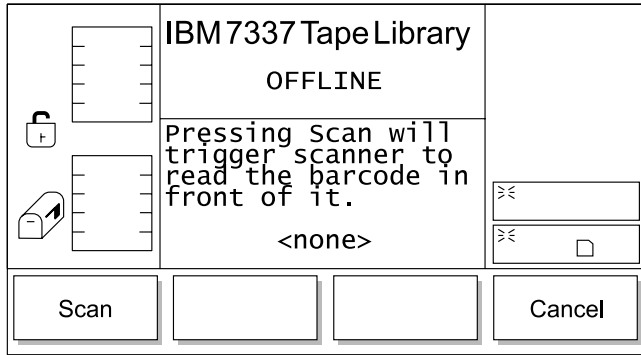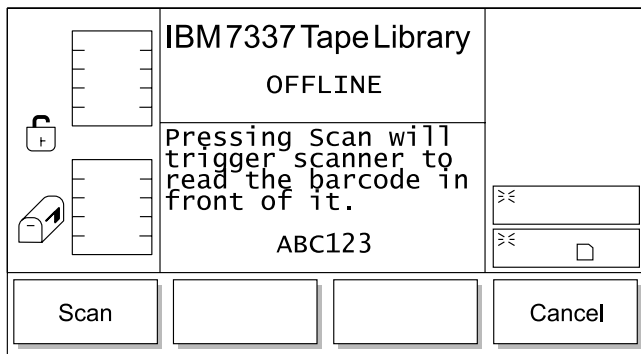
RBBTM605-0

Figure 109. Scanner Dialog

To choose one of the selections, press the button below the desired softkey.
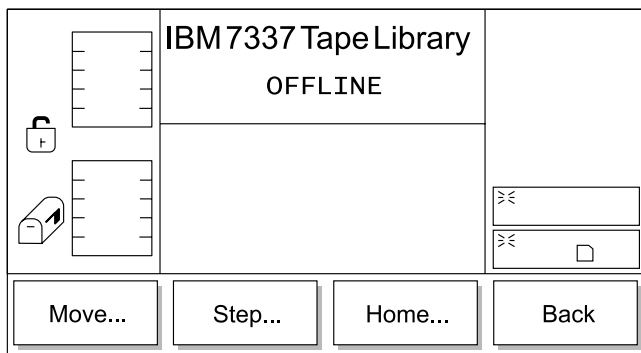
- If **Scan** is selected, the bar code label immediately in front of the scanner is read (see Figure 110).
- If **Cancel** is selected, the "Fingers Submenu" on page 83 displays.


```
        ┌─────┐  IBM 7337 Tape Library
        │     │
        │     │        OFFLINE
   ┌─┐  │     │
   │ ┤  ├─────┤  Pressing Scan will
   └─┘  │     │  trigger scanner to
  ┌──┐  ├─────┤  read the barcode in
  │ ╱│  │     │  front of it.        ⋈
  └──┘  │     │                      ⋈    ▢
        └─────┘        ABC123
  ┌──────────┬──────────┬──────────┬──────────┐
  │   Scan   │          │          │  Cancel  │
  └──────────┴──────────┴──────────┴──────────┘
```

RBBTM606-0

Figure 110. Bar Code Label Dialog

Picker Submenu: When **Picker** is selected, the Picker Submenu displays (see Figure 111). This is a collection of routines to manipulate the vertical and rotary axes.
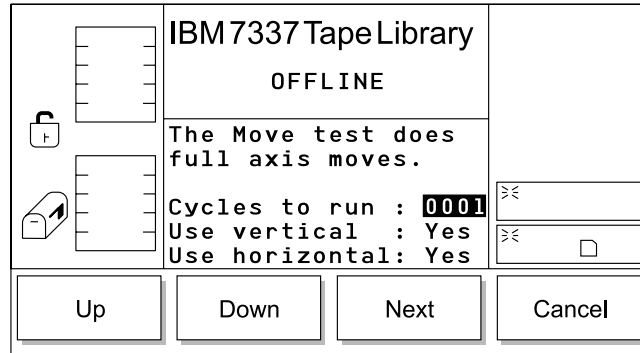


```
        ┌─────┐  IBM 7337 Tape Library
        │     │
        │     │        OFFLINE
   ┌─┐  │     │
   │ ┤  ├─────┤
   └─┘  │     │
  ┌──┐  ├─────┤
  │ ╱│  │     │                      ⋈
  └──┘  │     │                      ⋈    ▢
        └─────┘
  ┌──────────┬──────────┬──────────┬──────────┐
  │ Move...  │ Step...  │ Home...  │   Back   │
  └──────────┴──────────┴──────────┴──────────┘
```

RBBTM607-0

Figure 111. Picker Submenu

To choose one of the selections, press the button below the desired softkey.

* If **Move** is selected, the "**Move Dialog**" displays.
* If **Step** is selected, the "Step Dialog" on page 88 displays.
* If **Home** is selected, the "**Home Dialog**" on page 88 displays.
* If **Back** is selected, the "Diags Submenu" on page 82 displays.

Move Dialog: When **Move** is selected, the Move Dialog displays (see Figure 112). This option cycles the vertical and rotary axes in a motion pattern.
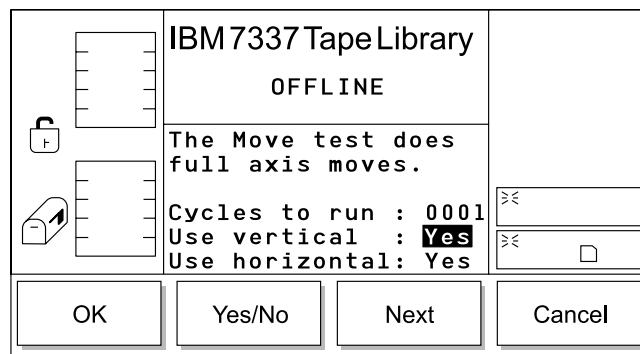


```
          IBM 7337 Tape Library

                   OFFLINE

          The Move test does
          full axis moves.

          Cycles to run : 0001
          Use vertical  : Yes
          Use horizontal: Yes

      Up        Down        Next        Cancel
```

RBBTM608-0

Figure 112. Move Dialog

To choose one of the selections, press the button below the desired softkey.
* If **Up** is selected, the value of the current field is increased.
* If **Down** is selected, the value of the current field is decreased.
* If **Next** is selected, the next field in the list becomes the active field (see Figure 113).
* If **Cancel** is selected, the "Picker Submenu" on page 86 displays.


```
          IBM 7337 Tape Library

                   OFFLINE

          The Move test does
          full axis moves.

          Cycles to run : 0001
          Use vertical  : Yes
          Use horizontal: Yes

      OK       Yes/No      Next        Cancel
```
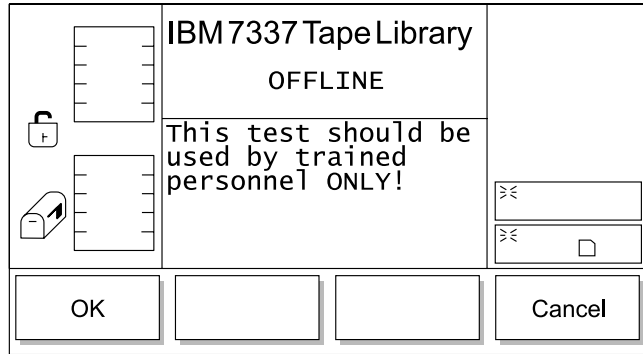
RBBTM609-0

Figure 113. Use Axes Dialog

To choose one of the selections, press the button below the desired softkey.
* If **OK** is selected, the values of the fields are accepted.
* If **Yes/No** is selected, the value of the current field is toggled.
* If **Next** is selected, the next field in the list becomes the active field. After reaching the end of the field list, the active field reverts to the first field in the list.
* If **Cancel** is selected, the "Picker Submenu" on page 86 displays.

Step Dialog: When **Step** is selected, the Step Dialog displays (see Figure 114). This option is a collection of routines to manipulate the vertical and rotary axes in incremental steps.

Note: This is an advanced diagnostic tool that is not intended for use during normal operation.
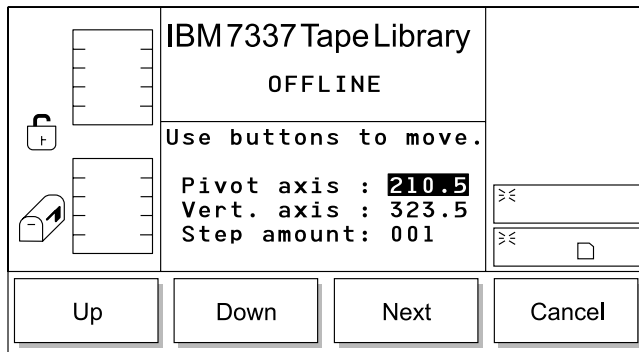

RBBTM603-0

Figure 114. Step Dialog

To choose one of the selections, press the button below the desired softkey.
* If **OK** is selected, Figure 115 displays.
* If **Cancel** is selected, the "Picker Submenu" on page 86 displays.

RBBTM610-0

Figure 115. Axes Dialog

To choose one of the selections, press the button below the desired softkey.
* If **Up** is selected, the value of the field is increased.
* If **Down** is selected, the value of the field is decreased.
* If **Next** is selected, the next field in the list becomes the active field. After the reaching the end of the field list, the active field reverts to the first field in the list.
* If **Cancel** is selected, the "Picker Submenu" on page 86 displays.

Home Dialog*:* When **Home** is selected, the Home Dialog displays (see Figure 116 on page 89). This option locates the vertical and rotary axes to the home positions.
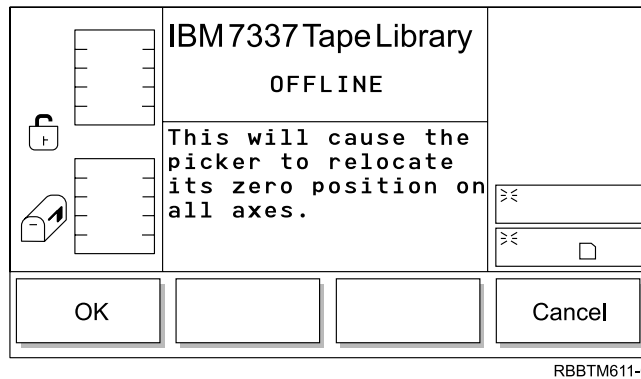
```
            ┌─────────────────────────────────┐
            │  ┌────┐  IBM 7337 Tape Library    │
            │  │    │        OFFLINE            │
            │  │    │  ┌──────────────────┐     │
            │ 🔓    │  This will cause the│     │
            │  ├────┤  picker to relocate │     │
            │ ┌────┐  its zero position on│ ✂  │
            │ │    │  all axes.          │ ✂   │
            │ │    │                     │  ▢  │
            │  ┌──────┐ ┌──────┐ ┌──────┐ ┌──────┐
            │  │ OK   │ │      │ │      │ │Cancel│
            │  └──────┘ └──────┘ └──────┘ └──────┘
            └─────────────────────────────────┘
                                    RBBTM611-0
```

Figure 116. Home Dialog

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the picker returns to the home position, and the operation completes.
- If **Cancel** is selected, the "Picker Submenu" on page 86 displays.

Exercise Submenu

When **Exercise** is selected, the Exercise Submenu displays (see Figure 117). This submenu is a collection of library exercises.
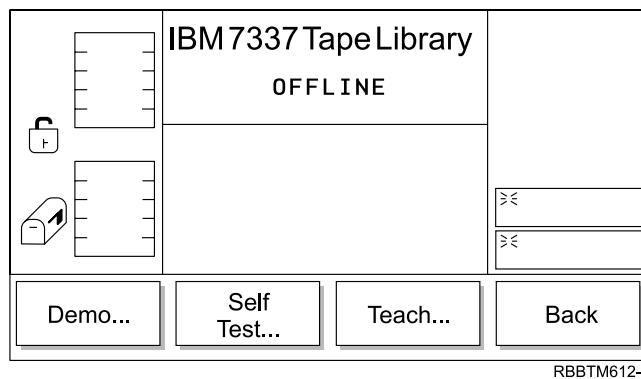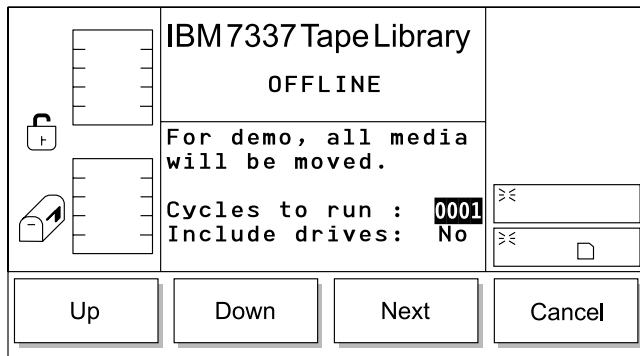
```
            ┌─────────────────────────────────┐
            │  ┌────┐  IBM 7337 Tape Library    │
            │  │    │        OFFLINE            │
            │  │    │                           │
            │ 🔓    │                           │
            │  ├────┤                           │
            │ ┌────┐                    ┌──────┐│
            │ │    │                    │ ✂    ││
            │ │    │                    │ ✂    ││
            │  ┌──────┐ ┌──────┐ ┌──────┐ ┌──────┐
            │  │Demo..│ │ Self │ │Teach.│ │ Back │
            │  │      │ │Test..│ │      │ │      │
            │  └──────┘ └──────┘ └──────┘ └──────┘
            └─────────────────────────────────┘
                                    RBBTM612-0
```

Figure 117. Exercise Submenu

To choose one of the selections, press the button below the desired softkey.

- If **Demo** is selected, the "Demo Dialog" displays.
- If **Self Test** is selected, the "Self Test Dialog" on page 91 displays.
- If **Teach** is selected, the "Teach Dialog" on page 92 displays.
- If **Back** is selected, the "Library Submenu" on page 81 displays.

Demo Dialog: When **Demo** is selected, the Demo Dialog displays (see Figure 118 on page 90). This option executes random cartridge movement within the library. The minimum number of cartridges recommended for this routine is two cartridges for each drive, plus one additional cartridge.

Note: This operation will place the cartridges in a different order within the library.
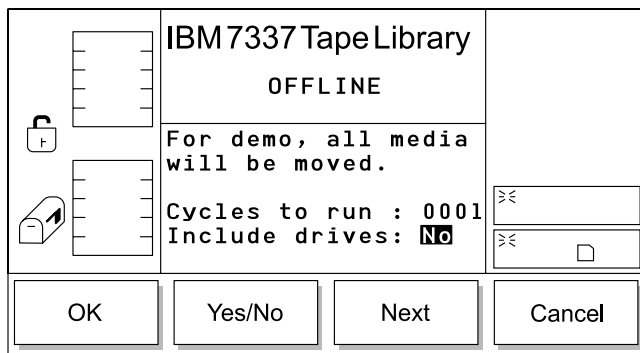
```
        ┌──────────────────────────────────┐
        │  ┌──┐   IBM 7337 Tape Library     │
        │  │  │                             │
        │  │  │        OFFLINE              │
        │  │  │                             │
        │  🔒  ├─────────────────────┬──────┤
        │  ⌐┐ │For demo, all media  │      │
        │  │  │will be moved.       ├──────┤
        │ ◁│  │                     │   ▯  │
        │  │  │Cycles to run : 0001 │      │
        │  └──┤Include drives:  No  │      │
        ├──────┬───────┬───────┬───────────┤
        │  Up  │ Down  │ Next  │  Cancel   │
        └──────┴───────┴───────┴───────────┘
                                    RBBTM613-0
```

Figure 118. Demo Dialog

To choose one of the selections, press the button below the desired softkey.

- If **Up** is selected, the currently selected field is increased.
- If **Down** is selected, the currently selected field is decreased.
- If **Next** is selected, the next field in the list becomes the active field (see Figure 119).
- If **Cancel** is selected, the "Exercise Submenu" on page 89 displays.


```
        ┌──────────────────────────────────┐
        │  ┌──┐   IBM 7337 Tape Library     │
        │  │  │                             │
        │  │  │        OFFLINE              │
        │  │  │                             │
        │  🔒  ├─────────────────────┬──────┤
        │  ⌐┐ │For demo, all media  │      │
        │  │  │will be moved.       ├──────┤
        │ ◁│  │                     │   ▯  │
        │  │  │Cycles to run : 0001 │      │
        │  └──┤Include drives: No   │      │
        ├──────┬───────┬───────┬───────────┤
        │  OK  │ Yes/No│ Next  │  Cancel   │
        └──────┴───────┴───────┴───────────┘
                                    RBBTM614-0
```

Figure 119. Include Drives Dialog

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the field values are applied, and the Demo operation starts (see Figure 120 on page 91).
- If **Yes/No** is selected, the drives are included or not included accordingly.
- If **Next** is selected, the next field in the list becomes the active field. After reaching the end of the field list, the active field reverts to the first field in the list (see Figure 118).
- If **Cancel** is selected, the "Move Submenu" on page 58 displays.
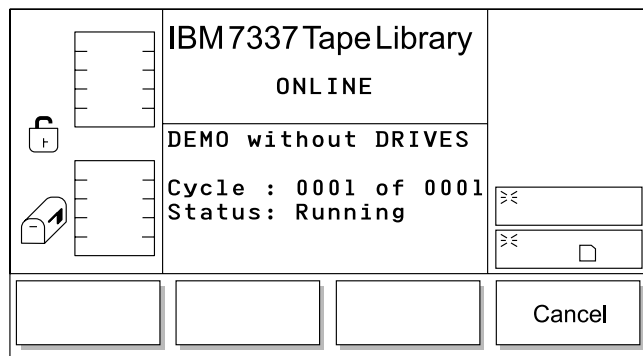
Figure 120. Demo Execution Screen

Self Test Dialog: When **Self Test** is selected, the Self Test Dialog displays (see Figure 121). Self Test runs a series of diagnostics (sensor test, lock/unlock, moving all motors, and when including drives, it will send communication messages to drive sleds). No cartridges are moved during Self Test.
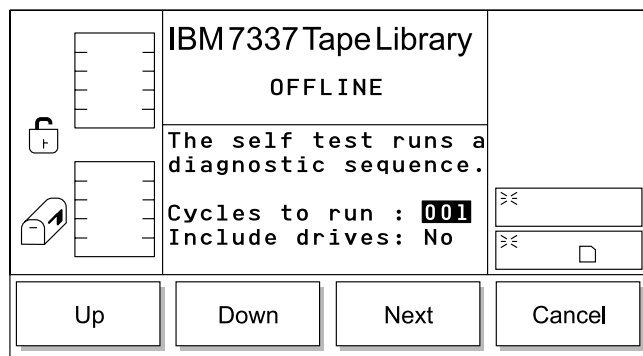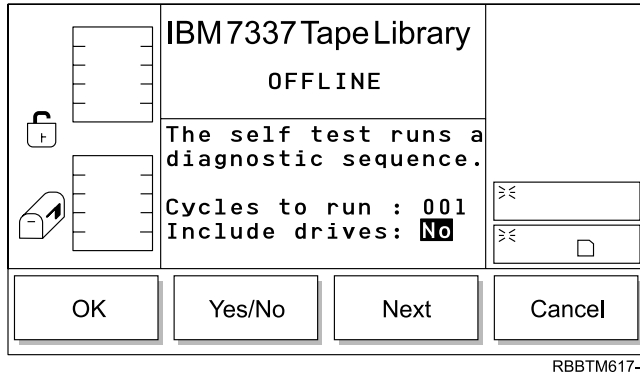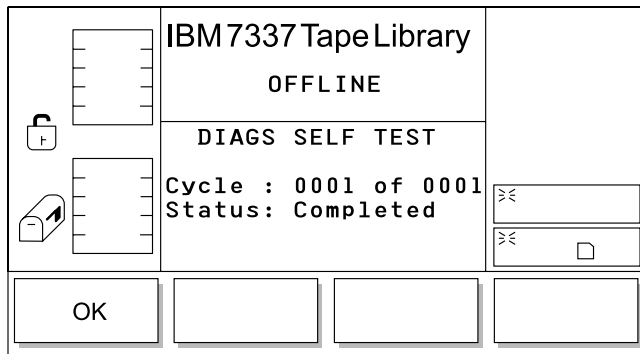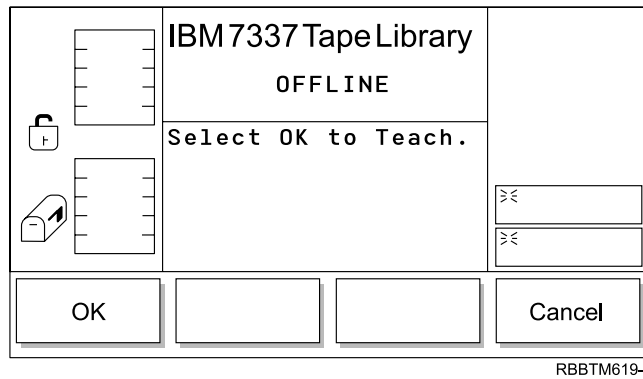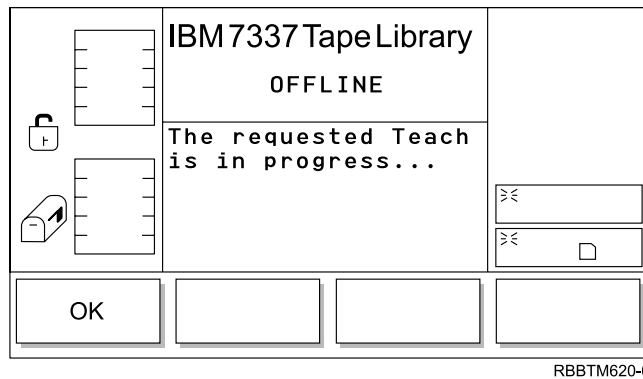

Figure 121. Self Test Dialog

To choose one of the selections, press the button below the desired softkey.
• If **Up** is selected, the value of the current field is increased.
• If **Down** is selected, the value of the current field is decreased.
• If **Next** is selected, the next field in the list becomes the active field (see Figure 122 on page 92).
• If **Cancel** is selected, the "Exercise Submenu" on page 89 displays.

```
        IBM 7337 Tape Library

              OFFLINE

        The self test runs a
        diagnostic sequence.

        Cycles to run : 001
        Include drives: No

   OK      Yes/No      Next      Cancel
```
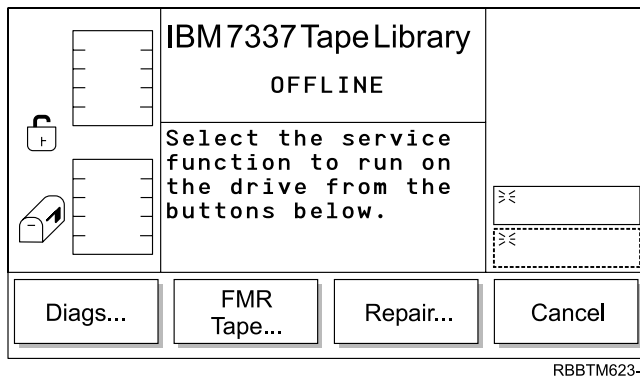
RBBTM617-0

Figure 122. Include Drives Dialog

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the field values are applied and the Self Test operation is started (see Figure 123).
- If **Yes/No** is selected, the drives are included or not included accordingly.
- If **Next** is selected, the next field in the list becomes the active field. After reaching the end of the field list, the active field reverts to the first field in the list (see Figure 121 on page 91).
- If **Cancel** is selected, the "Library Submenu" on page 81 displays.

Once the cycles have run, the test displays the results (see Figure 123).


```
        IBM 7337 Tape Library

              OFFLINE

           DIAGS SELF TEST

        Cycle : 0001 of 0001
        Status: Completed

   OK
```

RBBTM618-0

Figure 123. Self Test Execution Dialog

Teach Dialog: When **Teach** is selected, the Teach Dialog displays (see Figure 124 on page 93). This option calibrates the library.

```
          IBM 7337 Tape Library

                  OFFLINE

          Select OK to Teach.


   OK                              Cancel
```
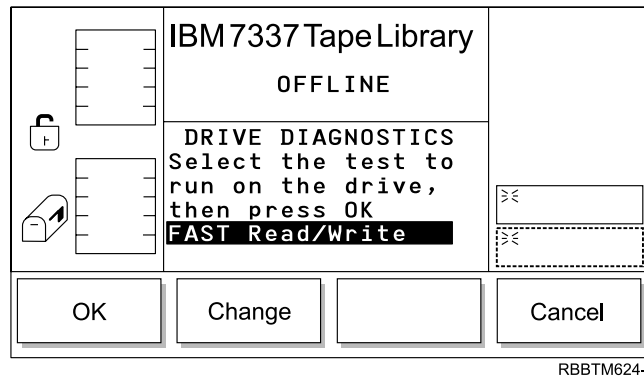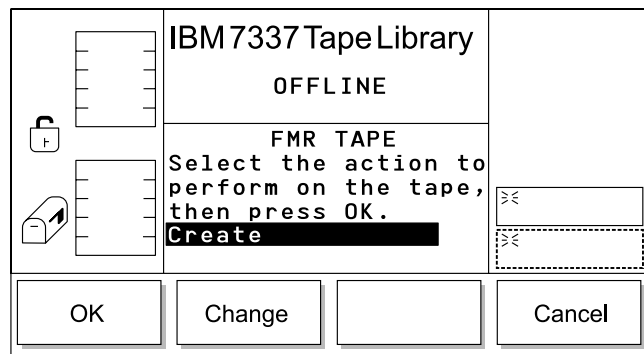
RBBTM619-0

Figure 124. Teach Dialog

To choose one of the selections, press the button below the desired softkey.
- If **OK** is selected, the Teach process begins (see Figure 125 and Figure 126).
- If **Cancel** is selected, the "Exercise Submenu" on page 89 displays.


```
          IBM 7337 Tape Library

                  OFFLINE

          The requested Teach
          is in progress...


   OK
```

RBBTM620-0

Figure 125. Teach in Progress Dialog


```
          IBM 7337 Tape Library

                  OFFLINE

          The requested Teach
          completed OK.


   OK
```
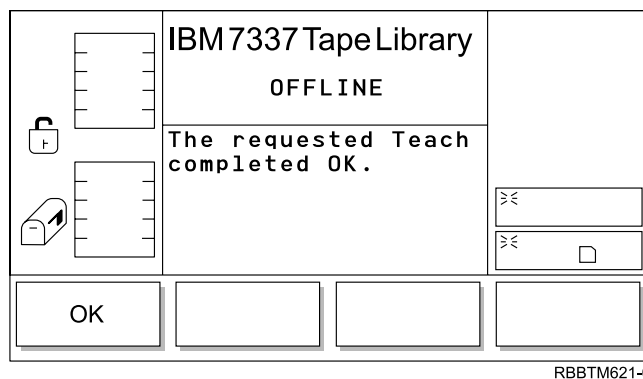
RBBTM621-0

Figure 126. Teach Completed Dialog

Drives Dialog

When **Drives** is selected, the Drives Dialog displays (see Figure 127 on page 94). This dialog allows you to select a drive to perform a service function.

```
            IBM 7337 Tape Library

                   OFFLINE

            Make sure the drive
            selected is OFFLINE!

            Drive: 01
```
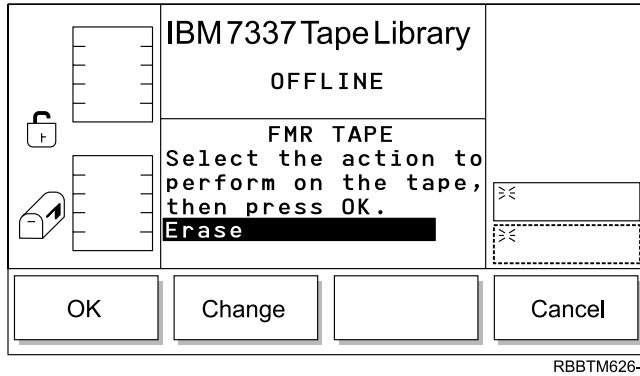
| OK | Change Drive | | Cancel |
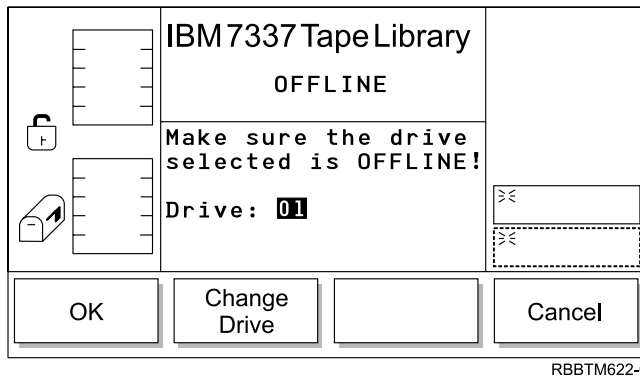
RBBTM622-0

Figure 127. Drives Dialog

To choose one of the selections, press the button below the desired softkey.

• If **OK** is selected, the "Drive Service Dialog" displays.
• If **Change Drive** is selected, the next drive in the library is chosen.
• If **Cancel** is selected, the "Service Menu Selection" on page 80 displays.

Drive Service Dialog

When **OK** is selected, the Drive Service Dialog displays (see Figure 128). This dialog displays a collection of routines specific to servicing the drives.


```
            IBM 7337 Tape Library

                   OFFLINE

            Select the service
            function to run on
            the drive from the
            buttons below.
```

| Diags... | FMR Tape... | Repair... | Cancel |

RBBTM623-0

Figure 128. Drives Service Dialog

To choose one of the selections, press the button below the desired softkey.

• If **Diags** is selected, the "Diagnostics Dialog" displays.
• If **FMR Tape** (Field Microcode Replace) is selected, the "FMR (Field Microcode Replace) Tape Dialog" on page 95 displays.
• If **Repair** is selected, the "Repair Dialog" on page 96 displays.
• If **Cancel** is selected, the "Drives Dialog" on page 93 displays.

Diagnostics Dialog: When **OK** is selected, the Diagnostics Dialog displays (see Figure 129 on page 95). This dialog allows you to select a diagnostic test to run on the drive.

```
        IBM 7337 Tape Library

                 OFFLINE

         DRIVE DIAGNOSTICS
        Select the test to
        run on the drive,
        then press OK
        FAST Read/Write
```

| OK | Change | | Cancel |

RBBTM624-0

Figure 129. Diagnostics Dialog

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the diagnostic test shown in the active field displays.
- If **Change** is selected, the next diagnostic test displays in the active field. The following drive diagnostic tests are available:
  - FAST Read/Write
  - Normal Read/Write
  - Media Read/Write
  - Head Read/Write
  - Power On Self Test
  - SCSI Wrap Test
- If **Cancel** is selected, the "Drive Service Dialog" on page 94 displays.

FMR (Field Microcode Replace) Tape Dialog: When **OK** is selected, the FMR Tape Dialog displays (see Figure 130). This dialog allows you to create or erase an FMR tape.


```
        IBM 7337 Tape Library

                 OFFLINE

              FMR TAPE
        Select the action to
        perform on the tape,
        then press OK.
        Create
```
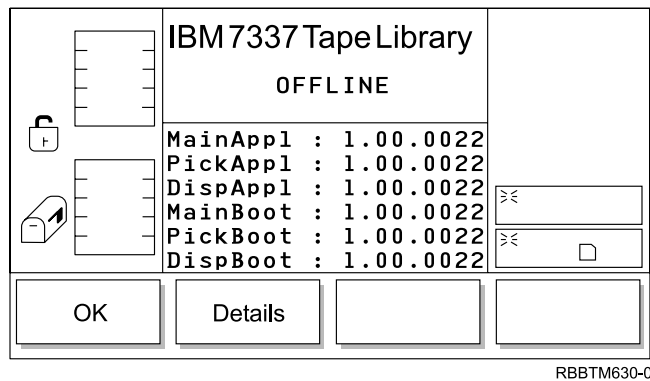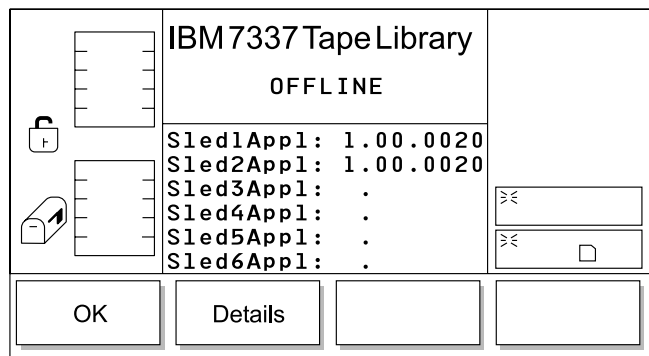
| OK | Change | | Cancel |

RBBTM625-0

Figure 130. FMR Tape Dialog

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the FMR process begins.
- If **Change** is selected, the value in the active field toggles (see Figure 131 on page 96).
- If **Cancel** is selected, the "Drive Service Dialog" on page 94 displays.

```
          IBM 7337 Tape Library

                 OFFLINE

                 FMR TAPE
          Select the action to
          perform on the tape,
          then press OK.
          Erase

     OK        Change                    Cancel
```
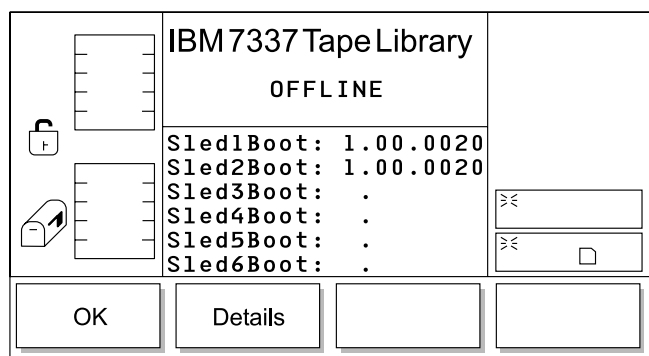
RBBTM626-0

Figure 131. FMR Tape Dialog (Erase)

To choose one of the selections, press the button below the desired softkey.
- If **OK** is selected, the FMR process begins.
- If **Change** is selected, the value in the active field toggles.
- If **Cancel** is selected, the "Drive Service Dialog" on page 94 displays.

Repair Dialog: When **OK** is selected, the Repair Dialog displays (see Figure 132). This dialog allows you to Remove or Replace a drive.


```
          IBM 7337 Tape Library

                 OFFLINE

                DRIVE REPAIR
          Select the action to
          perform on the
          drive,then press OK.
          Remove

     OK        Change                    Cancel
```

RBBTM627-0

Figure 132. Repair Dialog

To choose one of the selections, press the button below the desired softkey.
- If **OK** is selected, the Repair process begins.
- If **Change** is selected, the value in the active field toggles (see Figure 133 on page 97).
- If **Cancel** is selected, the "Drive Service Dialog" on page 94 displays.

RBBTM628–0

Figure 133. Repair Dialog (Replace)

About Menu Selection

The About Menu displays the library serial number, installed firmware revision, and application and boot code for the picker, drive sleds, and display. **About** is selected from the Main Menu (alternate screen) by pressing the button below the **About** softkey. The About Menu displays (see Figure 134).
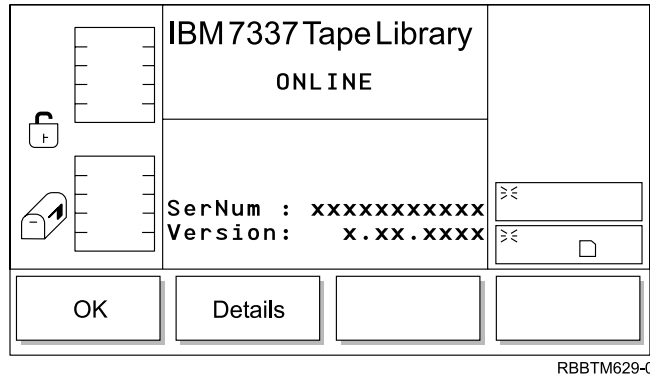
Figure 134. About Menu

To choose one of the selections, press the button below the desired softkey.
- If **OK** is selected, the "Main Menu Selection" on page 45 (alternate screen) displays.
- If **Details** is selected, the "Details Dialog" displays.

Details Dialog

When **Details** is selected, the Details Dialog displays (see Figure 135). Use this option to view the library's current application and boot code for the picker, drive sleds, and display.

Figure 135. Detail Dialog (initial screen)

To choose one of the selections, press the button below the desired softkey.
- If **OK** is selected, the "Main Menu Selection" on page 45 (alternate screen) displays.
- If **Details** is selected, the follow on dialog displays (see Figure 136 on page 99).

```
            IBM 7337 Tape Library

                    OFFLINE

            Sled1Appl:  1.00.0020
            Sled2Appl:  1.00.0020
            Sled3Appl:   .
            Sled4Appl:   .
            Sled5Appl:   .
            Sled6Appl:   .

        OK         Details
                                          RBBTM631-0
```

Figure 136. Detail Dialog (secondary screen)

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the "Main Menu Selection" on page 45 (alternate screen) displays.
- If **Details** is selected, the follow on dialog displays (see Figure 137).

```
            IBM 7337 Tape Library

                    OFFLINE

            Sled1Boot:  1.00.0020
            Sled2Boot:  1.00.0020
            Sled3Boot:   .
            Sled4Boot:   .
            Sled5Boot:   .
            Sled6Boot:   .

        OK         Details
                                          RBBTM632-0
```

Figure 137. Detail Dialog (tertiary screen)

To choose one of the selections, press the button below the desired softkey.

- If **OK** is selected, the "Main Menu Selection" on page 45 (alternate screen) displays.
- If **Details** is selected, the display toggles back to the original About Menu (see "About Menu Selection" on page 98).

Chapter 5. Removing the 7337 Tape Library

This chapter describes how to remove the 7337 Tape Library after it has been installed.

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

Removal Checklist

When removing the 7337 Tape Library, 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. Remove any tape cartridges loaded in the drives.
2. Remove the 7337 Tape Library 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 11. Performing a System Shutdown" on page 27.
4. Turn off the power to the 7337 Tape Library.
5. Turn off the power to all external devices attached to the system.
6. Turn off the power to the system unit.

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)**

7. Unplug the system unit power cable from the electrical outlet.
8. Unplug the power cable for the 7337 Tape Library 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.

9. Disconnect the SCSI bus cable from the system unit.
10. Disconnect the SCSI bus cable from the 7337 Tape Library.
11. Remove the 7337 Tape Library and place it in the new location.
12. Reinstall the 7337 Tape Library (see "Chapter 2. Setting Up the 7337 Tape Library" on page 13).

Chapter 6. Using the Media

Note: If a prerecorded tape is reused and the Write From Beginning of Tape (BOT) command is executed, all prerecorded data is lost. This includes density because they only occur when writing from BOT.

For read operation of prerecorded tape media, the recorded density will be read back. For write operation, the tape media can be recorded using any of the supported densities of the loaded tape type from BOT, or the default density of the loaded tape type. For write append operation, the prerecorded data density will be used.

Table 9 gives tape cartridge densities and capacities.

Table 9. Tape Cartridge Capacity and Density

Type of Cartridge Supported	Density Format	Native Data Capacity	Compressed** Data Capacity	Density Setting in Decimal	Density in Hexadecimal (Reference Only)
DLTtapeIII	DLT2000	10.0GB	20.0GB (default for drive)	25	19h
DLTtapeIIIxt	DLT2000xt	15.0GB	30.0GB (default for drive)	25	19h
DLTtapeIV	DLT4000	20.0GB	40.0GB	26	1Ah
	DLT7000	35.0GB	70.0GB	27	1Bh
	DLT8000	40.0GB	80.0GB (default for drive)	65	41h

Note: This drive is very sensitive to block size. For example, using a block size of 1024 and backing up 32GB of data will take approximately 22 hours. 32GB of data backed up at a block size of 30,000 will take approximately 2 hours. Small block sizes have a significant impact on performance, but only a minimal impact on capacity.

Users should ensure the block size they select is supported by their application.

** Compression will depend upon the type of data. A compression ratio of 2:1 is assumed for this compressed capacity.

Changing Tape Density

Note: Refer to *AIX V4 System Management Guide: Operating Systems and Devices* for more information on changing the tape density.

Types of Tape Cartridges

The 7337 Tape Library is shipped with a data cartridge (part number 59H3040), a test cartridge (part number 59H3039), and a cleaning cartridge (part number 59H3092).

Note: A barcode label MUST be installed on all tape cartridges used in the 7337 Tape Library if the library touch scan feature has been disabled. See "Config Dialog" on page 78 for more information on configuring the cartridge recognition features.

Data Cartridge

Use the data cartridge for saving or restoring your programs or data. Place the label in location **1** as shown in Figure 138.
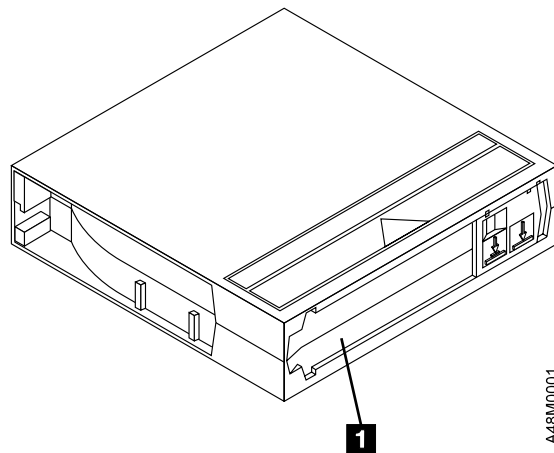
Figure 138. Placement of Label on the Data Cartridge

Test Cartridge

Reserve the specially labeled test tape cartridge for use on the drive while performing diagnostics. Do not use it to save or restore programs or data.

Cleaning Cartridge

Use the specially labeled cleaning cartridge to clean the 7337 Tape Library.

Note: To order additional media supplies, refer to the information in "Ordering Tape Cartridges" on page 112.

Recommendations for Tape Cartridge Usage

Use the following handling guidelines and conduct careful inspections of the tape cartridges on a regular, ongoing basis. By adhering to these guidelines and making sure that the tape cartridges are stored within the specified environmental limits, the chance of experiencing problems due to tape cartridges will be greatly minimized.

- Use only recommended tape cartridges with the 7337 Tape Library.
- **Before using a DLT cartridge, inspect it carefully as described in "Tape Cartridge Inspection" on page 106.**
- Do not drop or bump the tape cartridge; this may dislodge or damage its internal components. Cartridges that have been dropped should be thoroughly inspected prior to insertion into a tape drive.
- Store tape cartridges vertically and in their plastic cases.
- When carrying the tape cartridges in their cases, always orient the cases so that the grooves in the cases interlock. This prevents the cases from slipping apart and falling.
- Do not carry tape cartridges loosely in a box or any other container. Allowing cartridges to hit together exposes the cartridges to unnecessary physical shock(s).
- Never stack the tape cartridges in stacks of more than five (5).

- Do not place tape cartridges near electromagnetic interference sources, such as terminals, motors, and video or X-ray equipment; data on the tape may be altered.
- Avoid opening of the cartridge door; this may expose the tape to contamination or physical damage.
- Do not touch the tape or tape leader. Natural skin oils can contaminate the tape and impact tape performance.
- Always observe the proper environmental conditions for the storage of tape cartridges. Refer to the cartridge reference card supplied with each cartridge.
- Do not expose the tape cartridge to excessive moisture or prolonged direct sunlight.
- Do not operate in a dusty environment.
- Do not adhere labels to a cartridge anywhere except in the slide-in slot (see Figure 138 on page 104). Never apply adhesive labels or POST-IT notes on the top, side, or bottom of the tape cartridge.

Storage and Shipping Environments

Before using a tape cartridge, let it acclimate to the operating environment by placing the cartridge in 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 8.)

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

The recommended environment for storage and shipment of tape cartridges is shown in Table 10.

Table 10. Recommended Environment for Tape Cartridges

Environmental Factor	Storage	Shipping
Temperature	5°C to 45°C (41° to 113°F)	−17 to 49°C (−1 to 120°F)
Relative Humidity (noncondensing)	20 to 80%	20 to 80%
Maximum Wet Bulb	26°C (79°F)	26°C (79°F)

Setting the Write-Protect Switch

The position of the write-protect switch on the tape cartridge determines when you can write to the tape.

- When you slide the switch **1** to the left, data can be read, but not be written, to the tape.
- When you slide the switch **1** to the right, data can be written to and read from the tape.

Figure 139 shows the write-protect switch on the tape cartridge.
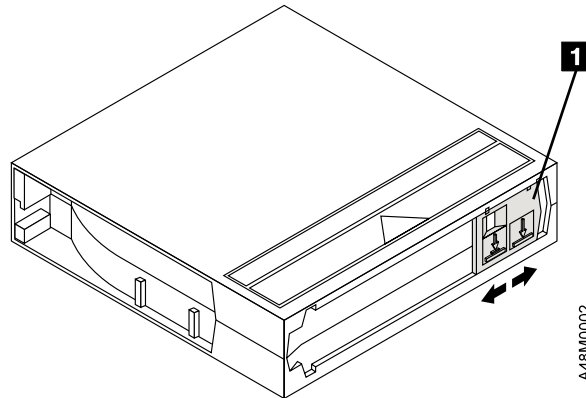
Figure 139. Setting the Write-Protect Switch

Tape Cartridge Inspection

Tape cartridges should be inspected for damage and proper tape leader alignment before each use. Use the following sections as guidelines for inspecting the DLT tape cartridge.

Inspection Frequency

DLT tape cartridges should be inspected:

- Before being inserted into a tape drive.
- If a cartridge has been dropped or subjected to a hard physical shock.
- If a tape drive becomes inoperable after loading a tape cartridge.
- If a shipment of tape cartridges is received that shows any signs of shipping damage.

Inspection Procedure

Use the following steps to inspect the DLT tape cartridge:

1. Check for proper operation of the tape cartridge Write Protect Switch. This sliding switch should move back and forth with a definite snap. The orange tab should be visible when the tape cartridge is set to enable Write Protection.

2. Look at the tape cartridge for any obvious signs of cracks or physical damage. Look for broken or missing parts.

3. Gently shake the tape cartridge. Listen for any rattling or sounds of any loose pieces inside the cartridge. If sounds of loose parts are heard, dispose of the cartridge and do not use it.

4. Hold the tape cartridge so that the end of the cartridge that is normally inserted into the tape drive is facing you (as shown in Figure 140). Inspect the small opening on the left-hand side of the tape cartridge. In the opening, you should see a small plastic tab (typically white colored). This tab is one of two cartridge reel locks. The reel locks can be damaged if a cartridge is dropped or mishandled.

Note: If either reel lock is not visible, dispose of the cartridge and do not use it.
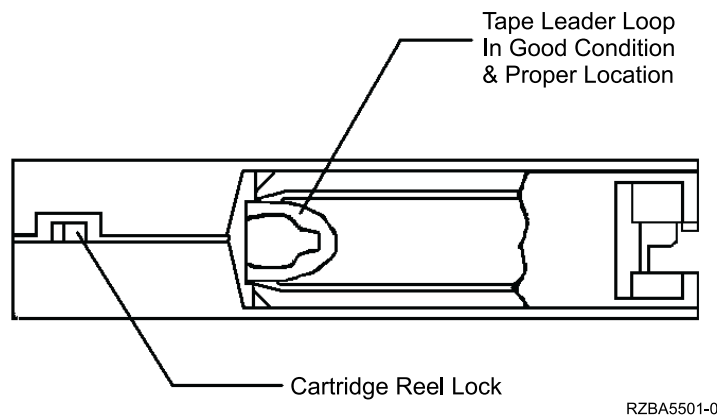
Figure 140. Checking the Cartridge Reel Lock

5. Look at the bottom of the tape cartridge as shown in Figure 141 on page 108. Inspect the small opening on the right-hand side of the tape cartridge. In the opening, you should see a small plastic tab (typically white colored). This tab is one of two cartridge reel locks. The reel locks can be damaged if a cartridge is dropped or mishandled.

Note: If either reel lock is not visible, dispose of the cartridge and do not use it.
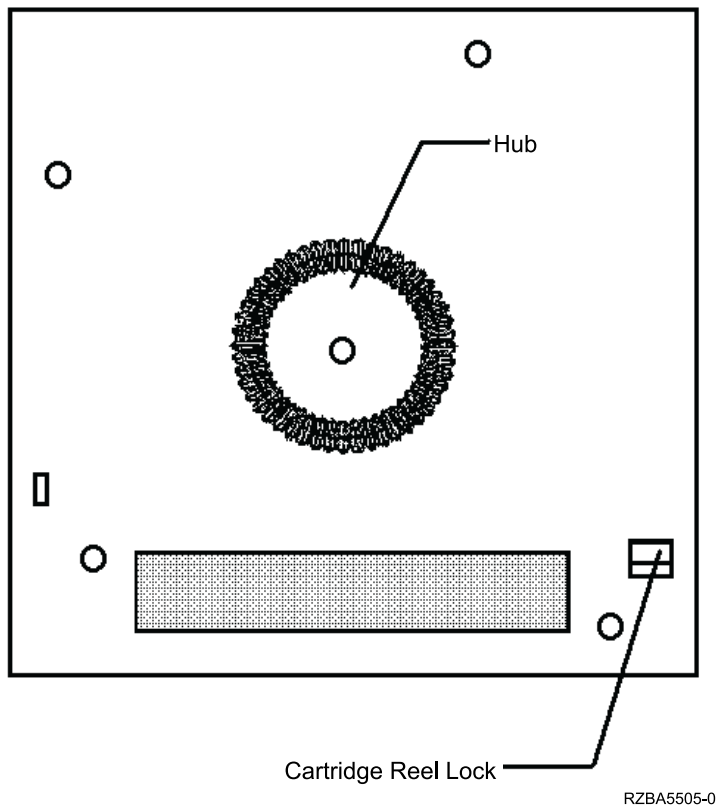
Figure 141. Checking the Cartridge Reel Lock

6. Make sure the spring loaded cartridge hub is centered within the circular opening of the cartridge. Gently press the hub and make sure it springs back into place and is centered.

Note: If the hub is not centered or does not spring back, dispose of the cartridge.

7. Inspect the tape leader that is inside the cartridge. To enable inspection, the cartridge door must be opened. Open the door by using your thumb to gently depress the door locking tab located at the corner of the cartridge. With the tab depressed, gently swing open the cartridge door. With the door open, you should be able to see the tape leader (see Figure 142).
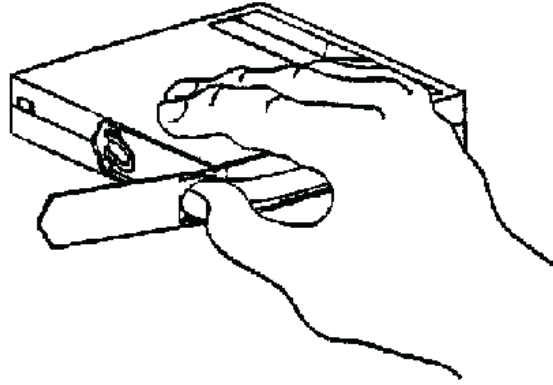
RZBA5507-0

Figure 142. Opening the Tape Cartridge Door

8. Ensure the tape leader is not pulled too far into the tape cartridge. If the tape leader has been pulled into the cartridge, the DLT drive cannot hook the tape and use the cartridge. Also, make sure the tape is not loosely wound on the cartridge reel (see Figure 143 on page 110).

9. The tape leader loop should be in the correct position (see Figure 143) and sticking out about ¼ inch from the tape reel outer diameter (see Figure 144 on page 111).

Tape Leader Loop
In Good Condition
& Proper Location

Cartridge Reel Lock
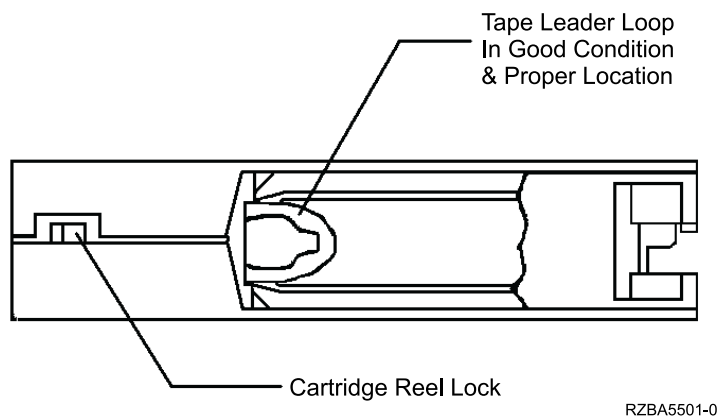
RZBA5501-0

Figure 143. Cartridge Leader in Correct Position

Tape Leader Loop Tip
In Proper Location

Hub
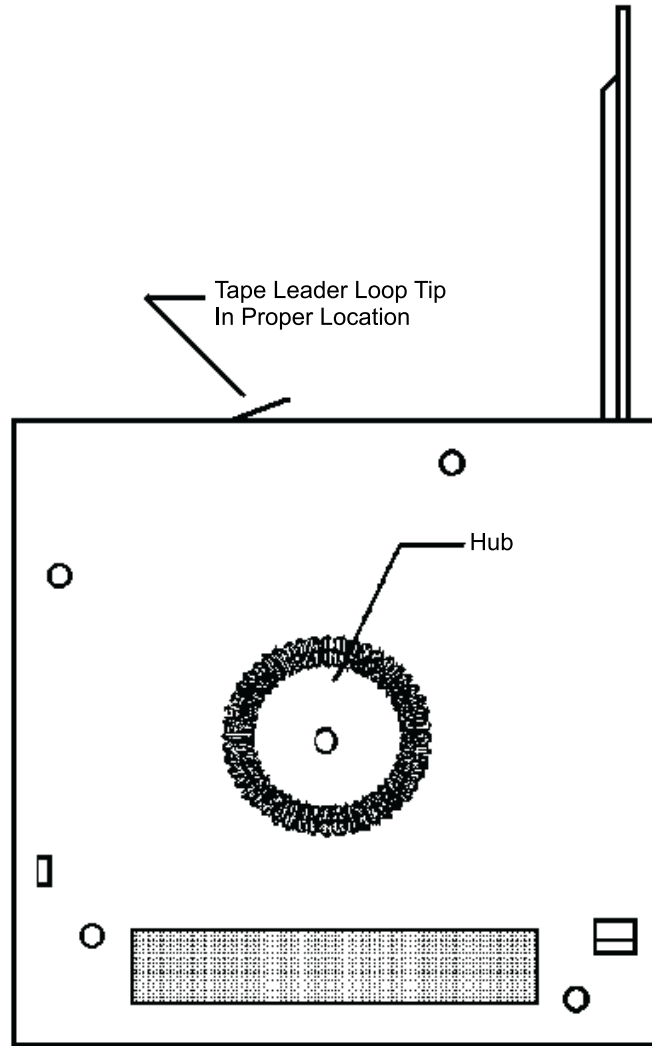
RZBA5506-0

Figure 144. Side View of Leader Loop in the Correct Position

10. Inspect the tape leader and ensure that it is not damaged, torn, or bent.

Note: If the tape or leader appears to be damaged (see Figure 145 on page 112), dispose of the cartridge and do not use it.

Tape Leader Loop
Damaged

RZBA5502-0
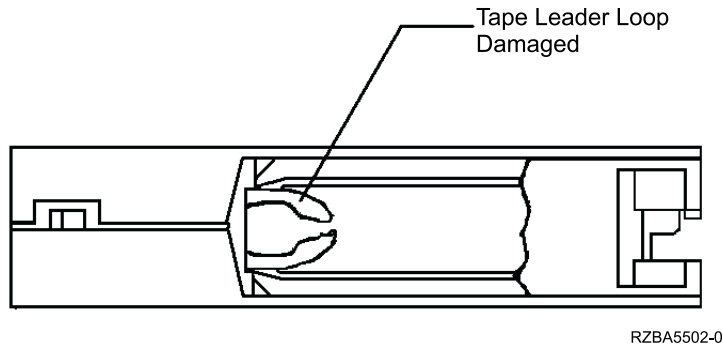
Figure 145. Damaged Leader Loop on a Tape Cartridge

11. This completes the inspection.

Ordering Tape Cartridges

Table 11 lists the tape cartridges that you can order for the 7337 Model 360 DLT Tape Library. IBM Media Distribution North America will serve the U.S., Canada, Latin America, and Asia Pacific. IBM Supplies Distribution will serve Europe, the Middle East and Africa. To order media or to obtain the name of the nearest authorized distributor or dealer, IBM customers should call 1–888–IBM-MEDIA.

Table 11. Tape Cartridges for the 7337 Model 360 DLT Tape Library

IBM Part Number	Type of Cartridge	Length
59H3411	DLTtapeIIIxt Cartridge	549 m (1800 ft)
59H3040	DLTtapeIV Cartridge	549 m (1800 ft)
59H3039	Test Cartridge	549 m (1800 ft)
59H3092	Cleaning Cartridge	--
19P1684	5–slot Magazine with Dust Cover	--

Chapter 7. Installing Optional Features

Use the sections in this chapter to install additional, optional features in the 7337 Model 360 Tape Library.

Installing a Drive Sled

When installing drive sleds in the library, the first sled must be installed in the bottom most slot (A). Add subsequent sleds directly above the last sled installed, from bottom to top (B, C, D, E, F) with no empty drive slots (see Figure 146).

RBBTM638-0
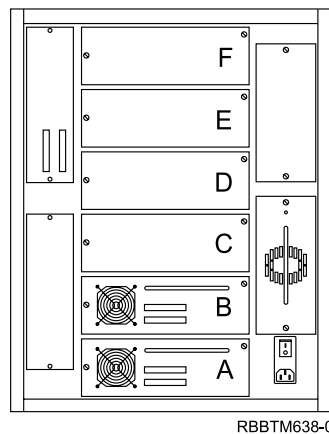
Figure 146. Correct Order for Installing Drive Sleds

Drive sleds that are attached to the same SCSI host should be installed next to each other in the library, otherwise the drive to drive cables may not reach. For example: If there is more than one host, sleds attached to the same host should be installed adjacent to each other.

1. Vary the library and drives Offline to *all* attached hosts.
2. Power Off the library by pushing the O on the power switch (**1** in Figure 19 on page 37).
3. From the rear of the library, locate the drive slot where the drive sled will be installed. Loosen the two captive thumbscrews on the filler plate, **3** in Figure 147 on page 114, and remove the filler plate. Save the filler plate for future drive maintenance activity.

   Note: The library will not operate properly unless each drive slot contains either a drive sled or a filler plate.

4. Slide the tape drive sled **2** into position and tighten the two captive thumbscrews **1** .
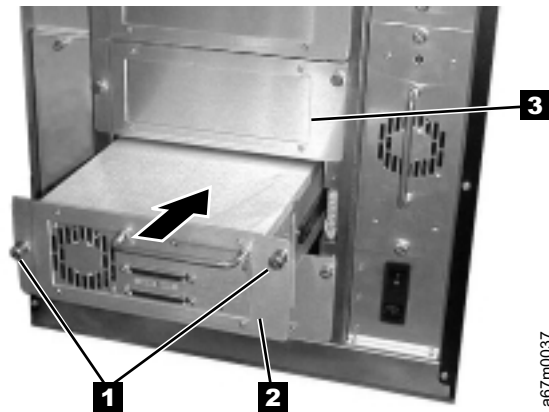
Figure 147. Installing a Drive Sled

5. To install other library features, use the procedures in this chapter. Otherwise, go to "Step 4. Checking the Electrical Outlets" on page 17.
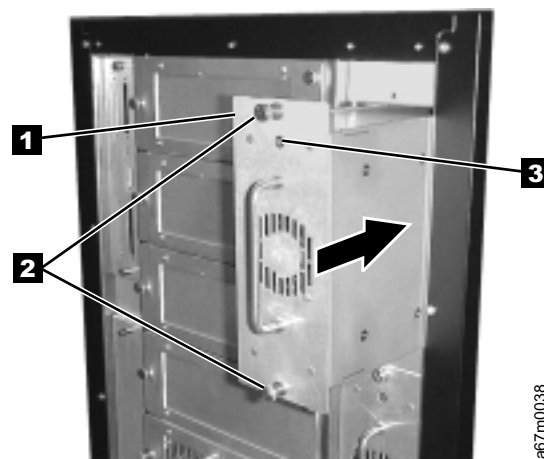
Installing a Redundant DC Power Module

DANGER

> **Up to 240 V ac is present at the power module connectors when the main power cord is connected to a power source. (RSFTD010)**

1. Vary the library and drives Offline to *all* attached hosts.
2. Power Off the library by pushing the O on the power switch (**1** in Figure 19 on page 37).
3. From the rear of the library, locate the slot where the redundant dc power module will be installed. Loosen the two captive thumbscrews on the cover plate and remove the cover plate (see Figure 148). Retain the power cover plate for future library maintenance.

   Note: Before inserting the dc power module, be sure to orient the power module so that the LED **3** is located as shown in Figure 148.
4. Slide the power module **1** into position until it mates with the power distribution board and tighten the two captive thumbscrews **2**.
5. To install other library features, use the procedures in this chapter. Otherwise, go to "Step 4. Checking the Electrical Outlets" on page 17.

Figure 148. Installing a Redundant DC Power Module

Installing a Storage Column

1. Vary the library and drives Offline to *all* attached hosts.
2. Power Off the library by pushing the O on the power switch (**1** in Figure 19 on page 37).
3. Open the library front door.
4. If necessary, move the picker assembly to a position that allows access room and gently slide the storage column in place.
5. Perform one of the following two steps depending on the column that you are installing:
   a. If you are installing column **2** or **4**, use the torx driver to tighten two bottom screws **5** that attach the storage column to the bottom chassis (see Figure 149).
   b. If you are installing column **5**, use the 7/16 inch nut driver to tighten the bolt **3** that attaches the storage column to the bottom chassis bracket.
6. Install the top bolt **1** by using the 7/16 inch nut driver.
7. Install the magazines **2** in the storage column.
8. To install other library features, use the procedures in this chapter. Otherwise, go to "Step 4. Checking the Electrical Outlets" on page 17.
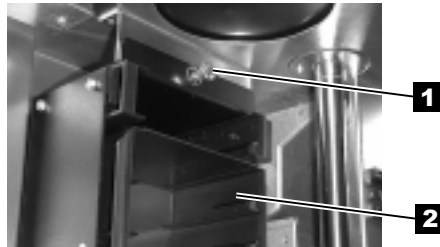
Top Attachment for all Storage Columns
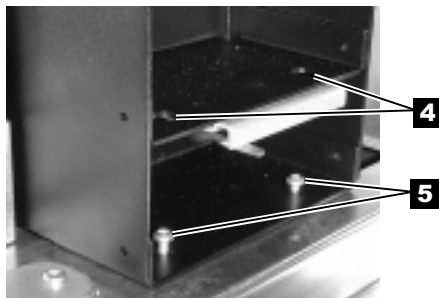
Bottom Attachment for
Storage Columns 2 and 4
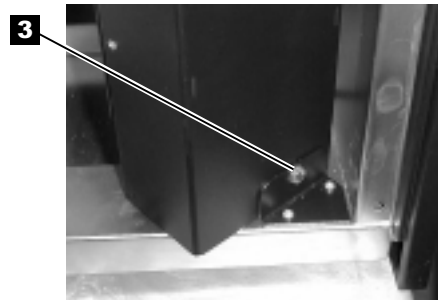
Bottom Attachment for
Storage Column 5

Figure 149. Installing a Storage Column

Installing the Library into a Rack

Be familiar with these installation instructions before proceeding with the installation tasks.

Understand the requirements for connecting cables between the host and the library and all tape drives.

Use the inventory checklist to ensure that you have received the necessary items required for installation.

CAUTION:
The weight of this part or unit is more than 55 kilograms (121.2 pounds). It takes specially trained persons with a lifting device to safely lift this part or unit. (RSFTC206)

Note: The sling that is shipped with the library can be used to lift and position the library during installation. It is recommended that four people use the handles **1** of the sling **2** to lift the library (see Figure 150).

Figure 150. Lifting Device

Guidelines for Installation

For proper library operation and to meet safety requirements:

*   Do not install the library in a rack where the maximum internal ambient temperature will exceed 38°C.
*   Do not install the library in a rack where the airflow is compromised. Do not block or otherwise restrict airflow to the power module front or rear vents.
*   Install heavy devices, such as the 7337 Model 360 Tape Library, at or near the bottom of the rack, to reduce the possibility of the rack tipping over.
*   Ensure that a hazardous condition is not created due to uneven mechanical loading when installing the library into a rack. If the rack has a stabilizer, it must be firmly attached before you install or remove the library.

- This unit requires 6 amps of power with an input of 90 – 137 100 V cap or 3 amps with an input of 180 – 240 V cap. Connect the library to the power supply circuit so that the overloading of circuits does not compromise the supply wiring or overcurrent protection.
- Ensure that the library is properly secured when in the rack (see step 9 on page 126).

Unpacking the Rackmount Kit

1. Open the shipping carton and remove the components of the kit (see Figure 151 on page 119).
2. Verify that you received the parts listed in Table 12.

Table 12. Components of Rackmount Kit

Component Number	Description	Quantity
1	Screw, pan head Phillips , M5 x 16mm, .8 pitch, black zinc	10
2	Finishing washer, M5, black polyamide	10
3	Cage nut, M5 (for rack rails that have square mounting holes)	10
4	Clip nut, M5 x .8, steel (for rack rails that have round mounting holes)	10
5	Front mounting bracket	2
6	Rear mounting bracket	2
7	Screw, flat head, 8–32x3/8 in.	4
8	Screw, pan head Phillips, 8–32x3/8 in.	2
9	Rear stop bracket	1
10	Nut, with integral lock washer, 8–32	2

Rear View
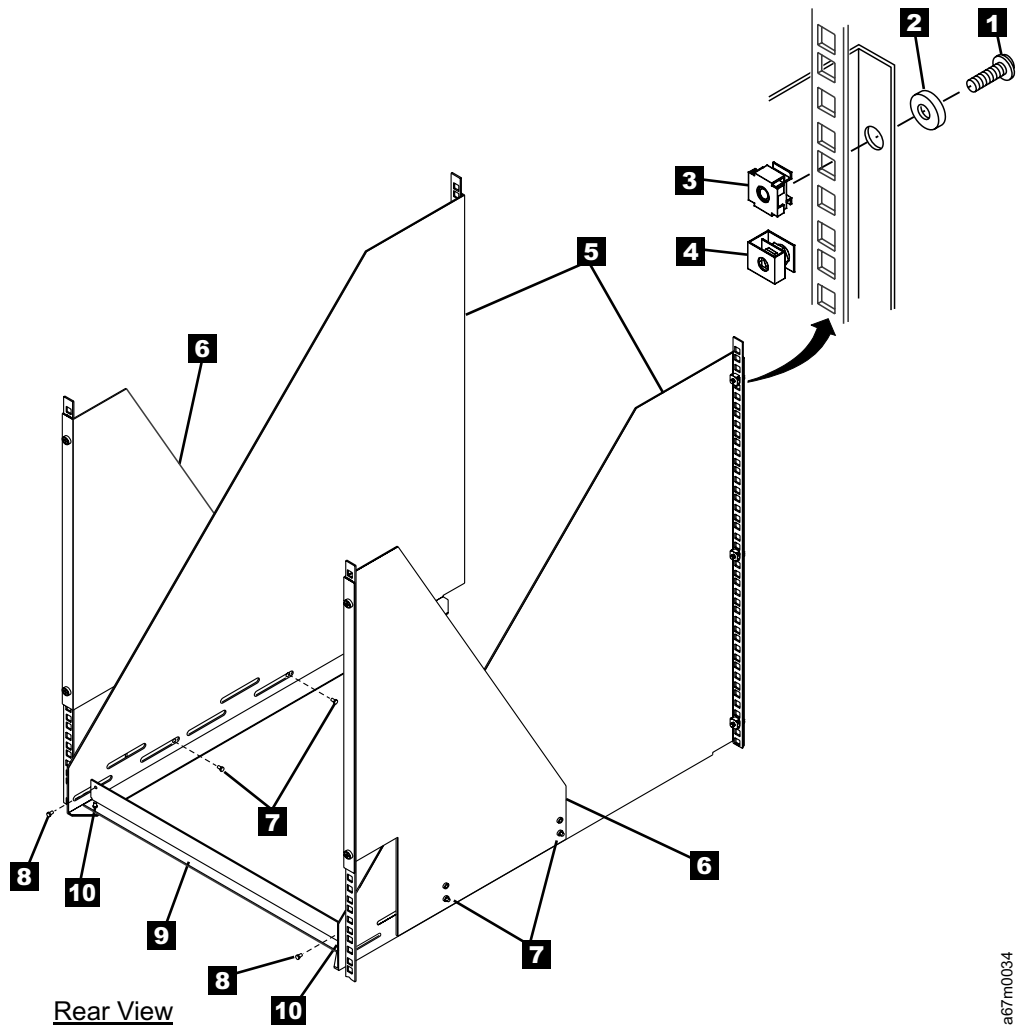
Figure 151. Components of Rackmount Kit

a67m0034

Installing the Rackmount Hardware

Required tools (not supplied): Phillips screwdriver and 3⁄8 in. nut driver.

1. The 7337 Tape Library requires 14U space in a standard 19 in. rack. Ensure that this space is available and allocated in the rack. Install heavy devices, such as the 7337 Model 360 Tape Library, at or near the bottom of the rack, to reduce the possibility of the rack tipping over.

   Note: Each U is 4.45 cm (1.75 in.) and is usually marked by three holes in the rack (see Figure 152).
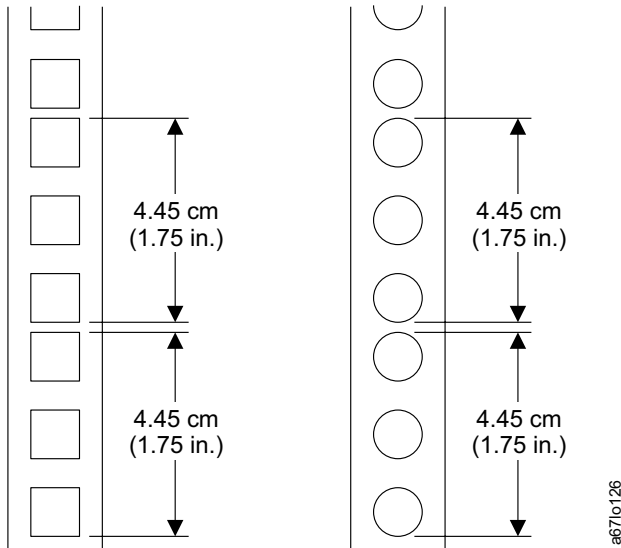
Figure 152. Example of Standard Racks

2. If you are installing the library into a rack that has a front door, remove the front door to simplify the subsequent steps.
3. If the rack has a stabilizing mechanism, such as wheel locks, ensure that they are locked and the rack is stable before proceeding.
4. See Figure 153 on page 121 for steps 4 through 8. Place one of the front mounting brackets **7** next to the rail **6** . Using the bracket as a template, install three cage nuts **3** , or clip nuts **4** into the holes in the rail that are in line with the holes in the mounting bracket. Repeat this step for the second front mounting bracket.

Note: Figure 153 shows both clip nuts and cage nuts, but you must install only one type of nut.

5. For racks with square mounting holes, install cage nuts. Pinch the flanges of the nut together until it fits into the square on the vertical rail, then release the flanges.

6. For racks with round mounting holes, install clip nuts. Slide the clip nut onto the rail until it fits into the hole.

7. Position the front mounting brackets **7** so that the flanges **5** are on the outside of the front vertical rails **6**.

8. Secure the brackets to the rails with three Phillips screws **1** and three finishing washers **2**.

Rear View
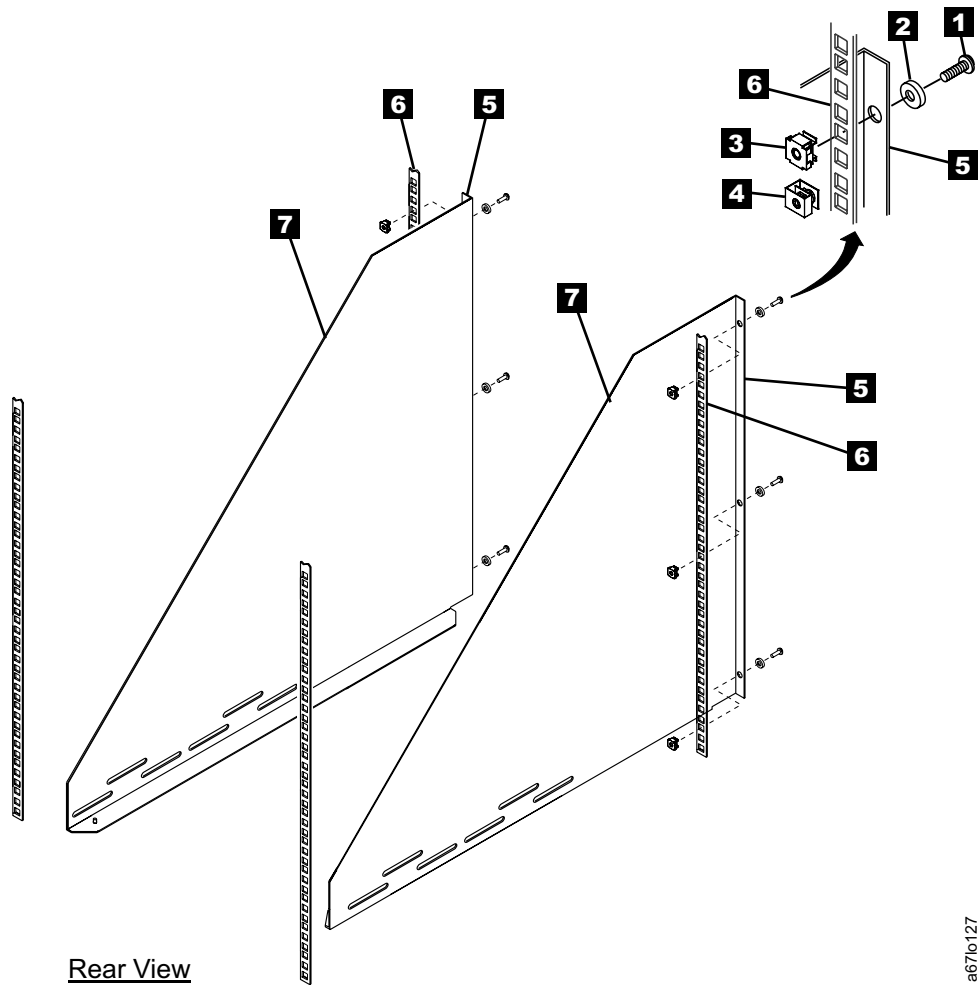
Figure 153. Installing the Front Mounting Brackets

a67lo127

9. See Figure 154 for steps 9 through 11. Place one of the rear mounting brackets **7** next to the rail **6** . Using the bracket as a template, install two cage nuts **3** , or clip nuts **4** into the holes in the rail that are in line with the holes in the mounting bracket. Repeat this step for the second rear mounting bracket.

10. Position the rear mounting brackets **7** so that the flanges **5** are on the outside of the rear vertical rails **6** .

11. Secure the brackets to the rails with two Phillips screws **1** and two finishing washers **2** .

Rear View

a67lo128
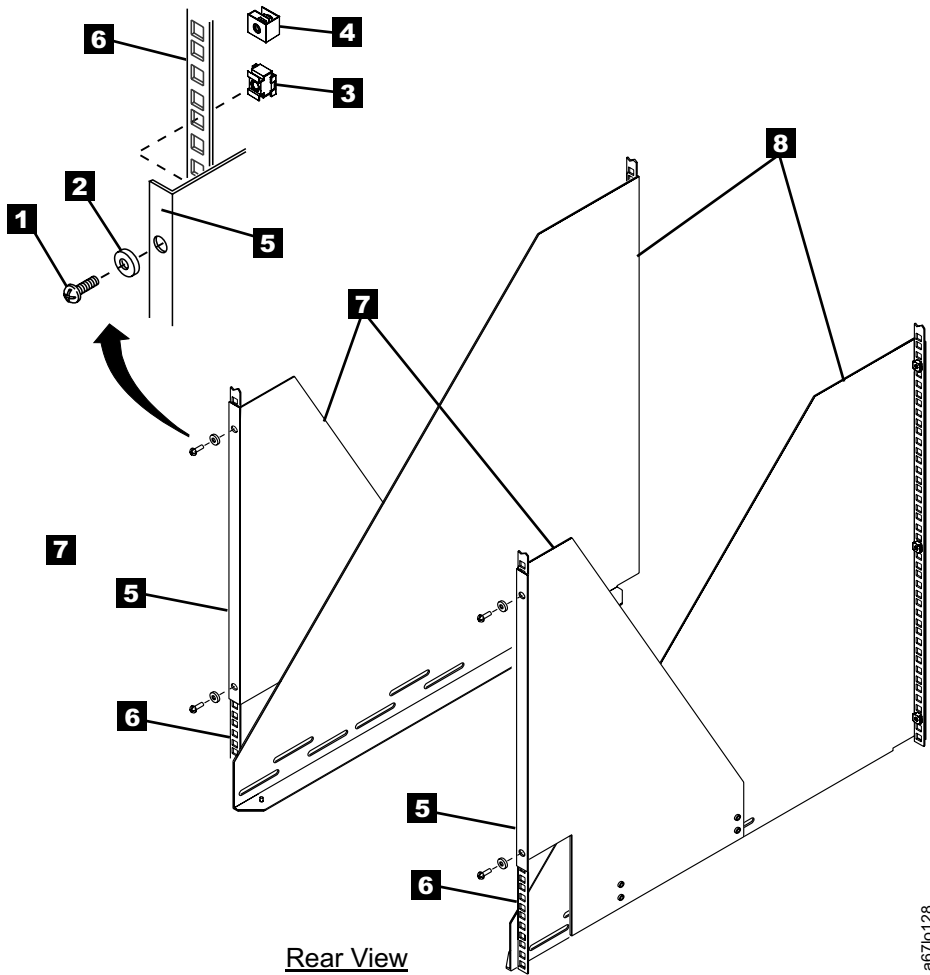
Figure 154. Installing the Rear Mounting Brackets

12. See Figure 155 for steps 12 and 13. Attach the front mounting brackets **2** to the rear mounting brackets **1** by placing four screws **3** through the slots, two on each side.

13. Place the rear stop bracket **4** on the studs **5** located on the mounting brackets **2** . To have clearance for the rear stop bracket, you might have to push the front mounting brackets against the rear vertical rails. Use the two nuts **6** to secure the rear stop bracket.
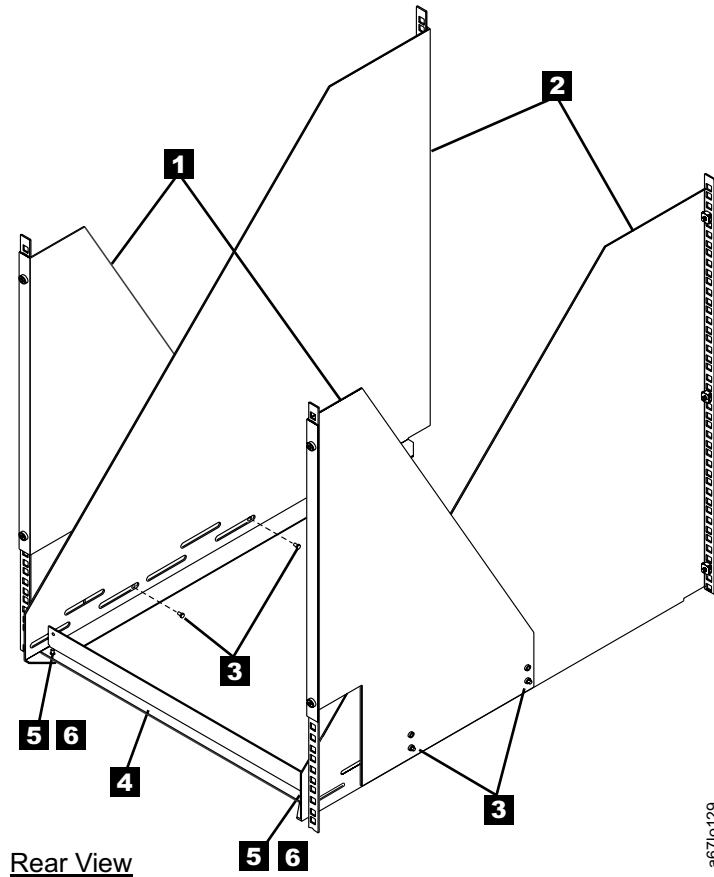
Rear View

Figure 155. Installing the Rear Stop Bracket

Placing the Library Into the Rack

1. Open the front door.

2. Remove the shipping strap that secures the picker assembly to the frame (see Figure 156.) Save this strap for future use.
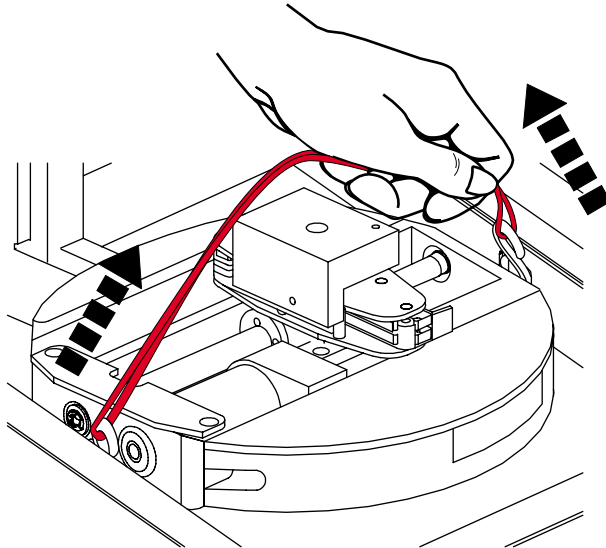
RBBTN502-0

Figure 156. Removing the Picker Assembly Shipping Strap

3. Remove all drive sleds and dc power modules that are installed in the tape library to reduce its weight. Note the position of the drive sleds as you remove them; you will need to replace them in the same positions. Loosen the captive thumbscrews **1** and slide the drive sled **2** and dc power module **3** out of the chassis (see Figure 157).
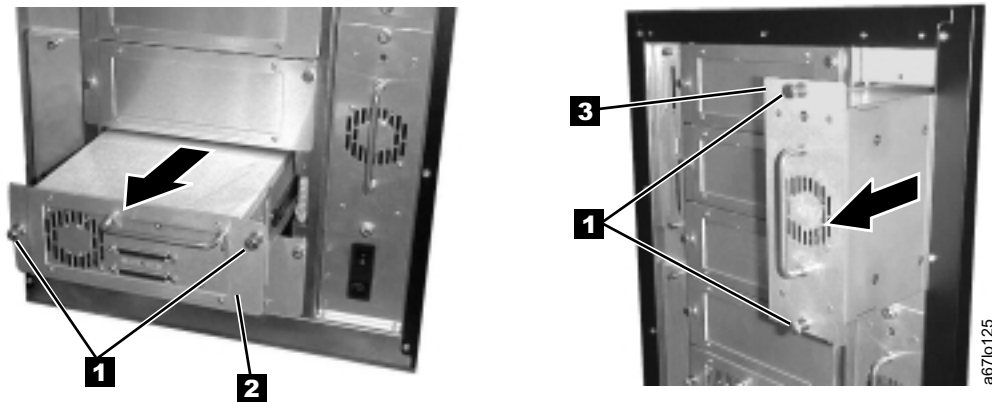
Figure 157. Removing Drive Sleds and DC Power Modules

4. Open the front door and remove all of the magazines **2** and cartridges **1** from the storage columns within the library (see Figure 158 on page 125). Close the front door securely.
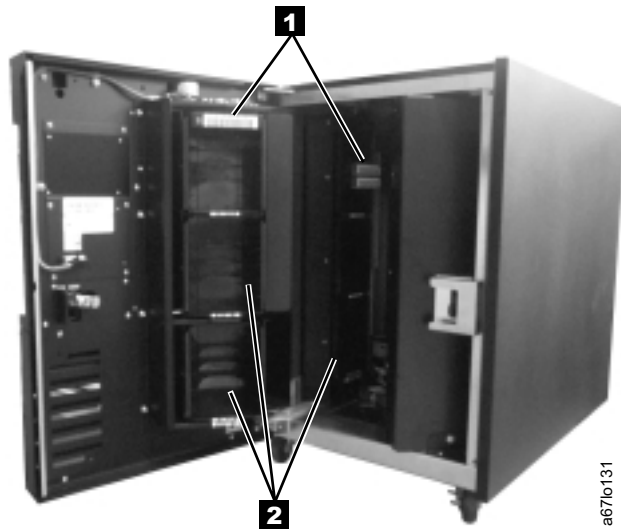
Figure 158. Removing Magazines and Cartridges

> **Note:** For the next procedure, place the 7337 Tape Library onto its side. The sling shipped with the library can be used to tip the library onto its side.

5. Remove the four casters (**2** and **4** in Figure 159) from the bottom of the library. Use a 3/8 in. wrench to remove the four bolts **1** that secure each caster to the frame.
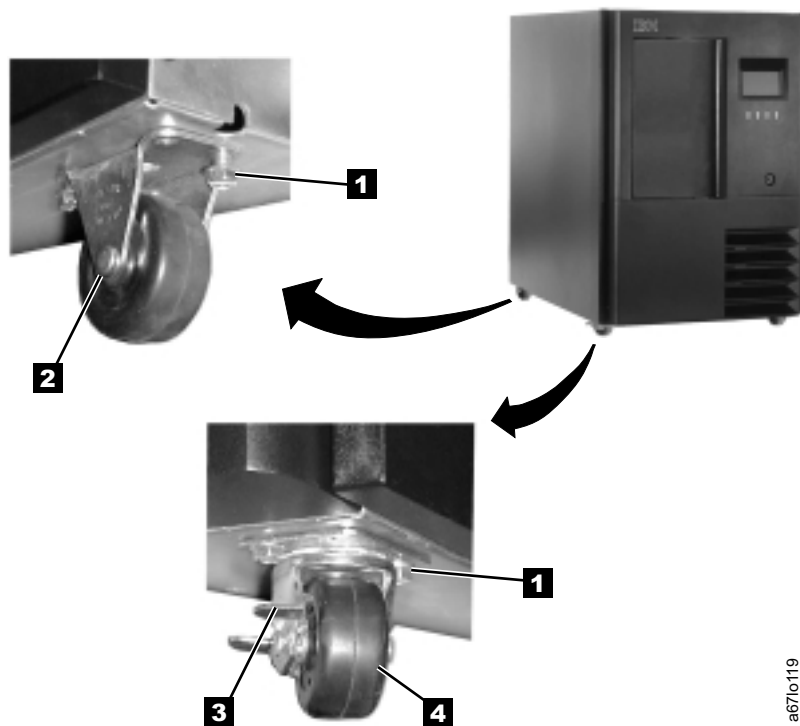

Figure 159. Removing Casters

6. Stand the library back up to the operating position.

Note: Open the front door **4** completely, before removing the side covers (see Figure 160).

7. Remove both side covers from the library. Each cover is attached to the chassis with four Phillips screws. Remove the Phillips screws **1**, and remove the covers **2**.

8. From the front of the rack, use the handles **3** located on both sides of the library to lift the library onto the rackmount hardware.
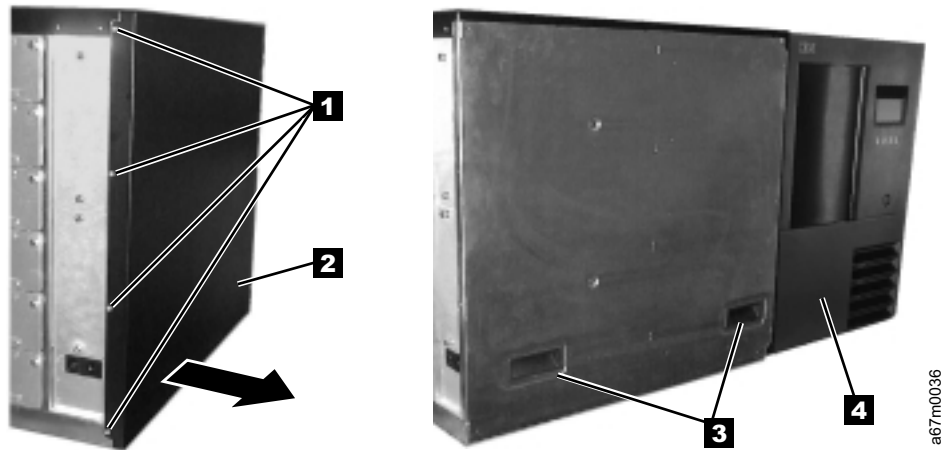

Figure 160. Removing the Side Covers

9. Slide the library (**1** in Figure 161) onto the rackmount hardware until it stops against the rear stop bracket **3**. Using the two Phillips screws **2**, attach the library to the rear stop bracket **3**. This ensures the library is secured to the rack.
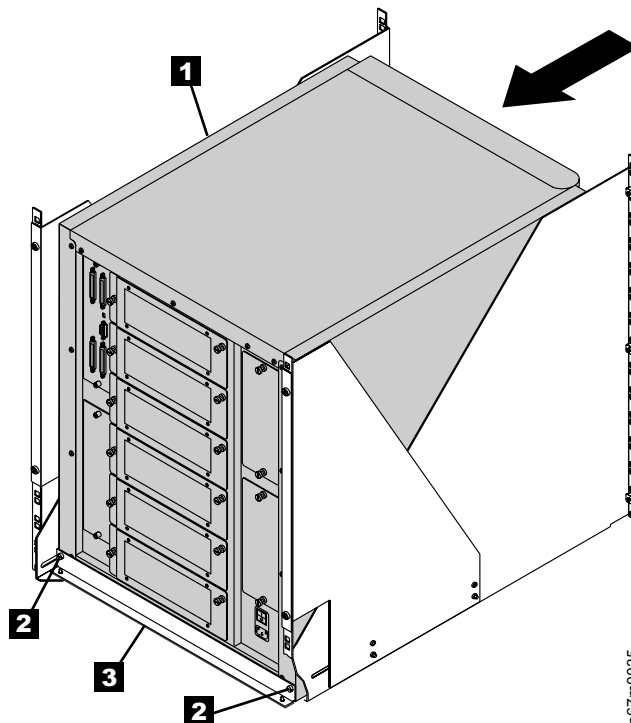

Figure 161. Placing the Tape Library Into a Rack

10. Install the drive sleds that you previously removed. Make sure that you place the drive sleds in the same positions they were originally in.
   a. From the rear of the 7337 Tape Library, locate the drive slot where the drive sled will be installed.
   b. Slide the tape drive sled **2** into position and tighten the two captive thumbscrews **1** (see Figure 162).
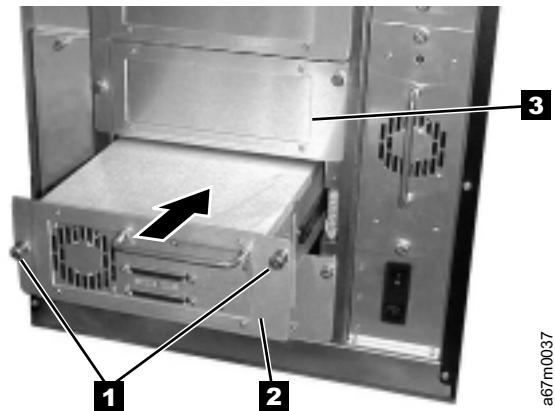

Figure 162. Installing a Drive Sled

11. Install the dc power modules that you previously removed.

   DANGER

   Up to 240 V ac is present at the power module connectors when the main power cord is connected to a power source. (RSFTD010)

   a. From the rear of the library, locate the slot where the dc power module will be installed.

      Note: Before inserting the dc power module, be sure to orient the power module so that the LED **3** is located as shown in Figure 163 on page 128.

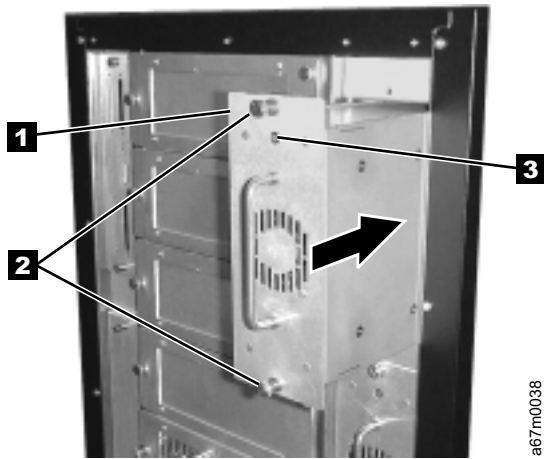   b. Slide the dc power module **1** into position and tighten the two captive thumbscrews **2** .

Figure 163. Installing a dc Power Module

12. Reinstall any magazines and cartridges that you previously removed.
13. Go to "Step 3. Installing Optional Features" on page 17.

Appendix A. Power Cords

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

Table 13 lists the power cord part number, feature code, the country where the power cord can be used, and the plug standards reference. The last column in the table contains an index number that you can match to a specific receptacle type in Figure 164 on page 131. These power cords are only available at the time of initial purchase or as a field replaceable unit (FRU) part from your IBM Service Representative.

All power cords use an appliance coupler that complies with the International Electrotechnical Commission (IEC) Standard 320, Sheet C13.

If the power cord that you receive does not match your receptacle, contact your local dealer.

Power cords used in the United States and Canada are listed by Underwriter's Laboratories (UL), are certified by the Canadian Standards Association (CSA), and comply with the plug standards of the National Electrical Manufacturers Association (NEMA). For other worldwide geographies, plug standards are listed in Table 13.

Power Cable Information

Table 13. Power Cable Information

Description, Feature Code (FC), and Part Number (PN)	Plug Standard Reference	Country	Index Number in Figure 164 on page 131
US/Canada 2.8 m, 125V FC 9800 PN 6952300	NEMA 5-15P	Bolivia, Brazil, Canada, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Japan, Mexico, Nicaragua, Panama, Peru, Philippines, Saudi Arabia, Taiwan, Thailand, Venezuela, US	1
Chicago 1.8 m, 125 V FC 9986 PN 6952301	NEMA 5-15P	Chicago, U.S.A.	1
US/Canada 2.8 m, 250 V FC 9833 PN 1838574	NEMA 6-15P	Bolivia, Brazil, Canada, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Japan, Mexico, Nicaragua, Panama, Peru, Philippines, Saudi Arabia, Taiwan, Thailand, Venezuela, US	2
Australia 2.8 m, 250V FC 9831 PN 13F9940	AS/NZSC112	Australia, New Zealand	3

Table 13. Power Cable Information (continued)

Description, Feature Code (FC), and Part Number (PN)	Plug Standard Reference	Country	Index Number in Figure 164 on page 131
France 2.8 m, 250V FC 9820 PN 13F9979	CEE 7 - VII	Albania, Algeria, Andorra, Angola, Armenia, Austria, Azerbadjian, Belarus, Belgium, Benin, Bosnia, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo (Republic of), Congo (Democratic Republic of), Croatia, Czech Republic, Djibouti, Egypt, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Finland, France, French Guyana, French Polynesia, Gabon, Georgia, Germany, Greece, Guadeloupe, Guinea, Guinea Bissau, Hungary, Iceland, Indonesia, Iran, Ivory Coast, Kazakhstan, Korea, Kyrgyzstan, Latvia, Lebanon, Lithuania, Luxumbourg, Macedonia, Madagascar, Mali, Martinique, Mauritania, Mauritius, Mayotte, Moldavia, Monaco, Morocco, Mozambique, Netherlands, New Caledonia, Niger, Norway, Poland, Portugal, Reunion, Romania, Russia, Rwanda, Sao Tome, Senegal, Serbia, Slovakia, Slovenia, Somalia, Spain, Sweden, Syria, Tajikistan, Togo, Tunisia, Turkey, Turkmenistan, Ukraine, Uzbekistan, Vanuatu, Wallis and Futana, Vietnam	4
Denmark 2.8 m, 250V FC 9821 PN 13F9997	DK2-5a	Denmark	5
South Africa 2.8 m, 250V FC 9829 PN 14F0015	SABS 164	India, Lesotho, Nambia, Pakistan, South Africa, Sri Lanka, Swaziland, Uganda	6
United Kingdom 2.8 m, 250V FC 9825 PN 14F0033	BS 1363/A	Bahrain, Botswana, Cyprus, Gambia, Ghana, Hong Kong, Ireland, Jordan, Kenya, Kuwait, Liberia, Malaysia, Malawi, Malta, Nigeria, Oman, Quatar, Seychelles, Sierra Leone, Singapore, Sudan, Tanzania, UK, United Arab Emirate (Dubai), Yemen, Zambia, Zimbabwe	7
Switzerland 2.8 m, 250V FC 9828 PN 14F0051	1011-S24507	Liechtenstein, Switzerland	8
Italy 2.8 m, 250V FC 9830 PN 14F0069	CEI 23- 16	Chile, Italy	9

Table 13. Power Cable Information (continued)

Description, Feature Code (FC), and Part Number (PN)	Plug Standard Reference	Country	Index Number in Figure 164
Israel 2.8 m, 250V FC 9827 PN 14F0087	SI 32	Israel	10
Uruguay 2.8 m, 250V FC 9834 PN 36L8880	IRSM 2073	Argentina, Paraguay, Uruguay	11
China 2.8 m, 250V No feature code PN 02K0546	GB 2099.1	People's Republic of China	12

Types of Receptacles

Figure 164 shows the receptacles that are used by the power cables in Table 13 on page 129. Match the index number that is beside each receptacle to the index number in the table.
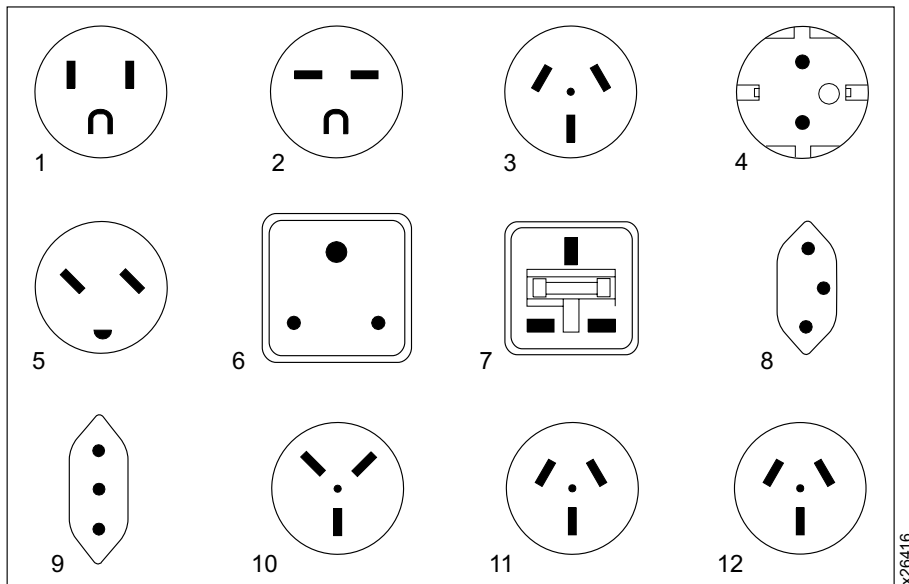

Figure 164. Types of Receptacles

Appendix B. Troubleshooting

This appendix provides troubleshooting information for the library. It provides a list of suggestions for solving problems that may occur when you are installing and operating the library and the enclosed tape drives.

Note: **Before attempting to correct a problem or before contacting a service representative, check the LCD on the front of the library to see if an error code is displayed.** If an error code is displayed on the LCD, refer to "Appendix F. Error Messages" on page 145 for a description of its meaning and possible corrective action. Many errors can be corrected by resetting the library or individual drives. Refer to "Reset Dialog" on page 71 for information on resetting the individual drives.

If you are experiencing problems with your 7337 Tape Library, check the items in this section before contacting a service representative:

Loss of Power

Check the items in the following list if your library appears to have lost power:

1. **Power Switch.** Is the power switch in the on position? The switch may have been bumped or accidentally forgotten during your system preparation. Ensure that the library is turned on.

   Note: If your library is mounted in a rack or plugged into a Uninterruptable Power Supply (UPS) or power surge protector, there may also be a power switch on the device into which the library is plugged. Ensure all power switches are in the on position.

2. **Power Cord.** Is the power cord securely plugged into the library and the electrical outlet? A loose power cord connection could cause a loss of power to the library. Ensure that the power cord is securely connected to both the library and the electrical outlet.

3. **Electrical Outlet.** Is there power to the outlet into which the library is plugged? Ensure that the electrical circuits to which the library is connected have not been interrupted (Check circuit breakers or fuses).

   Note: If your library is mounted in a rack or plugged into a Uninterruptable Power Supply (UPS) or power surge protector, ensure the device is properly connected and working properly.

Problems with the Library Installation

If your library and application software are not communicating after installation and configuration, check the following:

- **SCSI IDs.** Make sure that the SCSI IDs you selected for the tape drives and library are not the same as the ID used by any other SCSI device on that bus, including the SCSI adapter card. Refer to "Step 9. Setting the SCSI Address" on page 24 for information about setting the SCSI IDs.
- **SCSI bus connections.** Make sure that you have connected the SCSI cables to the appropriate SCSI connectors on the back of the library. See "Step 5. Connecting the SCSI Bus Cables" on page 18 for more information.

- **SCSI cabling.** Make sure that all SCSI cables are securely connected at both ends.
- **LVD SCSI device.** The library is a Low Voltage Differential (LVD) device. The SCSI bus to which the library is connected must be LVD. IBM only supports the SCSI connection when the 7337 Tape Library is the only device on the bus.
- **SCSI cable lengths.** Make sure the SCSI cabling does not exceed the maximum length of 12 meters.
- **Termination .** Make sure your bus is properly terminated as described in "Step 5. Connecting the SCSI Bus Cables" on page 18. If another SCSI device previously terminated the SCSI bus and is no longer at the physical end of the bus, be sure to remove the terminators from that device.
- **Compatibility.** Make sure that your tape drive and library are compatible with the SCSI adapter card and application software.
- **SCSI adapter card installation.** Make sure that you installed your SCSI adapter card correctly. Refer to the documentation that came with your card for installation and troubleshooting instructions. Pay special attention to steps describing setting various jumpers and switches on the card. Make sure that the card is properly seated.
- **Software installation.** Make sure that your application software is installed correctly. Refer to the documentation that came with your software. Pay special attention to steps describing configuring the software for use with the library and tape drives.

Problems with Library Operation

If the library is not operating correctly, check the following items to attempt to correct the problem:

- **Cartridge placement.** Ensure the tape cartridges are loaded in the magazine slots correctly. Cartridges placed in the slots upside down can obstruct the robotic cartridge handling mechanism and stop its movement.
- **Robot.** Ensure that the robotic cartridge handling mechanism (robot) is not obstructed. If an obstruction is present, the robot will stop functioning and the library will unlock the door.
- **Fans.** Are the library fans operating and is there enough clearance around the library to allow sufficient air flow through the library? If sufficient air cannot flow through the library, the temperature will rise above accepted levels and cause the malfunction or shutdown of the library or tape drives. Ensure adequate clearance exists between the rear of the library and other objects (walls, electrical devices).
- **Barcode Labels.** Make sure each tape cartridge has the correct barcode label. If the library touch scan feature has been disabled, the robot will not detect the presence of a cartridge that does not have a proper barcode label attached. See "Config Dialog" on page 78 for more information on configuring the cartridge recognition features.

Problems with Tape Drive Operation

If you have been successfully operating the application software and library in the past, but are now experiencing problems reading and writing data, check the following:

- **Write-protect switch .** If you are writing data, make sure the cartridge is write enabled (see "Chapter 2. Setting Up the 7337 Tape Library" on page 13).

- **Cartridge type.** Use the correct DLT media (see "Chapter 6. Using the Media" on page 103). Do not use other types of cartridges in the library.

- **Cartridge age.** If the cartridge has been in use for a long time or if it has been used frequently, try using a new cartridge.

- **Cleaning.** Clean the tape drive, making sure you are using the correct, IBM Cleaning cartridge.
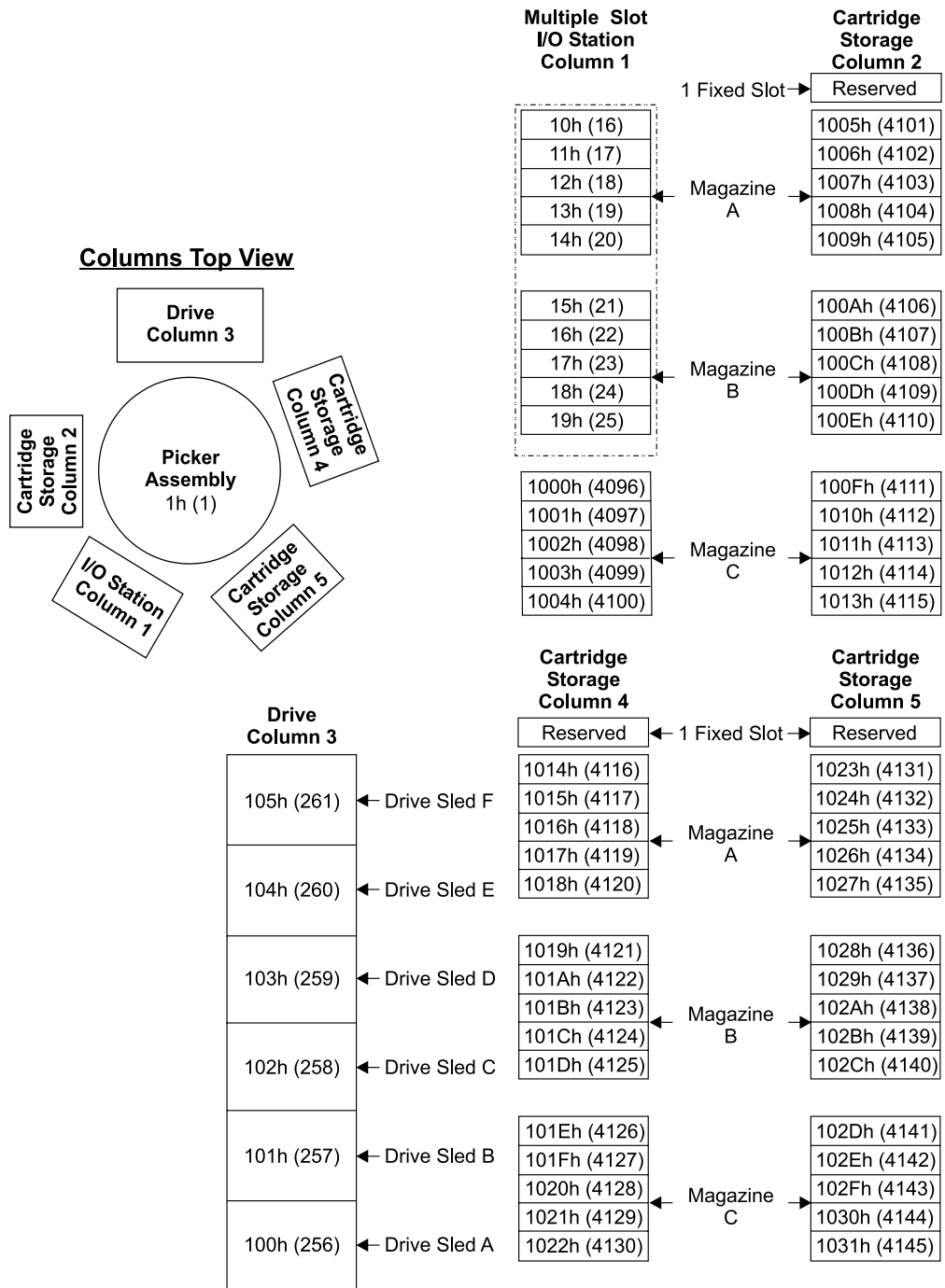
Appendix C. Element Addressing

Figure 165 shows the element addressing for the 7337 Tape Library with a single slot I/O station.
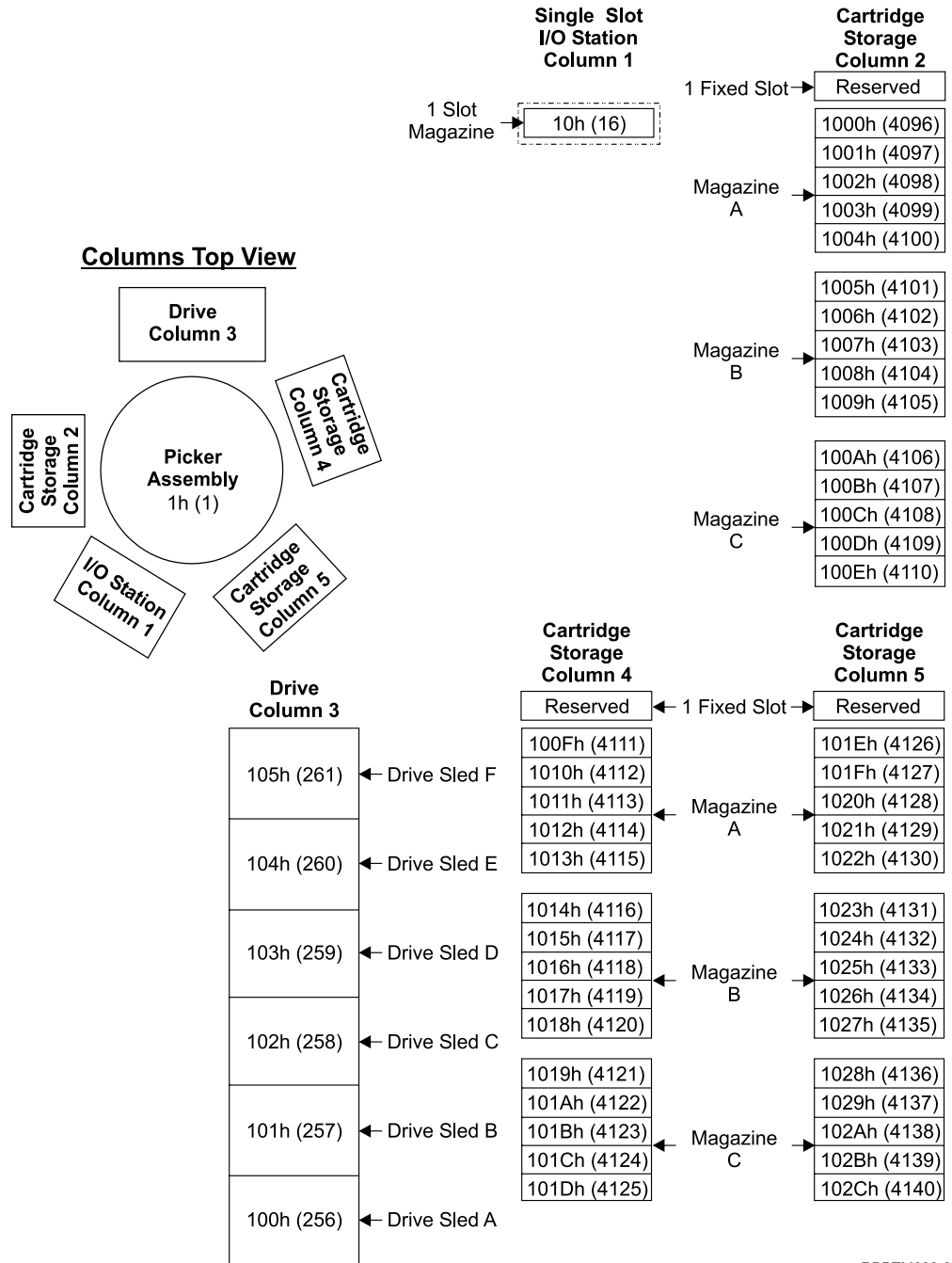
Figure 165. Element Addresses for a Library with a Single Slot I/O Station.

Figure 166 shows the element addressing for the 7337 Tape Library with a multiple slot I/O station configured as I/O.
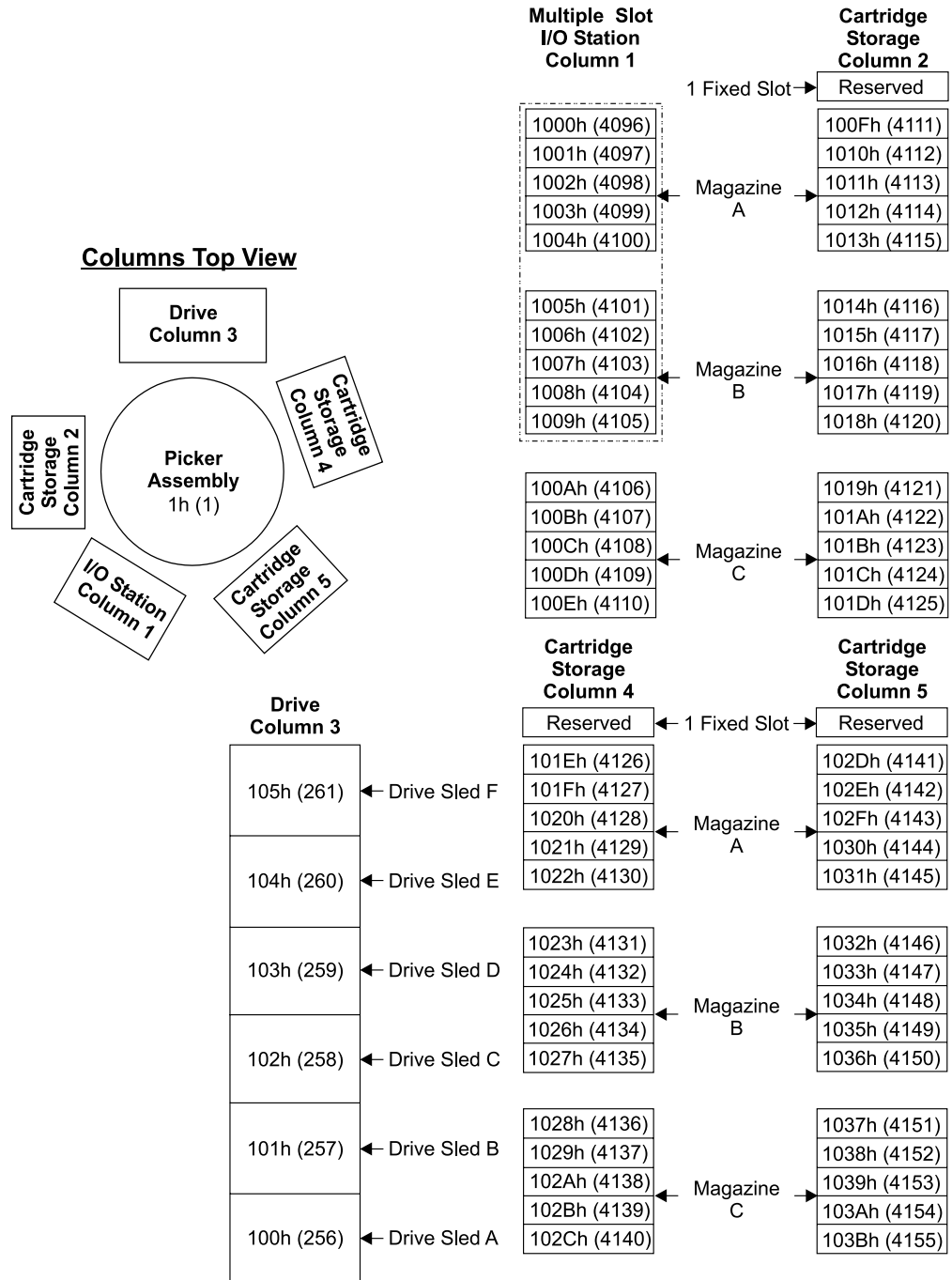

Figure 166. Element Addresses for a Library with a Multiple Slot I/O Station.

RBBTM634-1

Figure 167 shows the element addressing for the 7337 Tape Library with a multiple slot I/O station configured as storage.

Figure 167. Element Addresses for a Library with a Multiple Slot I/O Station Configured as Storage.

Appendix D. SCSI Commands

This appendix lists SCSI commands that are supported by the 7337 Tape Library and the tape drive.

Library SCSI Commands

The 7337 Tape Library supports the following list of SCSI media changer commands.

Command Name	Operation Code
INITIALIZE ELEMENT STATUS	07h
INITIALIZE ELEMENT STATUS WITH RANGE	E7h
INQUIRY	12h
LOG SENSE	4Dh
MODE SENSE	1Ah
MOVE MEDIA	A5h
POSITION TO ELEMENT	2Bh
PREVENT/ALLOW MEDIUM REMOVAL	1Eh
READ BUFFER	3Ch
READ ELEMENT STATUS	B8h
RELEASE	17h
REQUEST SENSE	03h
RESERVE	16h
TEST UNIT READY	00h
WRITE BUFFER	3Bh

Tape Drive SCSI Commands

The IBM DLT8000 tape drive supports the following list of SCSI commands.

Command Name	Operation Code
ERASE	19h
INQUIRY	12h
LOAD UNLOAD	1Bh
LOCATE	2Bh
LOG SELECT	4Ch
LOG SENSE	4Dh
MODE SELECT (6)	15h
MODE SENSE (6)	1Ah
MODE SENSE (10)	5Ah
PREVENT ALLOW MEDIUM REMOVAL	1Eh
READ	08h
READ BLOCK LIMITS	05h
READ BUFFER	3Ch
READ POSITION	34h

Command Name	Operation Code
RECEIVE DIAGNOSTIC RESULTS	1Ch
RELEASE UNIT (6)	17h
REQUEST SENSE	03h
RESERVE UNIT (6)	16h
REWIND	01h
SEND DIAGNOSTIC	1Dh
SPACE	11h
TEST UNIT READY	00h
VERIFY	13h
WRITE	0Ah
WRITE BUFFER	3Bh
WRITE FILEMARKS	10h

Appendix E. Barcode Label Specifications

The 7337 Model 360 Tape Library may be configured to utilize external tape cartridge labels that are operator and machine readable. The purpose of each label is to identify the volume serial number. The external label may contain up to 13 characters for the volser (volume serial number). Valid characters for the label include uppercase letters A through Z and numerics 0 through 9. The 7337 Tape Library supports barcode 3-of-9 code format labels. This appendix provides specifications for creating bar code labels for use on cartridges in a 7337 Tape Library.

Note: For information about configuring the library to use the barcode labels, refer to "Config Dialog" on page 78. The library is shipped with the barcode utility enabled.

Label Specifications

The cartridge barcode labels must meet the following requirements:

ANSI MH10.8M-1983 Standard

Number of digits:	6 - 13
Background reflection:	≥25%
Print contrast:	≥ 75%
Ratio:	at least 2.2
Module:	250mm
Print tolerance:	± 57mm

Additional Requirements

- Label stock color: White
- Barcode color: Black
- Barcode height: 1/2″
- Label Finish: Matte
- No black marks present in the intermediate spaces or rest zones
- No white areas present in the bars

Use the dimensions shown in Figure 168 on page 144. The dimensions listed are in inches.
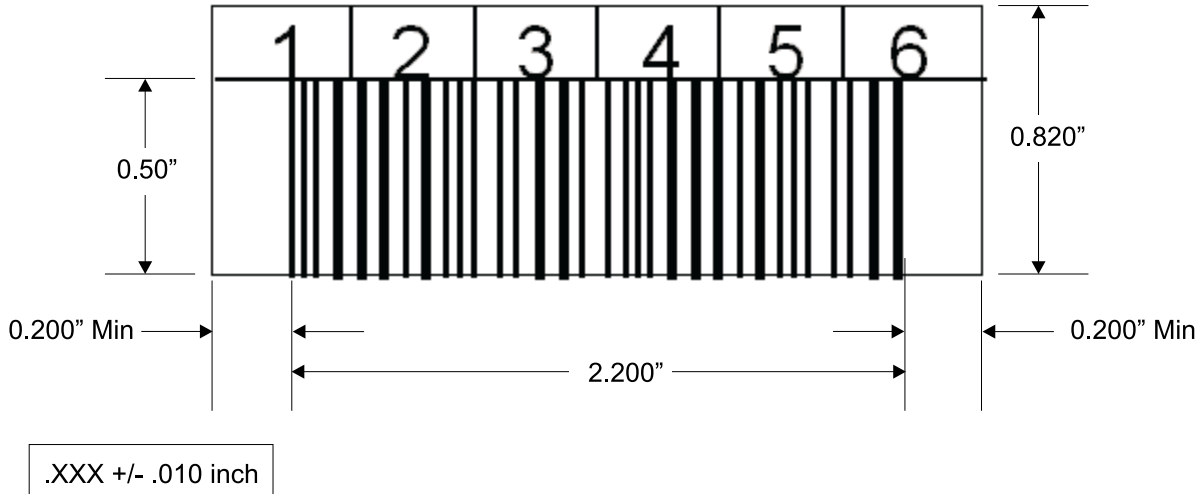
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Figure 168. Barcode Label Dimensions

Purchasing Barcode Labels

For information about purchasing additional barcode labels, refer to the label re-order information. This information was provided with the sample cartridge barcode labels shipped with the 7337 Model 360 Tape Library.

Appendix F. Error Messages

When a failure occurs, the 7337 Tape Library firmware performs error recovery and reporting. If the failure requires service, Service Action Codes (SACs) are generated and posted to the operator panel. When an operator intervention is required, a message is generated at the operator panel. **Refer to the** *7337 Model 360 Digital Linear Tape Library Service Guide*, **SY44–0078 for a description of Service Action Codes, operator intervention messages, and parameters.**

Additionally, information messages that relate to the current operation are posted to the operator panel (see "Operator Information Messages").

Operator Information Messages

Table 14 describes the operator information messages.

Table 14. Operator Information Messages

Message Lines	Variables
INITIALIZING	None
OFFLINE	None
ONLINE	None
HOMING PICKER	None
TEACHING COLUMN [%X]	%X = column number
SCANNING COLUMN [%X]	%X = column number
INITIALIZING DRIVES	None
GOING READY	None
DOOR IS OPEN	None
PICKER HOME FAIL	None
PICKER NOT HOME	None
GOING ONLINE	None
GOING OFFLINE	None
–=>ERROR!<=-	None
REBOOTING	None
CARTRIDGE RECOVERY	None
CARTRIDGE IN PICKER	None
SELF TEST FAILED	None

Drive Error Codes

Errors and informational messages that pertain to the tape drive are shown in the drive status area of the operator panel. Table 15 describes the codes that display.

Table 15. Drive Error Codes.

If the code is this....	It means this....
0	No error. This code displays: • When power is cycled (turned off, then on) to the tape drive. • When diagnostics have finished running and no error occurred. **Note:** The single-character display is blank during normal operation of the Tape Drive.
1	Cooling problem. The tape drive detected that it exceeded the recommended operating temperature. Take action to reduce the operating temperature.
2	Power problem. The tape drive detected that the externally supplied power is either approaching the specified voltage limits (the drive is still operating) or is outside the specified voltage limits (the drive is not operating). If unable to resolve the problem, contact your IBM Service Representative.
3	Firmware problem. The tape drive determined that a firmware error occurred. Ensure that the drive has the latest level firmware installed. If unable to resolve the problem, contact your IBM Service Representative.
4	Firmware or tape drive problem. The tape drive determined that a firmware or tape drive hardware failure occurred. Ensure that the drive has the latest level firmware installed. If unable to resolve the problem, contact your IBM Service Representative.
5	Tape drive problem. The drive determined that a tape drive hardware failure occurred. If unable to resolve the problem, contact your IBM Service Representative.
6	Tape drive or media error. The drive determined that an error occurred, but it cannot isolate the error to faulty hardware or to the tape cartridge. Retry the operation with a new cartridge. If unable to resolve the error, contact your IBM Service Representative.
7	Media error. The tape drive determined that an error occurred because of a faulty tape cartridge. Retry the operation with a new cartridge. If unable to resolve the error, contact your IBM Service Representative.
8	Tape drive or SCSI bus error. The tape drive determined that a failure occurred in the tape drive hardware or in the SCSI bus.
9	Tape drive or RS-422 error. The tape drive determined that a failure occurred in the tape drive hardware or in the RS-422 connection. If unable to resolve the error, contact your IBM Service Representative.
A, E, F, o, c, b, d, or h	No error or message assigned. There may be a problem with the single-character display.
B	No error or message assigned.
C	The tape drive needs to be cleaned.
D	No error or message assigned.
...	Tape drive POST error, or unknown error. Reset the drive. If unable to resolve the error, contact your IBM Service Representative.

TapeAlert Flags Supported by the Library

TapeAlert Flags Supported by the 7337 Tape Library			
Flag Number	**Flag**	**Description**	**Action Required**
1	Library hardware A	The library has trouble communicating with the drive.	1. Power off the library and then power it on again. 2. Retry the operation. 3. If the problem persists, contact your IBM Service Representative.
2	Library hardware B	The library has a hardware failure.	1. Power off the library and then power it on again. 2. Retry the operation. 3. If the problem persists, contact your IBM Service Representative.
3	Library hardware C	The library has a hardware fault that requires a reset to recover.	1. Power off the library and then power it on again. 2. Retry the operation. 3. If the problem persists, contact your IBM Service Representative.
4	Library hardware D	The library has a hardware fault that is not mechanically related.	1. Power off the library and then power it on again. 2. Retry the operation. 3. If the problem persists, contact your IBM Service Representative.
7	Predictive failure	Predictive failure of library hardware.	Contact your IBM Service Representative.
8	Library maintenance	Library Preventive Maintenance required.	Contact your IBM Service Representative.
13	Library pick retry	The operation to pick a cartridge had to perform an excessive number of retries before succeeding.	1. No action needs to be taken at this time. 2. If the problem persists, contact your IBM Service Representative.
14	Library place retry	The operation to place a cartridge had to perform an excessive number of retries before succeeding.	1. No action needs to be taken at this time. 2. If the problem persists, contact your IBM Service Representative.
15	Library load retry	The operation to load a cartridge into a drive had to perform an excessive number of retries before succeeding.	1. No action needs to be taken at this time. 2. If the problem persists, contact your IBM Service Representative.
16	Library door	A library door is open and prevents the library from functioning.	1. Close the library door. 2. If the problem persists, contact your IBM Service Representative.

TapeAlert Flags Supported by the 7337 Tape Library			
Flag Number	Flag	Description	Action Required
17	Library I/O station	A problem with the I/O station exists.	1. Ensure that there is no obstruction in the I/O station. 2. Restart the operation. 3. If the problem persists, contact your IBM Service Representative.
19	Library security	Library door opened then closed during operation.	Library security has been compromised. Perform a library inventory.
20	Library security mode	Library security mode changed.	The security mode of the library has been changed. For information purposes only. No action required.
21	Library offline	Library manually set offline.	The library has been manually set offline and is unavailable for use. Set the library online.
23	Library scan retry	The operation to scan the bar code on a cartridge had to perform an excessive number of retries before succeeding. A potential problem exists with the bar code label or the scanner hardware in the library mechanism.	1. Check for damaged, misaligned, or peeling bar code labels on cartridges. 2. Try using a new label on the cartridges. 3. If the problem persists, contact your IBM Service Representative.
24	Library inventory	An inventory of the media was inconsistent.	1. Run a library inventory to correct the inconsistency. 2. Restart the operation. 3. If the problem persists, contact your IBM Service Representative.
25	Library illegal operation	The library detected an illegal operation.	If the problem persists, contact your IBM Service Representative.
28	Power supply	A redundant power supply failure exists inside the library.	If the problem persists, contact your IBM Service Representative.
32	Unreadable bar code label	During an inventory or scan, the library was unable to read a bar code label on a cartridge.	1. Check for damaged, misaligned, or peeling bar code labels on the cartridge. 2. Try using a new cartridge on the label. 3. If no problem is found, contact your IBM Service Representative.

Readers' Comments — We'd Like to Hear from You

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7337 Model 360 Digital Linear Tape Library
Setup and Operator Guide

Publication No. SA41-0051-01

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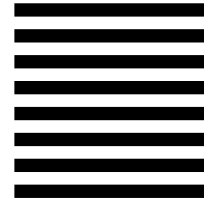
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