TL895 DLT Library

Operator’s Guide

EK-TL895-OG

Revision A01

EK-TL895-OG, Revision A01, February 13, 1998, Made in USA.

FCC STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Any changes or modifications made to this equipment may void the user's authority to operate this equipment.

Operation of this equipment in a residential area may cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

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

INDUSTRY CANADA (DIGITAL APPARATUS)
Interference-Causing Equipment Standard
ICES-003 Issue 2

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

Cet appareil numérique de la classe A respecte toutes les exigences du Reglément sur le materiel brouilleur du Canada.

Achtung!

Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten, in welchen Fällen der Benutzer für entsprechende Gegenmassnahmen verantwortlich ist.

Attention!

Ceci est un produit de classe A. Dans un environment domestique, ce produit peut causer des interférences radioélectriques. Il appartient alors à l'utilisateur de prendre les mesures appropriées.

NOTICE FOR USA AND CANADA ONLY

If shipped to USA, use the UL LISTED power cord specified below for 100-120 V operation. If shipped to CANADA, use the CSA CERTIFIED power cord specified below for 100-120V operation.

Plug Cap	Parallel blade with ground pin (NEMA 5-15P configuration)
Cord	Type: SJT, three 16 or 18 AWG wires
Length	Maximum 15 feet
Rating	Minimum 10 A, 125 V

ATTENTION

LIRE LA REMARQUE DANS LE MODE D'EMPLOI

REMARQUE

CETTE REMARQUE NE CONCERNE QUE LES ÉTATS-UNIS ET LE CANADA.

En cas d'envoi aux États-Unis, utiliser le cordon d'alimentation certifié UL et convenant pour 100-120V.

En cas d'envoi au Canada, utiliser le cordon d'alimentation certifié CSA et convenant pour 100-120V.

Fiche	Broches parallèles avec une broche de mise à la terre (configuration NEMA 5-15P)
Cordon	Type: SJT, trifilaire 16 ou 18 AWG
Longeur	Maximum 15 pieds
Capacité	Minimum 10 A, 125 V

ZU IHRER SICHERHEIT

Vorsicht

Um Feuergefahr und die Gefahr eines elektrischen Schlages zu vermeiden. Darf das Gerät weder Regen noch Feuchtigkeit ausgesetzt werden.

Um einen elektrischen Schlag zu vormeiden, darf das Gehäuse nicht geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur einem Fachmann.

Achtung

Da der interne Laserstrahl in lhre Augen eindringen und Verletzungen verursachen kann, darf das Gehäuse nicht selbst geöffnet werden. Überlassen Sie Wartungearbeiten stets nur einem Fachmann.

Die Verwendung von Brillen, Kontaktlinsen usw.vergrössert die Gefahr.

Zur besonderen Beachtung

Zur Sicherheit

Sollte ein fester Gegenstand oder Flüssigkeit in das Geräteinnere gelangen, trennen Sie das Gerät von der Wandsteckdose ab und lassen Sie es von einem Fachmann überprufen, bevor Sie es weiter verwenden.

Zum Abziehen des Kabels fassen Sie stets am Stecker und niemals am Kabel selbst an.

Zur Aufstellung

Stellen Sie das Gerät weder auf einer weichen Unterlage (z. B. Decke, Teppich) noch in der Nahe von Vorhangen, Tapeten usw, auf, da hierdurch die Ventilationsöffnungen blockiert werden können.

Zur Reiningung

Verwenden Sie zur Reiningung des Gehäuses, des Bedienungspultes und der Bedienungselemente ein trockenes, weiches Tuch oder ein weiches, leicht mit mildem Haushaltsreiniger angefeuchtetes Tuch. Lösemittel wie Alkohol oder Benzin dürfen nicht verwendet werden, da diese die Gehäuseoberfläche ungreifen.

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Preface

This preface contains the following sections:

- About This Guide
- Conventions Used in This Guide
- Related Documentation
- On-line Documentation
- Replacement Bar Code Labels

About This Guide

Overview

The *TL895 Library Operator's Guide* is written for operators of the TL895 library to provide them with configuration procedures, operating instructions, and basic troubleshooting information.

Chapter Summary

This guide consists of five chapters:

- Chapter 1, "Library Overview," contains a brief description of the library and detailed discussions of the operator-accessible components.
- Chapter 2, "Basic Operation," gives a brief overview of the control panel and explains procedures for turning the library on or off, placing the library off-line or on-line, inserting and removing tapes using the load port, and manually unloading a tape drive.
- Chapter 3, "Operator-Level Commands," describes the commands in the operator section of the GUI control panel, which enable you to configure, calibrate, inventory, and exercise the library.
- Chapter 4, "Service-Level Commands," describes the commands in the service section of the control panel, which enable you to test the library, change passwords, and initialize nonvolatile memory.
- Chapter 5, "Troubleshooting," provides a list of common problems with the library and likely solutions.

Note: This manual does not contain information on how to use the host software that controls the library.

Conventions Used in this Guide

Notes

Notes provide information related to the main topic that require special emphasis. A sample note follows:

Note: This is an example of a note.

Warnings and Cautions

Warnings and cautions provide important safety information. Sample warning and caution statements follow:

Warning: Warning paragraphs describe potential hazards to personal safety and provide instructions to prevent injury.

Caution: Caution paragraphs describe potential hazards to equipment or data and provide instructions to prevent damage.

References to Right and Left

References to the left or right side or panel of the library correspond to your left or right as you face the front of the library. Other references to left or right refer to your left or right as you face the component.

Related Documentation

Ordering Information

This section lists other technical documents that describe an aspect of TL895 library operation or maintenance. To obtain copies of this documentation or further information about the TL895 library, contact:

U.S. Software Supply Business
Digital Equipment Corporation
10 Cotton Road
Nashua, NH 03063-1260

The part number of each document is required at the time of order.

Document Number	Title	Description
EK-TL895-IG	*TL895 Tape DLT Library Facilities Planning and Installation Guide*	Describes facility preparation and provides the procedures for first-time installation of the library.
6241103	*ATL 7100 Series Library Field Service Manual*	Contains periodic maintenance, fault isolation and removal/replacement procedures.
EK-TL895-UM	*TL895 Tape DLT Library Diagnostic Software User's Manual*	Provides procedures for installing and using the TL895 Diagnostic Software.
6241105	*ATL 7100 Series Library Software Interface Guide*	Provides guidelines for software engineers and programmers who develop applications to control the ATL 7100 Series library.
EK-TZ89N-UG	*DLT Series Tape Drive User's Guide*	Describes the TZ89N tape drive and provides operating instructions and troubleshooting procedures.

On-Line Documentation

Digital Equipment Corporation Intranet

If you have access to the Digital Intranet, you can obtain copies of the tape library and tape drive manuals that are available in PDF format. In addition, the latest firmware utility software, product information, and a list of technical contacts are also available. You can reach the Digital Equipment Corporation (Shrewbury, MA) web site 24 hours a day, seven days a week, on the Digital Intranet by accessing either of the following URLs:

http://alcor.shr.dec.com/tapes.htm
http://whatsa.shr.dec.com

ATL Products Internet Site

For tape library manuals not available on the Digital Equipment Corporation Intranet, you can access the ATL Products Internet site at:

http://www.atlp.com

Replacement Bar Code Labels

Ordering Information

To order custom DLT cartridge bar code labels for ATL-based tape libraries, contact:

Lowry Malprint
1607 9th Street
White Bear Lake, MN 55110
(800) 429-7722 or (612) 429-7722
(612) 653-4803

Standard part numbers are:

Part No.	Qty	Label Type	Description
6210201-0199	9	DLT labels	Multiple colors
6210201-02264	24	DLT labels	Multiple colors
6210201-0333	3	Cleaning DLT labels	White with black print

Specifications

When ordering, please specify:

- The three alpha characters for the set of labels. The three numeric characters that follow will be incremented starting with 000.
- The background colors used in the bar code label. In the default bar code label:
  - The background color for the alpha characters is yellow.
  - The background color for the numeric characters is red.
  - The background color for the black 3 of 9 bar code is white.

Note: Other colors may be available upon request.

Chapter 1

Library Description

This chapter describes the TL895 tape library and each operator-accessible components. The chapter consists of these sections:

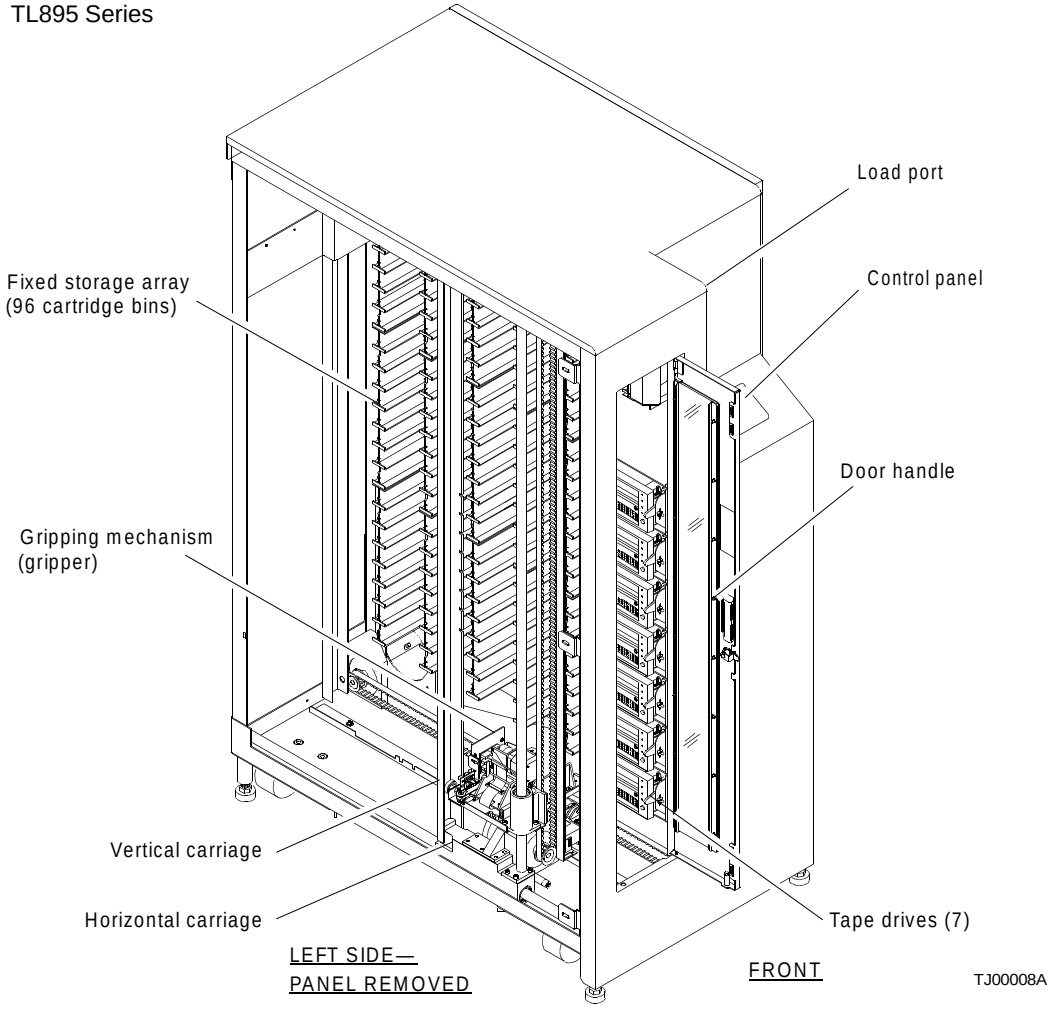
- Library Capacity and Elements
- Front Panel
- Library Doors
- Back Panel
- Tape Drive Status/Control Panel

Library Capacity and Elements

Overview

The TL895 (figure 1-1) is an automated digital linear tape (DLT™) library consisting of five to seven TZ89 tape drives and 100 tape cartridge bins (96 storage bins and 4 load port bins). The maximum storage capacity of the library is 3500 GB (7000 GB compressed), based on 100 TZ89 cartridges at 35 GB each (70 GB compressed).

Figure 1-1 TL895 Series Library



Supported Tape Cartridges

The TL895 supports CompacTape III™, CompacTape IIIXT™, and CompacTape IV™ cartridges.

Caution: Do not use CompacTape I™ or CompacTape II™ cartridges.

Library Elements

Host computers communicate with the library through a SCSI interface using the SCSI-2 medium changer command set. SCSI commands control the following library elements:

- data transfer elements (tape drives)
- import/export elements (load port bins)
- media transport element (gripper and other robotic axes)
- storage elements (storage bins)

In a typical operation, a host commands the library to move a tape cartridge from one library element to another. The library carries out the command by causing the gripper to *pick* the desired tape cartridge from a source element and then to *place* the cartridge in the destination element.

Element Numbering

Figure 1-2 shows the storage bin, load port bin, and tape drive numbering conventions used by the library control panel and the diagnostic software program for the 100-cartridge library.

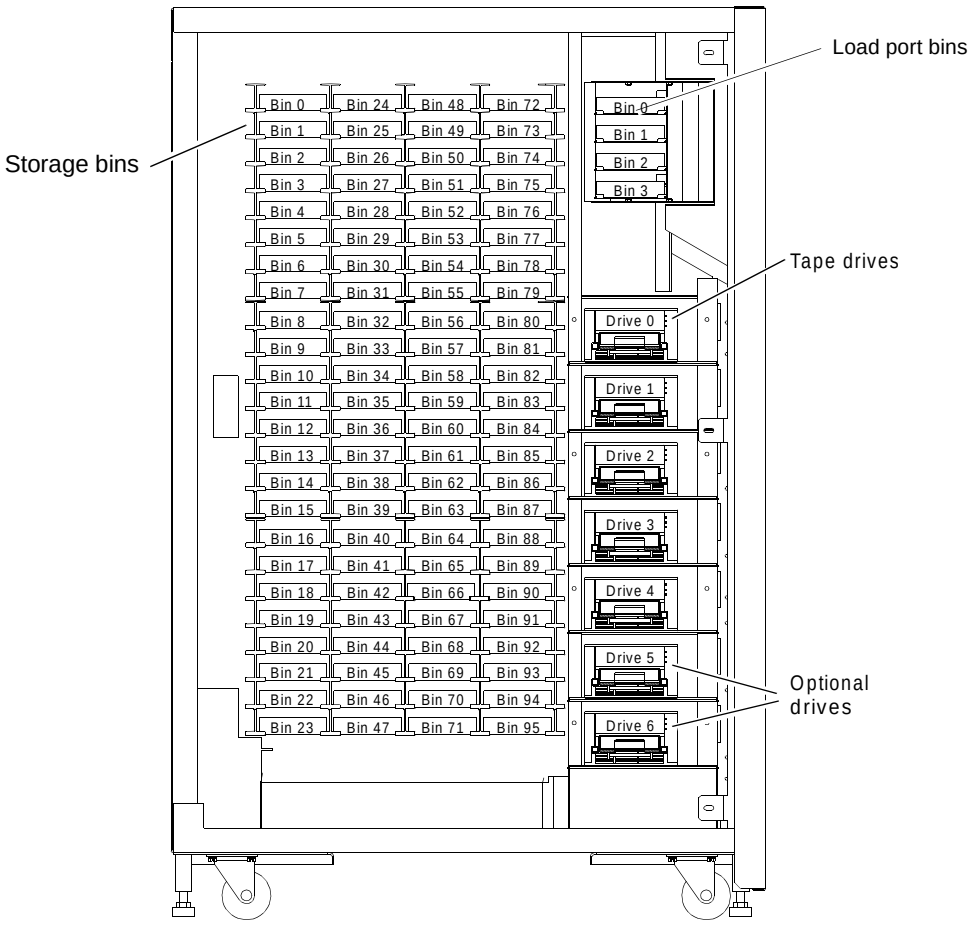


Figure 1-2 Library Numbering Conventions

Front Panel

Overview

The front panel of the library has two main components:

- control panel
- load port

Control Panel

The control panel (see figure 1-3) is located on the right side of the front panel. Its features are described in table 1-1.

Figure 1-3 GUI Control Panel

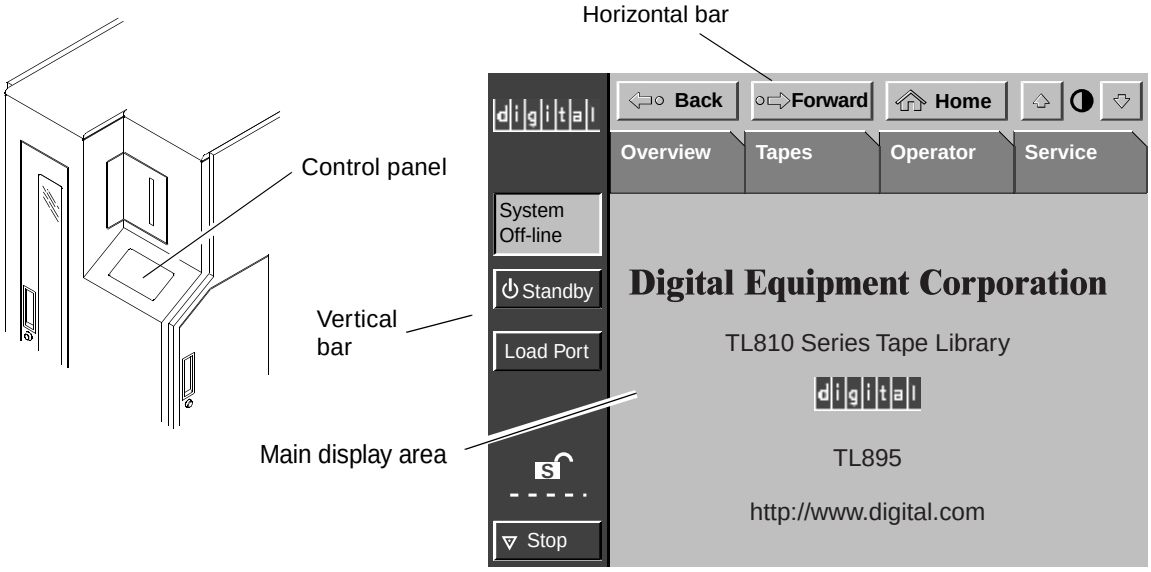


Table 1-1 GUI Control Panel Functions

Area	Feature	Function
Horizontal bar	Back button	This button moves you backwards screen-by-screen through previous menu selections.
	Forward button	This button moves you forward screen-by-screen through previous menu selections.
	Home button	This button returns you to the initial control panel screen.
	Contrast buttons	These buttons adjust the contrast of the control panel screen.
Vertical bar	Company logo	Pressing this area causes an company information screen to appear.
	System state display	This display shows the current state of the library and displays important messages relating to library operation.
	Standby button	This button switches the library between on-line and off-line status.
	Load Port button	If the load port is locked in the closed position, this button unlocks and opens the load port, and then locks in the open position. If the load port is locked in the open position, this button unlocks the load port, allowing you to push the load port all the way to the left to close and lock it.
	Security level indicator (lock icon)	The security level indicator shows the current security level available at the control panel. There are three security levels: user (U), operator (O), and service (S). Table 1-2 describes the attributes of each security level.
	Stop button	This button halts all library activity (upon completion of the current command) by cutting power to library robotics. Pressing the Stop button again restores power to library robotics.
Main display area	Overview screen	This screen displays current tape drive, gripper, and load port content and activities.
	Tapes screen	This screen displays tape drive, storage bin, load port, and gripper inventories.
	Operator screen	This screen contains library configuration and control functions. To use this screen, you must have either operator- or service-level access privileges.
	Service screen	This screen contains reporting functions, system tests, and service commands. To use this screen, you must have service-level access privileges.

Table 1-2 Control Panel Security Levels

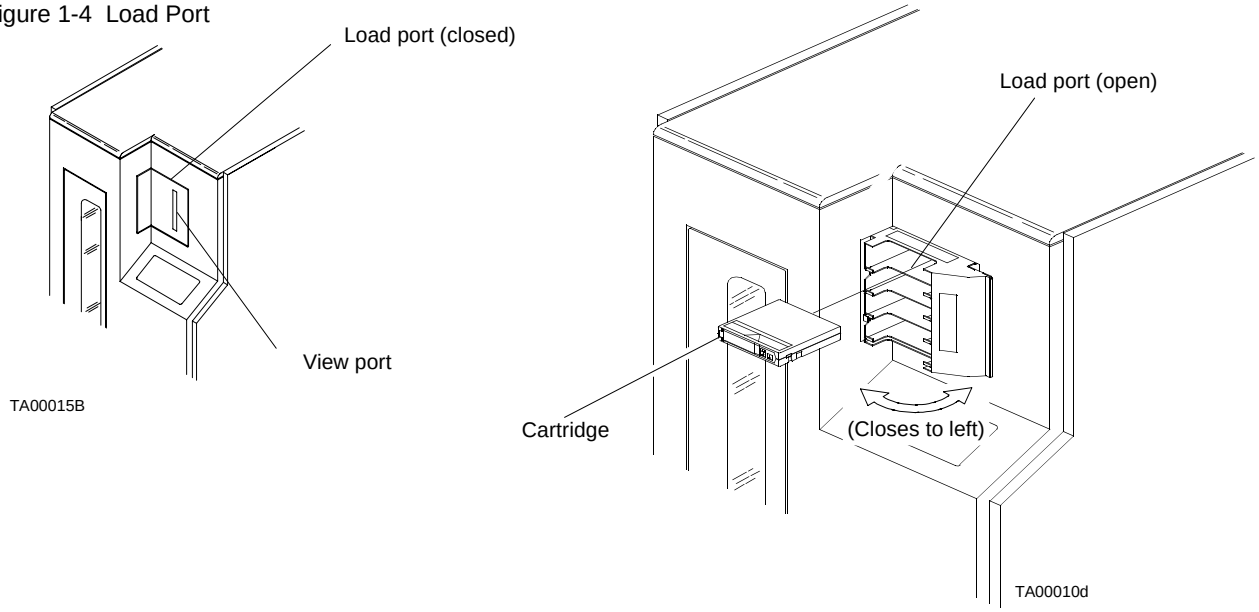
Security Level	Lock Icon Indicator	Password Protected	Access to Overview Screen	Access to Tapes Screen	Access to Operator Screen	Access to Service Screen
User	U	No	Yes	Yes	No	No
Operator	O	Yes	Yes	Yes	Yes	No
Service	S	Yes	Yes	Yes	Yes	Yes

Unless you are configuring or testing the library, you should use the User security level.

Load Port

The load port (figure 1-4) is located above the control panel. This device allows you to insert or remove up to four tape cartridges at one time. (See table 1-1 for a description of the Load Port button.)

Figure 1-4 Load Port



Library Doors

Overview

The library has three locking doors:

- front door
- storage array door
- drive access door

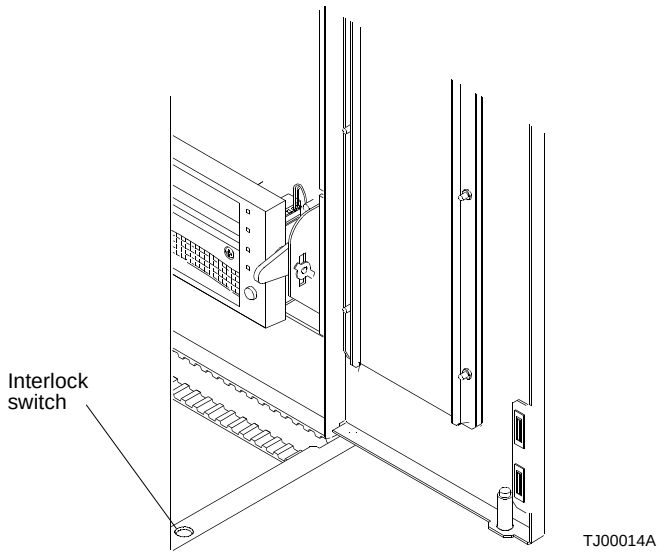
These doors provide access to the storage bins and the front and back panels of the tape drives.

Safety Features

For safety reasons, library doors should remain locked while the library is in use. If a door is opened during library operation, an interlock switch in the door (figure 1-5) immediately removes power from the robotic axes. This may cause a move command to be interrupted, resulting in a partially picked or placed tape cartridge or a tape cartridge in the gripper.

Note: By default, the library performs a full inventory after you open and close any of the library doors.

Figure 1-5 Front Door Interlock Switch



Note: To open a library door properly, always press the Standby button on the control panel first. This allows any host commands to finish before taking the library off-line. For more information, see "Placing the Library Off-line" on page 2-2.

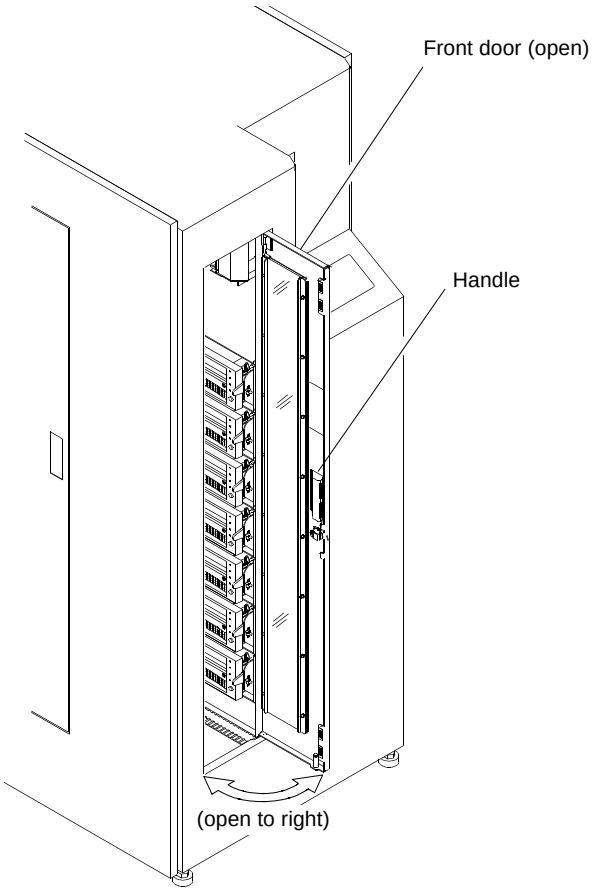
Door Locations and Functions

Each door provides access to a different part of the library.

Front Door

The front door (figure 1-6) allows you to access the control panel for each tape drive. This door is typically used by field service engineers during maintenance procedures.

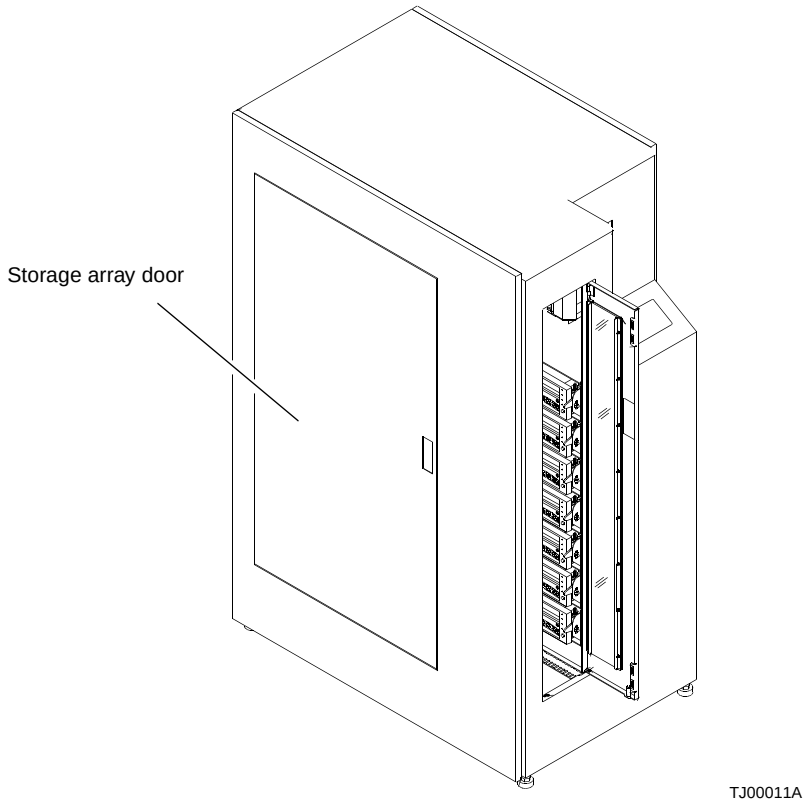
Figure 1-6 Front Door



Storage Array Door

The storage array door (figure 1-7) is used for bulk loading and unloading of cartridges.

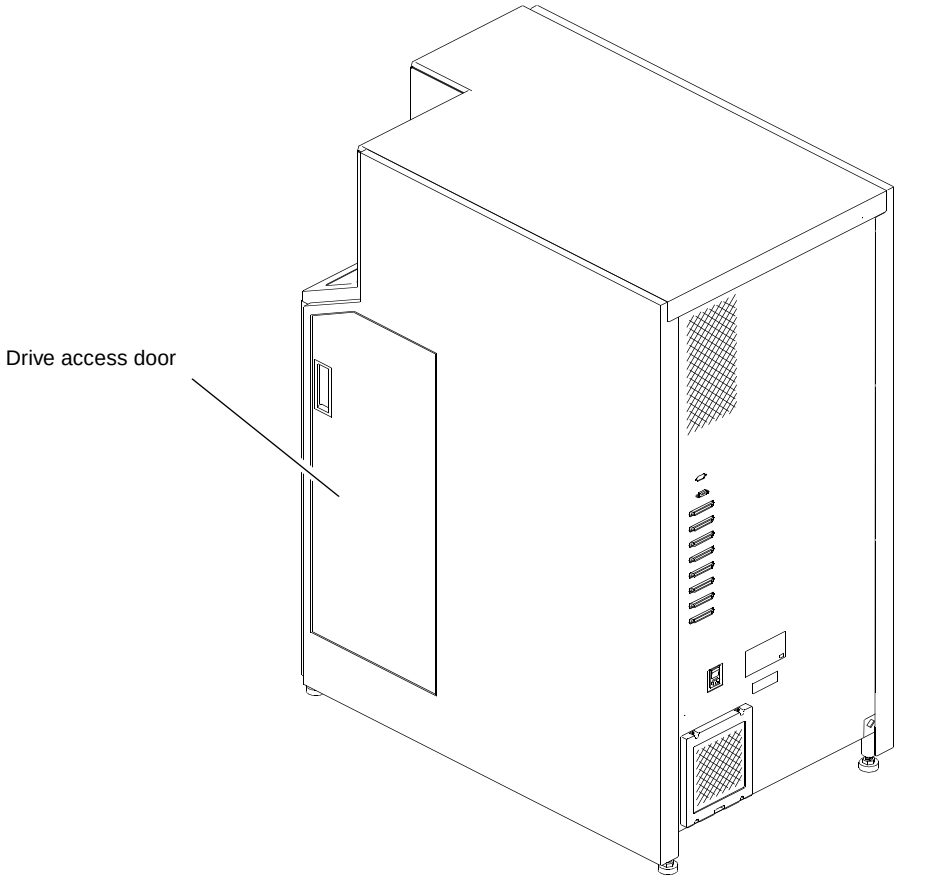
Figure 1-7 Storage Array Door



Drive Access Door

The drive access door (figure 1-8) provides access to the cabling assemblies for each tape drive. Field service engineers use this door when servicing or replacing a tape drive.

Figure 1-8 Drive Access Door



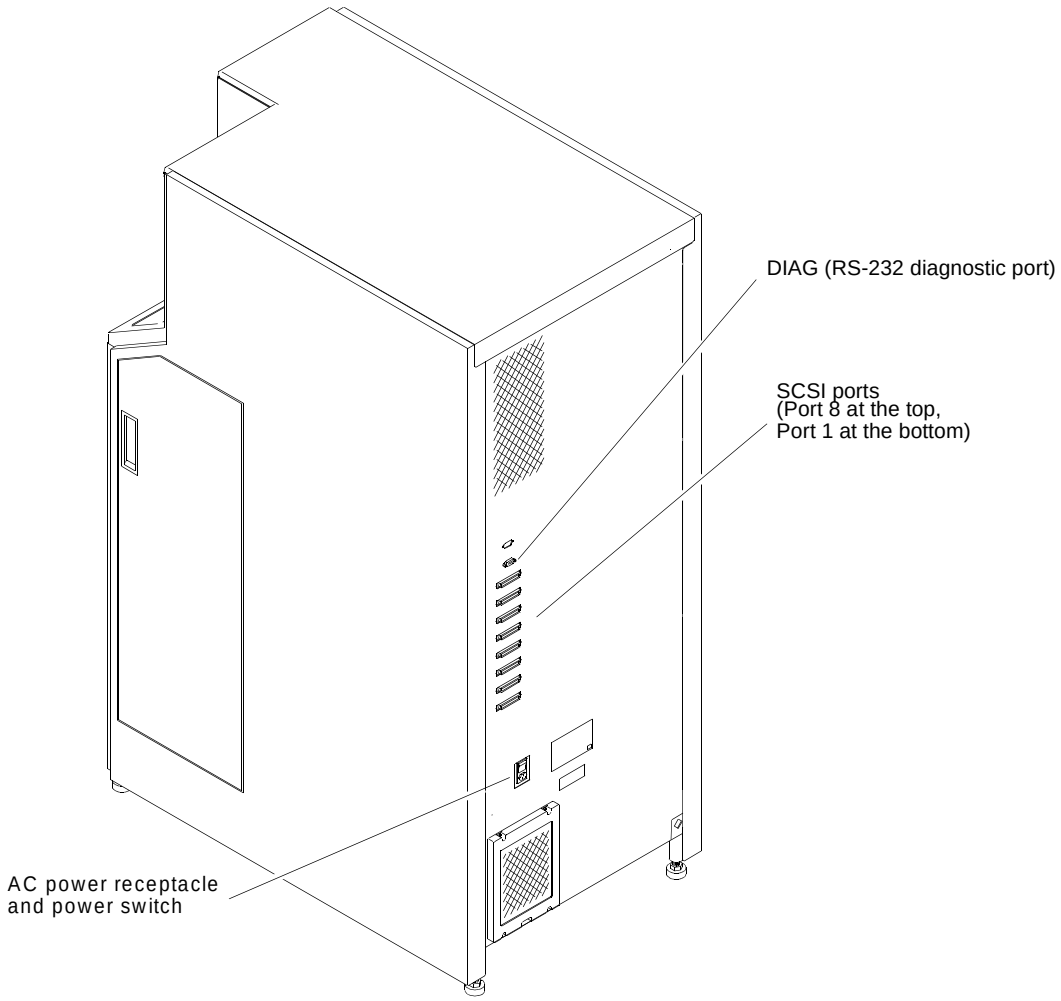
Back Panel

Overview

The back panel of the library (figure 1-9) contains these components:

- AC power switch
- AC power receptacle
- SCSI ports
- diagnostic port

Figure 1-9 Back Panel



Additional Information

For additional information about setting up SCSI cabling for the TL895 library, refer to Appendix A in the *TL895 DLT Library Facilities Planning and Installation Guide.*

For additional information about the diagnostics port, refer to the *TL895 DLT Library Diagnostic Software Manual*.

Tape Drive Status/Control Panel

Overview

A status/control panel is located on the tape drive (figure 1-10). The location of the tape drives is shown in figure 1-1. The features of the status/control panel are described in table 1-3.

Figure 1-10 TZ89 Tape Drive Status/Control Panel

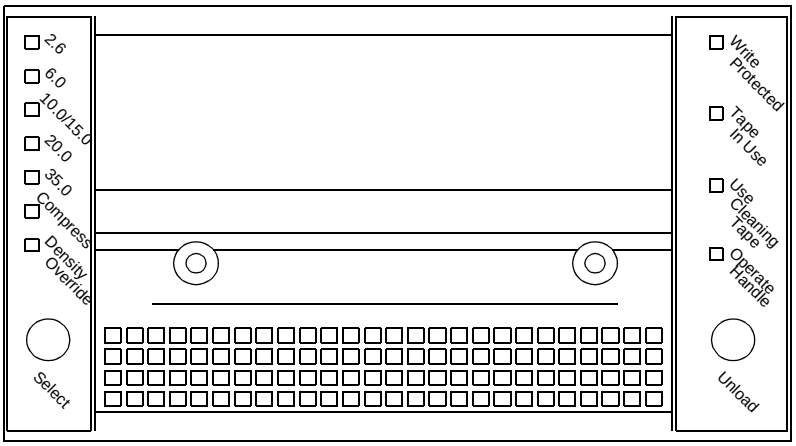


Table 1-3 DLT Tape Drive Status/Control Panel Functions

Feature	Function
Unload button	Pressing this button rewinds the tape into the cartridge to prepare it for removal from the tape drive. The tape cartridge must be rewound completely before ejecting the tape cartridge from the drive. Depending on tape position, this could take 10 to 120 seconds.
Operate Handle	This green indicator lights when the insert/release handle is ready to operate.
Use Cleaning Tape	This yellow indicator lights when the drive head needs cleaning or the current tape is bad. After removing a cleaning tape cartridge, the indicator remains lit if the cleaning operation was not completed or the cleaning tape cartridge was bad.
Tape in Use	This yellow indicator blinks while the tape cartridge loads and calibrates. After calibration, it remains lit.
Write Protect	This orange indicator lights when the loaded tape cartridge is write-protected.

Additional Information

For detailed information about the tape drive used with your library, refer to the *TZ89 Tape Drive Product Manual*.

Chapter 2
Basic Operations

This chapter describes the following basic operating procedures:

- turning the library on or off
- obtaining library status
- changing the control panel security level
- adding tape cartridges
- removing tape cartridges
- turning the interior light on or off

With the exception of changing control panel security status, these procedures do not require a library password. (Some of these procedures do require a key to the library doors.) For more advanced procedures (such as configuring, calibrating, or testing the library), see Chapters 3 and 4.

Turning the Library On or Off

Overview

This section explains how to:

- turn the library on
- place the library on-line
- place the library off-line
- turn the library off

Turning the Library On

Step	Action
1	Verify the following: • The load port and all library doors are closed • All cosmetic panels are attached • All rear panel connections are secured
2	At the rear panel, set the AC power switch to the I (on) position. After initializing, the library performs a complete inventory (in default configuration).
3	After several seconds, verify that the current state of the library (on-line or off-line) appears in control panel display.

Placing the Library On-line

Step	Action
1	With the library turned on and the control panel indicating "System Off-line," press the Standby button on the control panel.
2	Verify that the control panel displays "System On-line."

Placing the Library Off-line

Step	Action
1	With the library turned on and the control panel indicating "System On-line," press the Standby button on the control panel. The library robotics completes any current command(s) and then stops.
2	Verify that the control panel displays "System Off-line."

Turning the Library Off

Step	Action
1	Place the library off-line using the Standby button. The library robotics completes current command(s) and then stops.
2	Verify that the control panel displays “System Off-line.”
3	Verify that the library gripper is empty by visually inspecting it or by checking the Overview screen in the control panel. If there is a tape cartridge in the gripper, execute a Move command to place the cartridge in an available bin or drive.
4	At the rear panel, set the AC power switch to the O (off) position.

Caution: Always leave library power off for at least 15 seconds before turning the power on again.

Obtaining Library Status

Introduction

You can obtain library status information from two control panel screens:

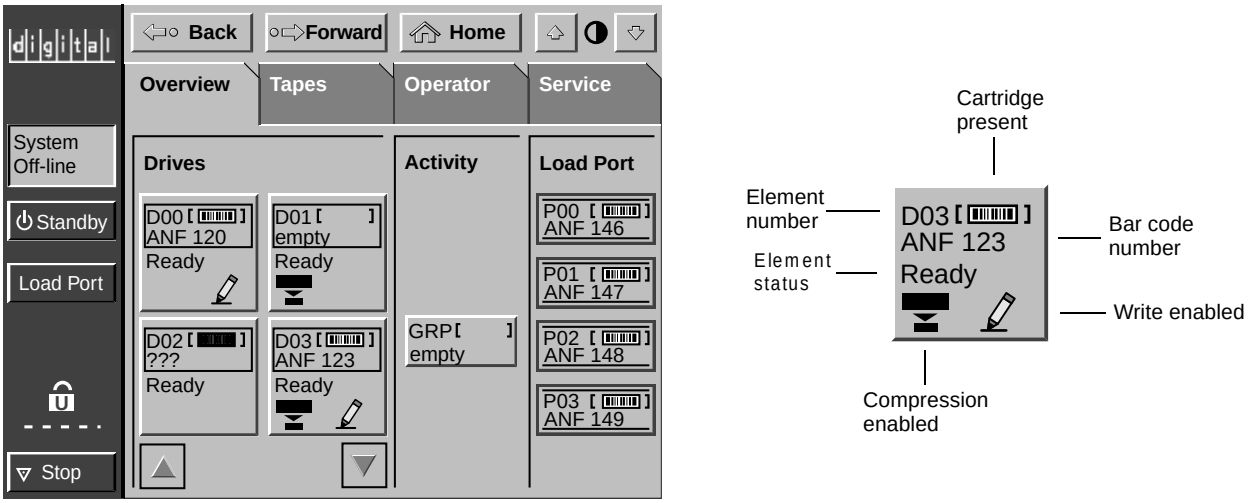
- Overview screen
- Tapes screen

The Overview screen displays a snapshot of the tape drives, robot activity, and load port inventory. The Tapes screen displays an inventory of all elements in the library.

Overview Screen

The Overview screen (figure 2-1) consists of Drives, Activity, and Load Port areas.

Figure 2-1 Overview Screen



Drives

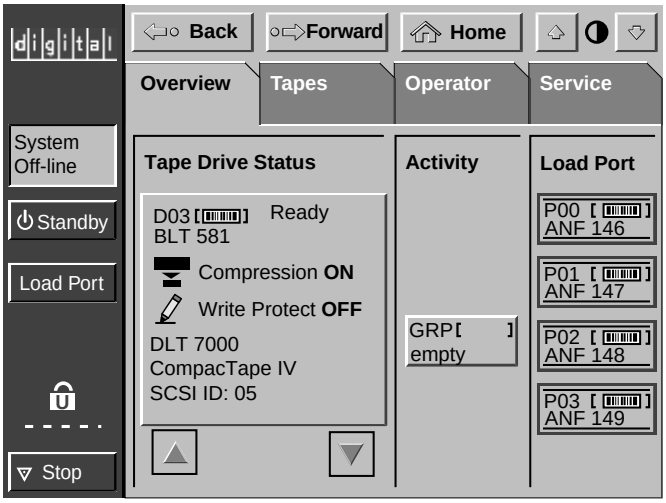
The Drives area displays the following information:

- Whether a tape drive has a cartridge
- The bar code number of the cartridge (if a label is present and can be read)
- Whether the tape cartridge is write-protected
- Whether compression is enabled

For a more detailed view of drive status, press the screen anywhere in the Drives area to make the Tape Drive Status box appear (figure 2-2). Use the arrow buttons at the bottom of the box to scroll to the desired drive.

To return to the Overview screen, press the screen anywhere in the Tape Drive Status box.

Figure 2-2 Tape Drive Status Box



Activity Status

The Activity area shows the source element, the transport element (gripper), and the destination element involved in a move.

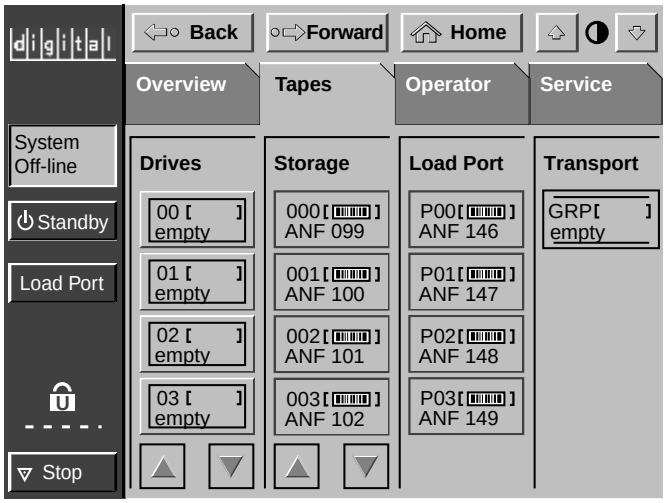
Load Port Status

The Load Port area identifies tape cartridges currently stored in the load port.

Tapes Screen

The Tapes screen (figure 2-3) displays the content of all library elements. To view the Tapes screen, press the Tapes tab.

Figure 2-3 Tapes Screen



Four element types appear in this screen:

- Tape drives
- Storage (fixed storage bins)
- Load port
- Transport (gripper)

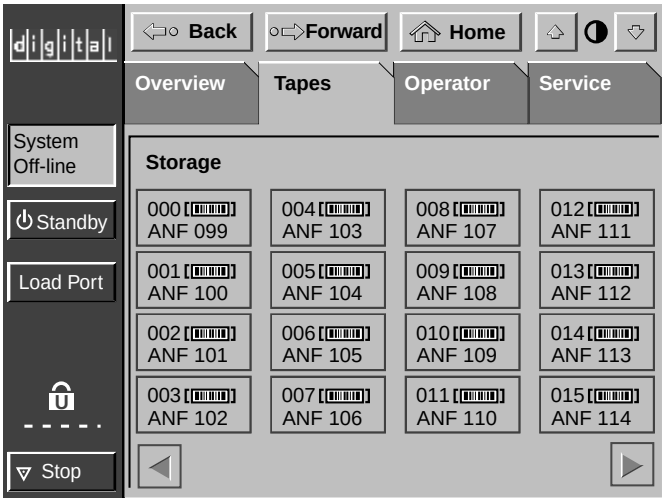
In each category, you can identify the elements containing a tape cartridge and whether the cartridge is labeled.

Viewing Storage Elements

The Drives and Storage categories have too many elements to display on the screen at one time. To scroll through these categories, use the arrow buttons at the bottom of each category.

You can also expand these categories to fill the control panel screen. To do this, press the screen in the desired category (figure 2-4).

Figure 2-4 Tapes Screen with Expanded View



To return to the Tapes screen, press the Back button.

Control Panel Security Levels

Overview

There are three levels of security for the TL895 library control panel:

- User (U)—This level provides access to parts of the control panel that are not password-protected (Overview and Tapes screens).
- Operator (O)—This level provides access to the Operator screen.
- Service (S)—This level provides access to both the Operator and Service screens.

The current security level (U, O, or S) appears inside the security level "lock" icon ( ) on the vertical bar of the control panel.

Securing the Control Panel

When the User security level is set, the Operator and Service screens cannot be accessed. This makes the User security level an appropriate default condition for library operation since the Operator and Service screens contain controls that configure, test, and initialize the library.

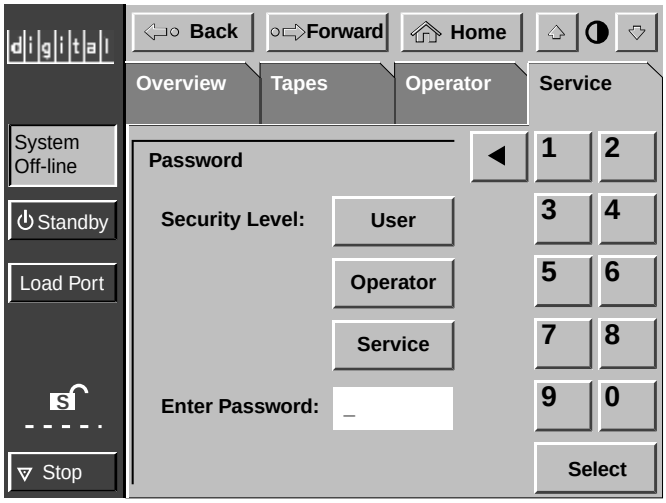
For more information about accessing the Operator or Service screens (changing to a higher security level), see "Accessing the Operator Screen" on page 3-2 or "Accessing the Service Screen" on page 4-2.

Changing to a Lower Security Level

To change to a lower security level:

Step	Action
1	Complete all tasks requiring the higher security level.
2	When finished, press the lock icon on the vertical bar of the control panel. The Password screen appears (figure 2-5).

Figure 2-5 Password Screen



Step	Action
3	Press the button with the desired security level (User, Operator, or Service).
Note:	Although you can use this screen to access higher security levels, you may find it faster to do so by clicking the Operator or Service tab and then entering the password when prompted.
4	Enter a password, if necessary, and then press the Select button. The User level does not require a password. A screen appears indicating that the new security level has been set successfully.
5	Press Okay. The lock icon displays the new level of security (U, O, or S).

Adding Tape Cartridges

Overview

This section consists of the following procedures:

- Attaching bar code labels to cartridges
- Setting write-protect/write-enable operation
- Inserting tape cartridges through the load port
- Bulk loading cartridges

Note: This library supports CompacTape III, CompacTape IIIXT, and CompacTape IV cartridges only. Do not use CompacTape I or CompacTape II cartridges.

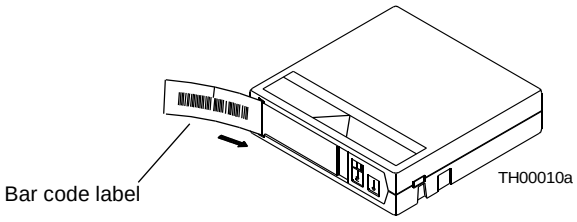
Attaching Bar Code Labels to Cartridges

Before a tape cartridge is added to the library, it must have a bar code label for identification. When applying bar code labels:

- Only use the bar code labels provided with the library.
- Apply the bar code label as shown in figure 2-6.

Caution: Do not attach labels to any other part of the tape cartridge.

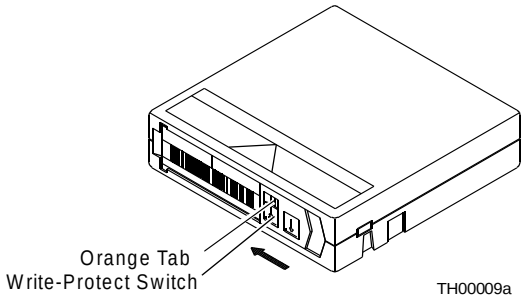
Figure 2-6 Location of the Bar Code Label on a Tape Cartridge



Setting Write-Protect and Write-Enable Operation

Each DLT cartridge has a write-protect switch (figure 2-7). To write-protect a cartridge, move the switch to the left. An orange tab appears. To write-enable a cartridge, move the switch to the right. The orange tab disappears.

Figure 2-7 Setting the Write-Protect Switch



Using the Load Port to Insert Cartridges

Step	Action
1	Verify that each cartridge has a bar code label, is correctly write-enabled/protected, and is free of foreign material (labeling stock, packaging, and so on).

Warning: While the load port is opening, keep your hands clear of the revolving load port door.

2	To open the load port, press the Load Port button. Wait until the load port opens completely and the door locks before going on to the next step. This may take several seconds.
3	When the load port door is completely open, insert tape cartridges into any available load port bin. See figure 2-8.
4	Press the Load Port button to release the load port door. This may take several seconds.
5	Grasping the door handle, close the load port door. The load port door automatically locks in the closed position.

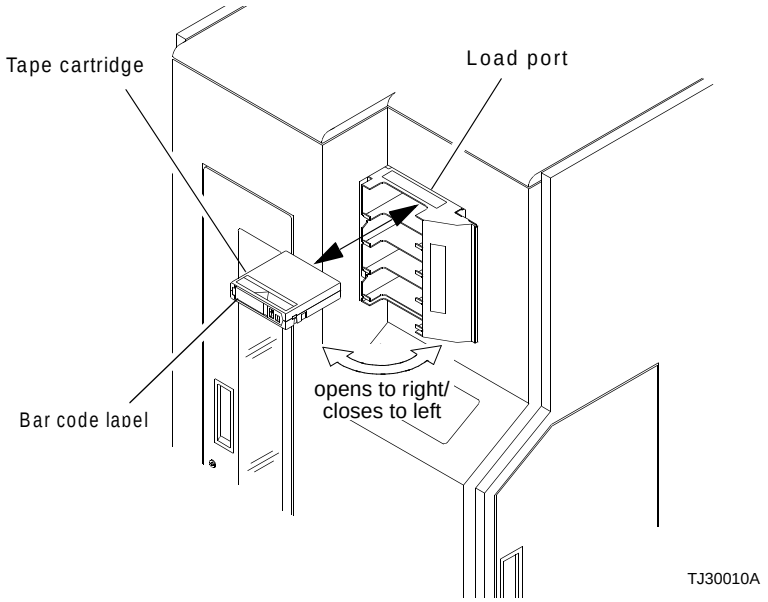


Figure 2-8 Inserting a Tape Cartridge

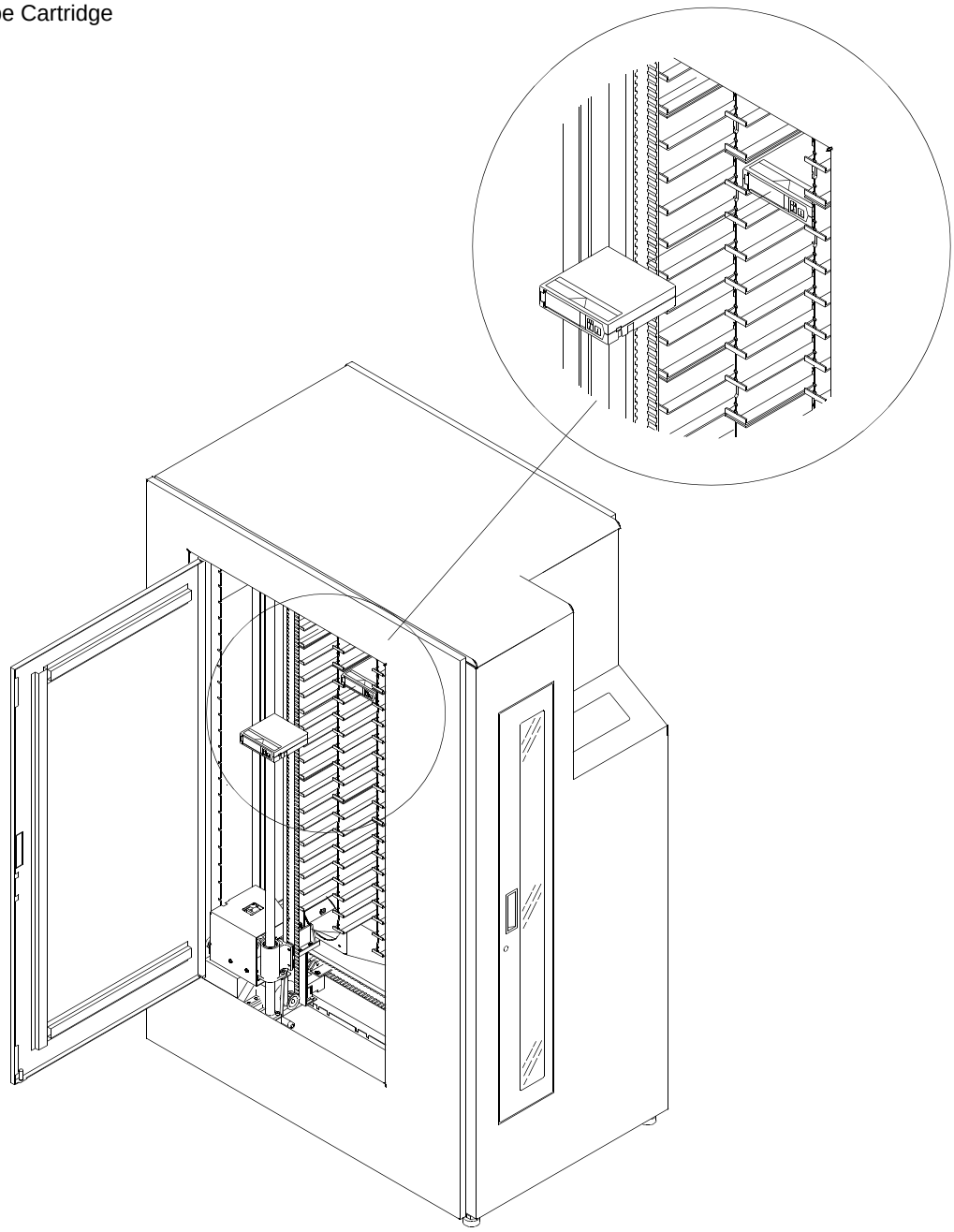
Bulk Loading Cartridges

Under normal circumstances, you should add tape cartridges to the library using the load port. However, there may be situations (such as initial loading of the library) when you need to load a large number of cartridges. In this case, you can add cartridges in bulk through the storage array door.

To add cartridges in bulk through the storage array door:

Step	Action
1	Verify that each cartridge has a bar code label, is correctly write-enabled/protected, and is free of foreign material (labeling stock, packaging, and so on).
2	Turn off the library as explained on page 2-3.
3	Unlock and open the storage array door.
4	Insert the tape cartridges in available bins. When loading a cartridge, be sure to orient it properly, with the label facing you and right-side-up (see figure 2-9).
Note:	The load port bins are keyed to ensure that tape cartridges are inserted properly. Fixed storage array bins inside the library, however, are not keyed, and you *must* ensure that cartridges are properly oriented.
5	When finished, close and lock the storage array door.
6	Turn on the library as explained on page 2-2.

Figure 2-9 Tape Cartridge Orientation



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Removing Tape Cartridges

Overview

This section consists of three procedures:

- Manually unloading a tape drive
- Removing tape cartridges from the load port
- Bulk unloading the library

Manually Unloading a Tape Drive

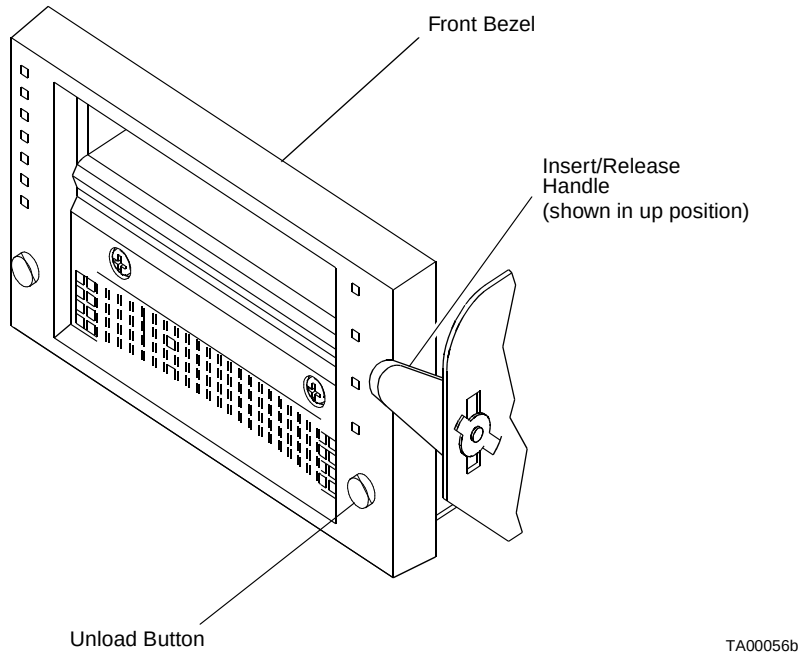
It is best to unload a tape drive using commands from the host or control panel. If necessary, however, you can use this procedure to manually unload the drive.

Step	Action
1	Press the control panel Standby button. The library completes any current command(s) and then stops. Verify that "System Off-line" appears in the control panel display.
2	Open the front door by pulling the door towards you. The door opens to your right.
3	On the drive to be unloaded, press the Unload button (see figure 2-10). Wait for the Operate Handle indicator to light before going to the next step.
Note:	When you press Unload, the tape cartridge rewinds completely. Depending on the tape cartridge position, it may take 10-120 seconds before the Operate Handle indicator lights.
4	When the Operate Handle indicator lights, raise the insert/release handle to eject the tape cartridge.
5	Pause for two seconds, then grasp the tape cartridge and slowly pull it half way out of the drive.

Caution: If the tape cartridge leader is buckled to the take-up leader, push the tape cartridge completely into the drive, press down the insert/release handle, and return to step 3. Otherwise, continue to step 6.

6	Pull the tape cartridge completely out of the drive.
7	Close the library door.
8	Press the control panel Standby button, and verify that "System On-line" appears in the control panel display.
Note:	The library performs a full inventory before the control panel displays "System On-Line."

Figure 2-10 Manually Unloading the Tape Drive



Using the Load Port to Remove Cartridges

Step	Action
1	Use the view port to determine if the load port contains tape cartridges to be removed.

Warning: While the load port is opening in the next step, keep your hands clear of the revolving load port door.

2	To open the load port, press the Load Port button. Wait until the load port opens completely and the door locks before going on to the next step. This may take several seconds.
3	Remove the tape cartridge(s) from the load port bin(s).
4	Press the Load Port button to release the load port door lock.
5	Grasping the load port door, push the door closed. The door automatically locks when completely closed.

Bulk Unloading the Library

Under normal circumstances, you should remove tape cartridges from the library using the load port. However, there may be situations (such as moving the library to a new site) when you need to unload a large number of cartridges. In this case, you can remove the cartridges in bulk through the storage array door.

To remove cartridges in bulk through the storage array door:

Step	Action
1	Unload all tape drives using a host command or the manual procedure described in "Manually Unloading a Tape Drive" on page 2-14.
2	Turn off the library as explained on page 2-3.
3	Unlock and open the storage array door.
4	Remove tape cartridges as desired. If removing all cartridges from the library, be sure to check the load port and tape drives for cartridges.
5	When finished, return the library to operation or, if relocating the library, continue preparing the library for shipment. Remember to close and lock the storage array door.

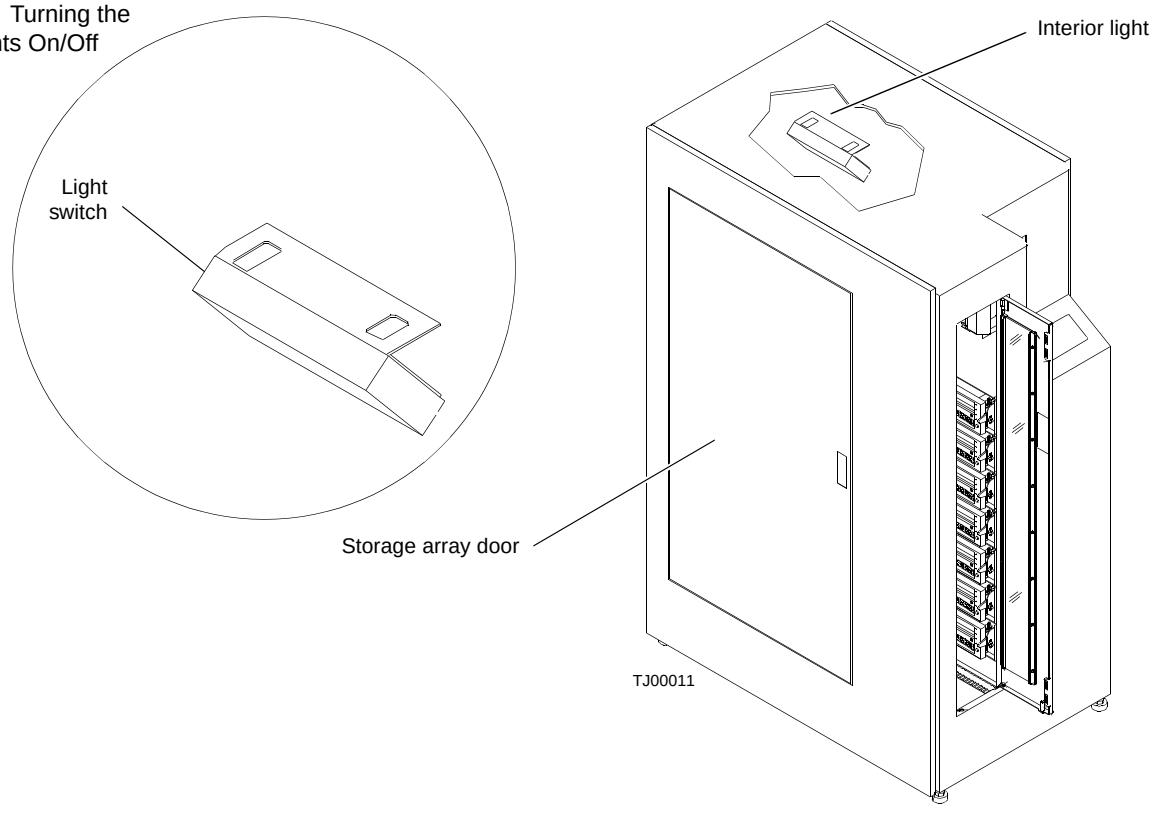
Turning the Interior Light On or Off

In the default configuration, the library light switch is turned on. Use the following procedure to turn the interior light on or off.

Note: The interior light bulb is a not an operator-replaceable item. If the light bulb needs replacement, notify an authorized field service engineer.

Step	Action
1	Turn off the library as explained on page 2-3.
2	Unlock and open the storage array door.
3	Locate the light fixture above the storage bins and then the light switch on the left side of the fixture (figure 2-11).
4	Set the light switch to the desired position.
5	Close and lock the storage array door.
6	Turn on the library as explained on page 2-2.

Figure 2-11 Turning the Interior Lights On/Off



Turning the Interior Light On or Off

Chapter 3

Operator Commands

This chapter describes the commands found on the Operator screen of the library control panel. These commands enable you to:

- configure the library
- configure library options
- move a tape cartridge
- inventory tape cartridges
- calibrate the library
- exercise the library
- unload a drive
- unload the load port

This chapter assumes you understand the basic operations of the TL895 library control panel, including:

- general operation of touch screens
- navigation from screen to screen using the Back and Forward buttons
- use of the Abort button to stop a command in progress
- assignment of higher and lower control panel security levels

To learn more about control panel components, see “Control Panel” on page 1-4. To learn more about control panel security levels, see “Control Panel Security Levels” on page 2-8.

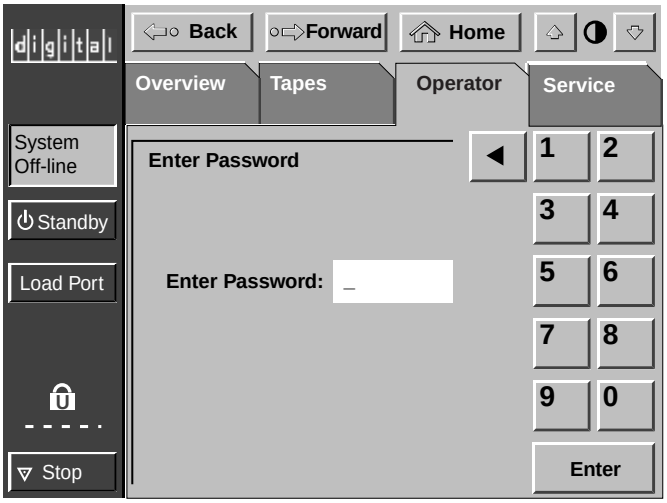
Accessing the Operator Screen

Entering an Operator Password

To access the Operator screen, press the Operator tab.

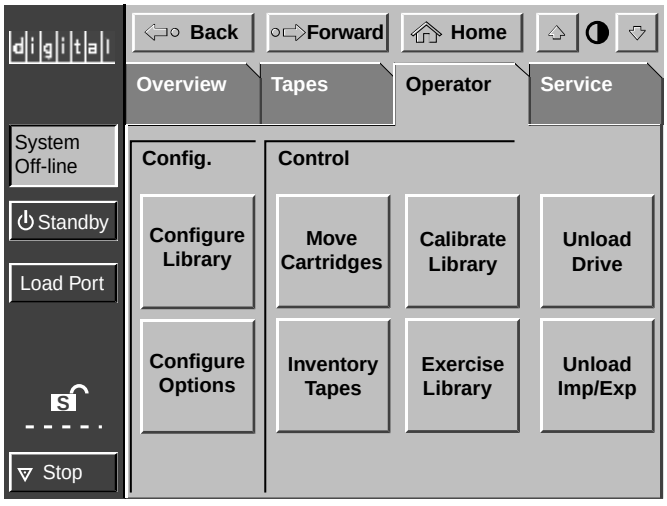
The Operator screen is restricted to individuals with operator or service access privileges. When you press the Operator tab to display the screen, an Enter Password screen appears (figure 3-1).

Figure 3-1 Enter Password Screen



You must enter a correct password to gain access to the Operator screen (figure 3-2). The default operator password is 1234.

Figure 3-2 Operator Screen



Note: After performing the tasks that require operator level security clearance, protect the library from unauthorized access by returning to the User security level as explained in "Changing to a Lower Security Level" on page 2-8.

Configuring the Library

Overview

The Configure Library command enables you to assign the following:

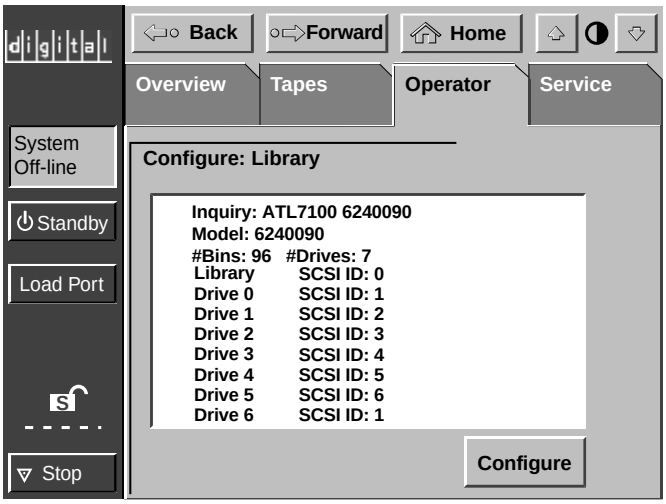
- library model number
- number of storage bins
- number of drives
- library SCSI ID
- tape drive SCSI IDs

Configuring Library Attributes

To configure any of these attributes:

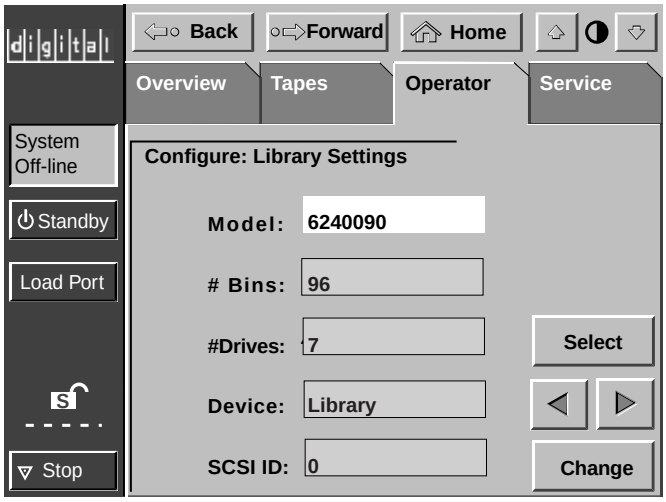
Step	Action
1	In the Operator screen, press the Configure Library button. The Configure: Library screen appears, displaying the current library configuration (figure 3-3).

Figure 3-3 Configure: Library Screen



Step	Action
2	To change any of the configuration settings, press the Configure button. The Configure: Library Settings screen appears (figure 3-4).

Figure 3-4 Configure: Library Settings Screen



3	Change a library setting as follows: • Press the Select button until you highlight the configuration setting you want to change. (To change a SCSI ID, you must first select the desired device and then the desired SCSI ID number.) • Use the arrow buttons to scroll through setting choices. • When the desired setting appears, press the Execute button to save the setting as part of the library configuration.
4	Repeat step 3 to make additional changes to the library configuration.

Assigning SCSI IDs

When assigning SCSI IDs, remember that each SCSI device on the same SCSI bus must have a unique number from 0 to 15. SCSI devices include:

- library robotics
- host computers
- library tape drives
- internal and external hard disk drives

Configuring Library Options

Overview

The Configure Options command allows you to set these options:

- *Power-up State.* This option determines whether the library is on-line or off-line when powered up.
- *Auto Clean.* This option allows the library to perform drive cleaning tasks automatically as needed.
- *Retries.* This option cause the library to automatically retry a failed command before issuing an error message.
- *Exabyte Emulation.* This option causes the library to appear like an Exabyte tape library to a host computer.
- *Bar Code Labels.* This option turns bar code scanning on or off during inventory. It should be disabled when the library contains cartridges that are not labeled.
- *Auto Inventory.* This option causes the library to perform an inventory whenever the library is powered up.
- *Auto Load.* This option causes the library to automatically move cartridges in the load port to empty storage bins as soon as the load port door is closed.
- *Temp. Detection.* This option enables or disables the over-temperature detection warning and shutdown features of the library.
- *Label Scan Retries.* This option causes the library to attempt to read cartridge bar codes up to the number of times specified (1 to 8).
- *Auto Drive Unload.* When enabled, this option adds an Unload Drive command to a Move command when the source element (that is, the element with the cartridge to be moved) is a tape drive.

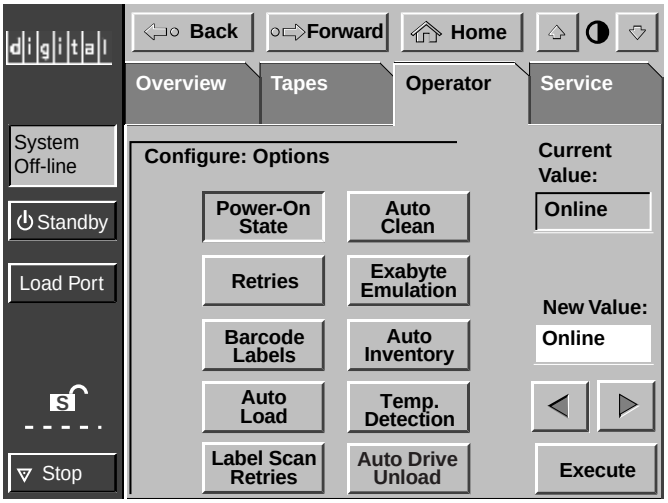
For more information about these features, refer to the *TL895 DLT Library Diagnostic Software Manual* or the *ATL 7100 Series Software Interface Guide*.

Changing Configuration Options

To configure these options:

Step	Action
1	Press the Standby button to place the library off-line. Verify that the control panel displays “System Off-line.”
2	In the Operator screen, press the Configure Options button. The Configure: Options screen appears (figure 3-5).

Figure 3-5 Configure: Options Screen



System should be off-line as indicated here.

3	Select the option you want to change by pressing the corresponding button.
4	Using the arrow buttons, scroll through the settings for the option until the desired setting appears in the New Value field.
5	Press the Execute button to add the new setting to library configuration. A “Command In Progress” screen appears.
6	Repeat steps 2 through 4 to change other configuration options.

Moving Cartridges

Overview

The Move Cartridges command enables you to move a tape cartridge from one library element to another. Any of the following library elements can be involved in Move Cartridges commands:

- storage bin
- tape drive
- load port bin
- gripper

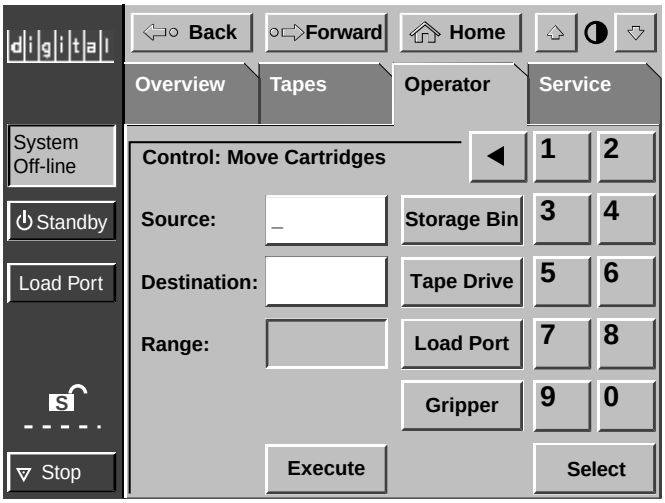
Note: To move a cartridge from a tape drive, you must first issue an Unload Drive command as explained in "Unloading a Drive" on page 3-12.

Initiating a Move

To move a tape cartridge:

Step	Action
1	In the Operator screen, press the Move Cartridges button. The Control: Move Cartridges screen appears with the Source input field active (figure 3-6).

Figure 3-6 Control: Move Cartridge Screen



Step	Action
2	Identify the source element with the cartridge to be moved. To do this: • Press the appropriate element button (Storage Bin, Tape Drive, Load Port, or Gripper). A range of element numbers appears in the Range field. • Using the on-screen keypad, enter the number of the source element.
3	Identify an empty destination element as follows: • Press the Destination input field to select it. • Press the appropriate element button (Storage Bin, Tape Drive, Load Port, or Gripper). • Using the on-screen keypad, enter the number of the destination element.
4	Press the Execute button to begin the move command. A "Command In Progress" screen appears. The move command continues until completed unless the system detects an error or you stop the operation by pressing the Abort button.
5	Repeat steps 2 through 4 to make additional moves.

Performing an Inventory

Overview

The Inventory Tapes command determines the bar code labels of the cartridges in the tape drives, storage bins, and load port bins. Library elements that contain cartridges without bar code labels are marked full with no label.

Performing an Inventory

To perform an inventory, press the Inventory Tapes button in the Operator screen. A “Command In Progress” screen appears.

The inventory process continues until:

- The system checks all storage elements
- The system detects an error.
- You stop the process by pressing the Abort button.

Note: The use of bar code labels on all tape cartridges can reduce inventory time.

Calibrating the Library

Objective

The Calibrate Library command checks the horizontal and vertical graduations used by the library to position the gripper for picking and placing operations. Once calibrated, the library can determine the exact position of any library element.

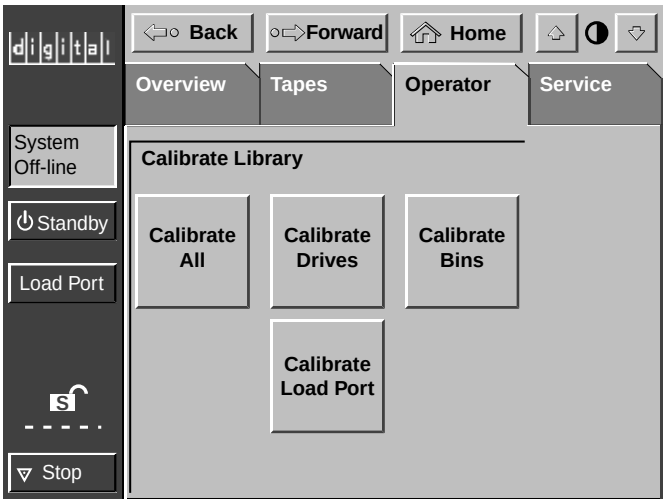
Note: You should calibrate the library during initial installation and after any maintenance or replacement procedure. Calibrate All takes approximately 20 minutes to complete.

Starting the Calibration Process

To calibrate library elements:

Step	Action
1	In the Operator screen, press the Calibrate Library button. The Calibrate Library screen appears (figure 3-7).

Figure 3-7 Calibrate Library Screen



2	Press the button with the desired calibration option. Pressing Calibrate All calibrates the drives, bins, and load port. A "Command In Progress" screen appears while this process is under way.
3	Repeat step 2 to perform another calibration, if desired.

Exercising the Library

Overview

The Exercise Library command tests library calibration and operation by randomly moving tape cartridges from one storage element to another.

Note: This test changes the location of tape cartridges in the library.

Starting the Exercise Process

To exercise library elements, press the Exercise Library button in the Operator screen. A “Command In Progress” screen appears.

Stopping the Exercise Process

The exercise process runs continuously until you stop the process by pressing the Abort button.

Note: The exercise process also stops if an error is detected. In this case, an error message appears in the control panel.

Unloading a Drive

Definition

The Unload Drive command prepares a tape cartridge to be ejected from a drive by disengaging the tape from the read/write heads and rewinding it.

Note: After unloading the drive, you can eject and remove the tape cartridge using a Move Cartridges command.

To Unload a Drive

Step	Action
1	In the Operator screen, press the Unload Drive button. A screen appears with a drive list (figure 3-8).

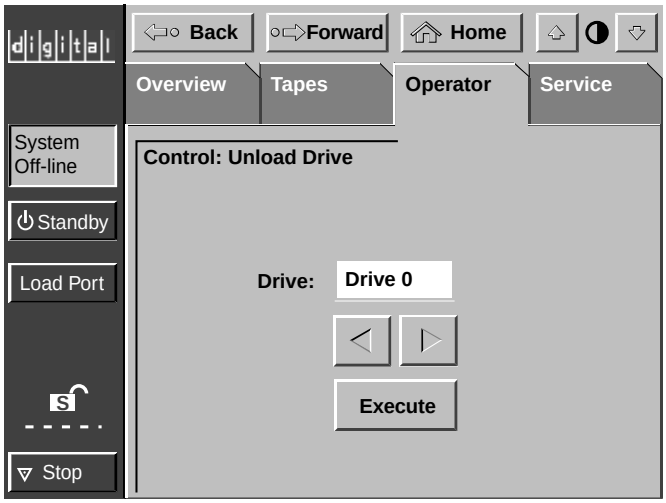


Figure 3-8 Unload Drive Screen

2	Use the arrow buttons to scroll through available drives.
3	When the desired drive appears in the field, press the Execute button to begin the process. A "Command In Progress" screen appears until the drive is unloaded.

Unloading the Load Port

Overview

The Unload Imp/Exp command moves a tape cartridge from the load port to an available storage bin. You should use this command after inserting tape cartridges into the load port when the Auto Load feature is disabled. (For more information about Auto Load, see "Configuring Library Options" on page 3-5.)

Note: You can also use the Move Cartridges command to unload the load port. The Move Cartridges command is especially useful because it allows you to select the destination for the tape cartridge. For more information about the Move Cartridges command, see "Moving Cartridges" on page 3-7.

To Unload the Load Port

Press the Unload Imp/Exp button in the Operator screen. A "Command In Progress" screen appears until the load port is unloaded.

Chapter 4
Service Commands

This chapter describes the commands found on the Service screen of the library control panel. These commands involve the following items:

- system reports
- system tests
- nonvolatile RAM configuration
- system passwords

This chapter assumes you understand the basic operation of the TL895 library control panel, including:

- general operation of touch screens
- navigation from screen to screen using the Back and Forward buttons
- use of the Abort button to stop a command in progress
- assignment of higher and lower control panel security levels

Note: To learn more about control panel components, see “Control Panel” on page 1-4. To learn more about control panel security levels, see “Control Panel Security Levels” on page 2-8.

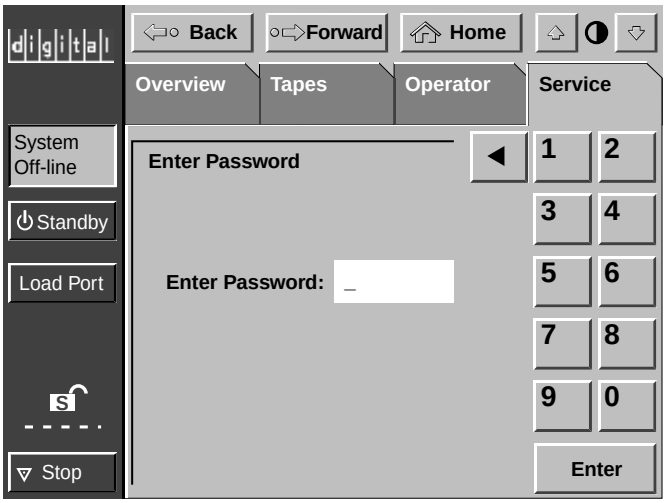
Accessing the Service Screen

Entering a Password

To access the Service screen, press the Service tab.

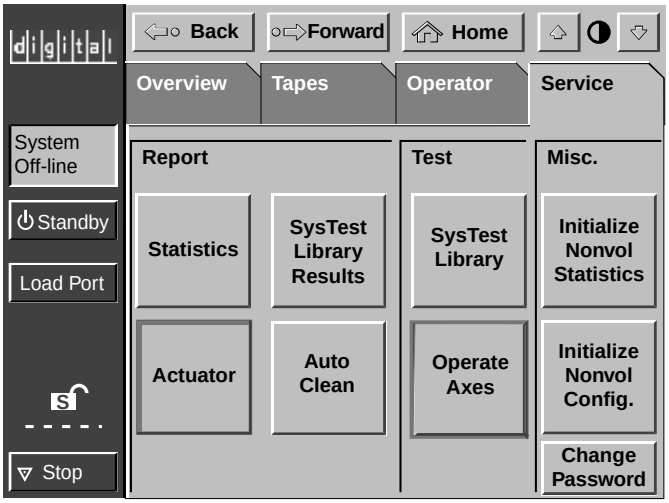
The Service screen is restricted to individuals with service access privileges. When you press the Service tab to display the screen, an Enter Password screen appears (figure 4-1).

Figure 4-1 Enter Password Screen



You must enter the correct service password to gain access to the Service screen (figure 4-2). The default service password is 5678.

Figure 4-2 Service Screen



Note: After performing the tasks that require service level security clearance, protect the library from unauthorized access by returning to the User security level as explained in "Changing to a Lower Security Level" on page 2-8.

System Reports

Overview

The Service screen enables you to display on-screen reports about the following subjects:

- library operating statistics
- actuator position and status (currently not supported)
- system test results
- Auto Clean status and tracking information

Generating Reports

To generate any of the reports listed above, press the appropriate button in the Report area of the Service screen. Within a few seconds, the report appears.

Figure 4-3 shows a sample statistics report (obtained by pressing the Statistics button).

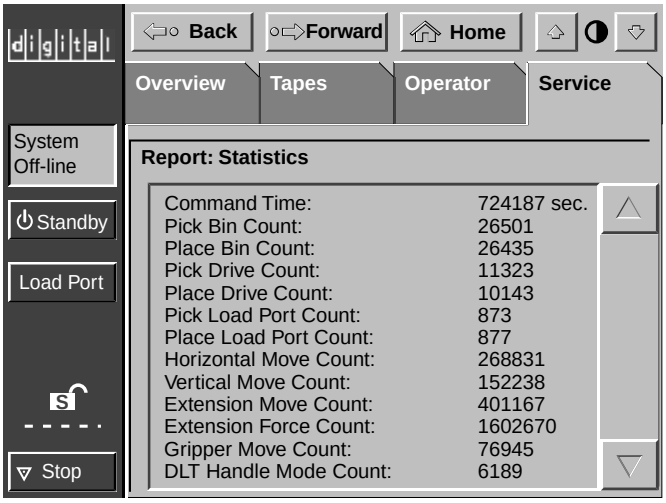


Figure 4-3 Statistics Report

Figure 4-4 shows a sample system test report (obtained by pressing the Systest Library Results button).

Figure 4-4 System Test Report Screen

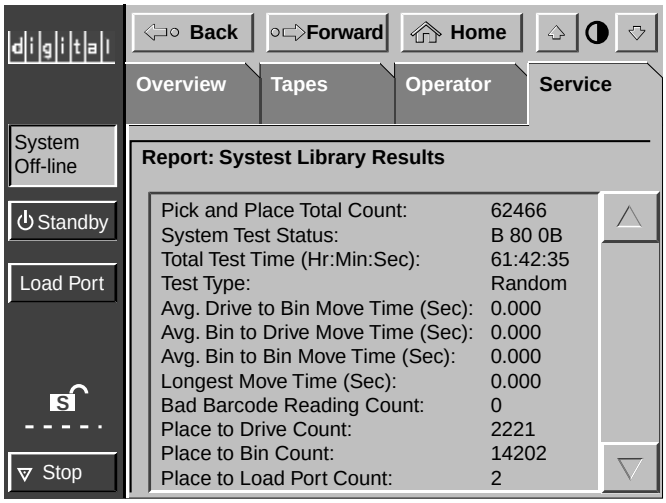
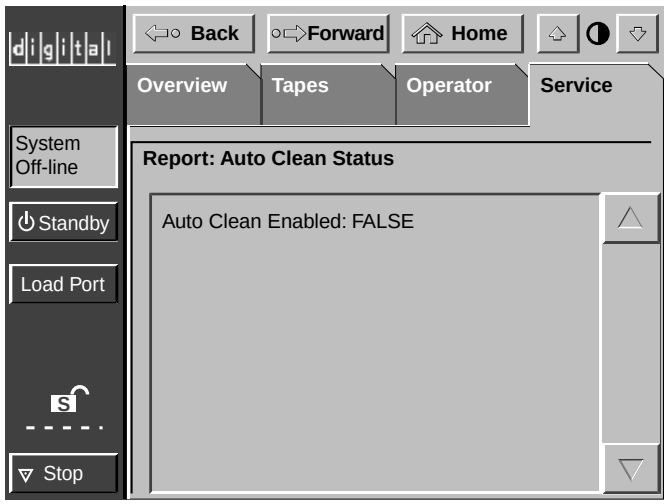


Figure 4-5 shows a sample Auto Clean report (obtained by pressing the Auto Clean button).

Note: This button does not reconfigure or initiate Auto Clean operation. To change the Auto Clean setting, see "Configuring Library Options" on page 3-5.

Figure 4-5 Auto Clean Report Screen



System Tests

Overview

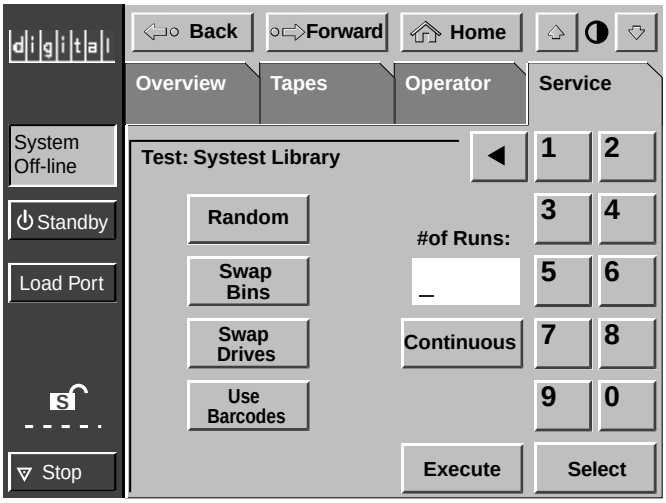
The Service screen provides two categories of system tests:

- *Systest Library.* This command tests library operations by swapping tape cartridges between storage bins or drives.
- *Operate Axes Tests (currently not supported).* This set of commands enables you to selftest, home, position, and exercise specific library axes.

Initiating a Systest Library Command

Step	Action
1	From the Service screen, press the Systest Library button. The Test: Systest Library screen appears (figure 4-6).

Figure 4-6 Systest Library Screen



Step	Action
2	Select library elements to test as follows: • To test storage bins only, press the Swap Bins button. • To test drives only, press the Swap Drives button. • To test both bins and drives, press both the Swap Bins and Swap Drives buttons.
3	Select other test options as follows: • To swap cartridges at random, press the Random button. (If you do not press this button, cartridges will be swapped sequentially from the first bin or drive to the last.) • To have the library read the bar code label as it swaps each cartridge, press the Use Barcode button. • To have the test run continuously until aborted, press the Continuous button. • To have the test run a prescribed amount of times, use the keypad to enter the desired number of run in the # of Runs field. (The system completes a run when all selected elements have been swapped one time.)
4	When you have selected library elements and test options, press the Execute button. A “Command In Progress” screen appears.

Initializing Nonvolatile Information

Overview

The Service screen contains two commands involving information stored in nonvolatile memory:

- initialize nonvolatile memory configuration
- initialize nonvolatile memory statistics

Initializing Nonvolatile Memory Configuration

The Initialize Nonvol Config command returns the library configuration to the factory default, invalidating current calibration data and eliminating any changes made using the Configure Library or Configure Options commands.

To execute this command, press the Initialize Nonvol Config. button in the Service screen.

Initializing Nonvolatile Memory Statistics

The Initialize Nonvol Statistics command purges nonvolatile memory of all statistical information about library operation. This information is used to generate the statistical report described on page 4-3.

To execute this command, press the Initialize Nonvol Statistics button in the Service screen.

Changing Passwords

Overview

The Change Password command enables you to change the operator or service password.

Valid passwords consist of 4 to 8 numeric characters. The default operator password is 1234. The default service password is 5678.

To Change a Password

Step	Action
1	In the Service screen, press the Change Password button. The Change Password screen appears (figure 4-7).

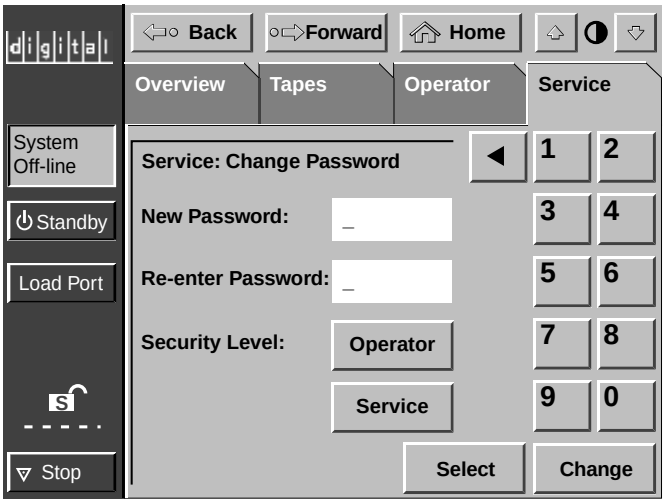


Figure 4-7 Change Password Screen

2	Press the desired security level button (Operator or Service). This determines the password to be changed.
3	Using the keypad, enter a new password and press the Select button. Asterisks representing password characters appear in the New Password field. Pressing Select moves the cursor to the Reenter Password field.
4	Reenter the password and press the Change button. A screen appears stating that the new password has been set successfully.
5	Touch the Okay button.

Testing the New Password

To test the new password:

Step	Action
1	Press the Overview tab. The Overview screen appears.
2	Set the security level back to User. (See "Changing to a Lower Security Level" on page 2-8.)
3	Press the Operator tab to test an operator password or the Service tab to test an Service password. An Enter Password button screen appears.
4	Enter the new password and press Select. Verify that the Operator or Service page appears in the control panel.

Note: If you lose the new password or it fails for any reason, contact DEC Technical Support Department.

Chapter 5
Troubleshooting

This chapter contains a description of problems which you may encounter during the setup and operation of the TL895 library. Wherever applicable, corrective information is provided to help you resolve the problems.

Several of these problems produce error messages on the control panel called *sense data values*. Sense data value messages consist of a number and a description of the error. For a complete list of sense data values, refer to the *ATL 7100 Field Service Manual.*

The troubleshooting information in this chapter is categorized as follows:

- start-up problems
- control panel problems
- robotics problems
- library operation problems
- tape drive problems

Start-up Problems

Table 5-1 describes the corrective action for problems which occur while starting up the library.

Table 5-1 Start-up Problems

Problem	Corrective Action
The library does not power on.	Make sure the library power switch is set to the I (on) position and the power cord is connected to a grounded electrical outlet.
The library or tape drives do not respond on the SCSI bus.	Make sure each SCSI device on the same SCSI bus has a unique address and the last device is properly terminated.
The library reports “not ready” during initialization.	Determine the failure type by checking any previous error codes returned to the host computer. Correct the cause of the error.
One or more tape drives fail to spin up during start-up.	Check all SCSI cabling and termination on the back panel of the library. If necessary, contact your field service representative about replacing the drive(s).
There is a cartridge in the gripper, preventing system calibration and inventory.	Manually remove the cartridge from the gripper. Then, restart the library.
The library starts up in off-line mode.	Press the Standby button. Verify the library switches to on-line. You can use the control panel to select either on-line or off-line mode at power-up.

Control Panel Problems

Table 5-2 describes the corrective action for problems with the control panel.

Table 5-2 Control Panel Problems

Problem	Corrective Action
The control panel is blank.	Contact an authorized field service engineer.
The control panel does not respond to touch.	Contact an authorized field service engineer.
An error message appears in the display.	Write down the details of the error message, including the SK, ASC, and ASCQ numeric values. Then, press Okay to clear the message. For instructions about resolving the error, refer to the *ATL 7100 Field Service Manual.*

Robotics Problems

Table 5-4 describes the corrective action for problems with library robotics.

Table 5-3 Robotics Problems

Problem	Corrective Action
The robot does not move at power up.	Make sure that all internal packing materials (foam pads and tie wraps) were removed during the installation procedure. Check the Stop and Standby buttons; make sure the library is on-line and the Stop button is released.
The gripper partially grips a tape cartridge.	Issue a Move Cartridges command to move the cartridge from the gripper to an empty storage element.
The bar code reader on the gripper fails.	Verify that nothing obstructs the reader. Then, restart the library. If the problem continues, contact an authorized field service engineer.
The robot times out or fails during an operation.	Check that the tape cartridge involved in the operation is properly positioned in the bin or drive and ready to be picked. Check that the robot is not obstructed in any way. Retry the operation. If it still fails, contact a field service engineer.
The robot drops a cartridge.	Open the storage array door safely. (To do so, press the Standby button first to place the library off-line, and then unlock and open the door.) Retrieve the cartridge, orient it properly, and place the cartridge in an empty storage bin. (Do not try to place the cartridge in the gripper.) Afterwards, close and lock the storage array door and press the Standby button again to return the library to on-line mode.
A cartridge is in the gripper at start-up, when a move command is requested, or after a place command is executed.	Press the Standby button to place the library off-line, and then open the storage array door. Manually remove the cartridge from the gripper and place it in an empty bin. Then close the door and press the Standby button to return the library to on-line mode.
The gripper does not have a cartridge after completing a pick command.	Make sure a cartridge is in the source location. Retry the command. If the pick operation fails again, contact a field service engineer.

Operating Problems

Table 5-4 describes the corrective action for problems that occur during library operation.

Table 5-4 Operating Problem

Problem	Corrective Action
The host computer cannot communicate with the library.	This may be a SCSI bus time-out or a premature disconnect problem. Check cable connections, cable length, SCSI addresses, and termination. Restart the host and the library. If the host and library still are not communicating, contact an authorized field service engineer.
A cable or terminator is disconnected from the library back panel.	Reconnect the cable or terminator.
A tape cartridge (medium) is reported not present.	This means that the gripper could not sense a tape cartridge in a particular storage element even though the inventory reports that it is present. Check to see if the designated cartridge is present. If it is, make sure it is properly seated. (For a tape drive, make sure the cartridge is completely unloaded.) Then retry the command. If the error persists, contact an authorized field service engineer.
A move command failed.	Check the source and destination elements. The source element should hold the cartridge to be moved; the destination element should be empty. Make sure the gripper is empty and all actuators are free of obstruction. Also, make sure the library is on-line and the Stop button is released. Retry the command.
A flash memory error is reported.	Contact an authorized field service engineer.
A maximum temperature exceeded warning appears.	Turn off the library and allow it to cool down. Lower the room temperature, if possible, and increase ventilation around the library. (If the operating temperature is too high, the library automatically shuts down until the temperature drops.)

Tape Drive Problems

Table 5-5 describes the corrective action for problems with the tape drives

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Table 5-5 Tape Drive Problems

Problem	Corrective Action
The library is unable to communicate with a drive.	This is indicated by a Drive Communication Time-out error. Contact a field service engineer.
The tape drive does not eject a cartridge.	Reset the library and retry the unload command. If the tape still does not unload, press the Standby button to place the library off-line, open the front door, and manually unload and eject the cartridge.
A drive handle error occurs.	Contact a field service engineer.

Glossary

A

abort To cancel or terminate a program, command, or procedure while in progress.

Abort button A button appearing on control panel “Command In Progress” screens, which allows you to cancel or terminate a command or operation in progress.

actuator One of the components that make up library robotics. Actuators in the TL895 library consist of the gripper, extension axis, vertical axis, and horizontal axis.

array A physical or logical structure with multiple rows and columns that a system or program treats as a single unit.

arrow buttons Buttons found in various control panel screens used to scroll through lists.

Auto Clean A user-defined mode in which the library automatically performs drive cleaning tasks as needed.

Auto Load A user-defined mode in which the library automatically moves cartridges in the load port to empty storage bins as soon as the load port door is closed.

automated tape library An enclosed data storage system consisting of storage elements, data transfer elements, DLT cartridges, and a robotic gripping mechanism used to identify, handle, and move the cartridges from one element to another.

B

Back button A control panel button that moves you backwards through previously selected screens.

Backspace button A button with a left-pointing arrow icon found in control panel screens with the keypad which allows you to eliminate a partial numeric entry character-by-character.

bar code A printed pattern of vertical bars of varying widths used for computerized inventory control.

bar code label A DLT cartridge identification label that includes a bar code.

bar code scanner A device mounted on the extension axis that reads the cartridge bar code labels.

bit The basic unit of information in a binary numbering system (*bi*nary digi*t*). A bit is represented by either 1 or 0. Eight bits make up each byte.

bus An interface designed to send and receive data.

byte The basic unit of computer memory, large enough to hold one character. A byte is composed of eight bits.

C

calibration A process used by the library robotics to determine the exact position of storage, data transfer, and import/export elements.

cartridge A case containing a supply reel with magnetic tape used as media for reading and writing computer data.

command A user-initiated signal given to a computer program that initiates, terminates, or otherwise controls the execution of a specific operation. In a menu-driven system such as the library control panel, you choose commands by pressing on-screen buttons.

compression The process of encoding data to take up less storage space on magnetic tape. Compression may be carried out by the host computer (software compression) or by the drive (hardware compression).

Contrast buttons Control panel buttons in the upper right corner of the display that adjust the contrast of the control panel screen.

control panel The panel on the front of the library that contains the library status displays.

D

data transfer element The SCSI designation for a disk or tape drive.

digital linear tape (DLT) A 0.5-inch, high-grade, metal-particle magnetic tape medium housed in a 4.1 x 4.1 x 1 inch cartridge. DLT technology is the intellectual property of Quantum Corporation.

drive access door The door on the right side of the library used to access tape drives for replacement or cabling.

E

element A SCSI designation for any device or bin in the library that can hold a DLT cartridge. SCSI elements include storage bins, tape drives, load port bins, and the gripper.

error message A message appearing on the host computer or library control panel screen informing you that the program was unable to carry out the desired operation.

execute To carry out the instructions in a computer program.

exercise A user-initiated, continuous operation in which the library robotics randomly moves tape cartridges from one library element to another. The exercise operation runs continuously until aborted.

extension axis Mounted on the vertical axis, an assembly that consists of the gripper and the horizontal axis upon which the gripper assembly is mounted.

F

FCC Class A A standard established by the U.S. Federal Communications Commission governing electromagnetic emissions in a commercial environment.

fixed storage array The matrix of all storage elements in the TL895 library, arranged in four columns by 24 rows and mounted on the library backplane.

Forward button A control panel button that moves you forward through previously selected screens.

front door The door at the front of the library used to access the front of each tape drive.

G

gigabyte (GB) A unit of measure for computer memory consisting of approximately one billion bytes (1,073,741,824) or 1,000 megabytes.

graphical user interface (GUI) A user interface made up of bit-mapped graphics resembling buttons and switches, designed to make it simpler to obtain information and choose and execute commands. The TL895 control panel uses a graphical user interface.

gripper An electromechanical assembly mounted on the extension axis that includes a sensor for reading bar codes and a gripping mechanism for handling DLT cartridges.

H

Home button A control panel button that returns you to the initial control panel screen.

horizontal carriage The rails, belt, and mechanisms that cause the extension axis to move from the front of the library to the back.

host computer The computer that issues SCSI commands to control the library robotics.

I

import/export element The SCSI designation for a load port bin.

interface A hardware or software protocol, contained in the electronics of the tape controller and tape drive, that manages the exchange of data between the drive and computer. The interface used with TL895 libraries is SCSI.

inventory An operation in which the library determines the identity and location of all tape cartridges and SCSI elements.

L

LCD Liquid crystal display.

library system A storage and retrieval system that uses a robotic mechanism to automatically load and unload tape cartridges into one or more tape drives.

load port The small revolving door on the front panel of the library with four storage bins for loading and unloading tape cartridges.

Load Port button A control panel button that opens or unlocks to close the load port, depending on the load port's current state.

lock icon Another name for the security level indicator (🔓) on the control panel.

M

media The material or device used to store information in a storage subsystem. The magnetic tape used in DLT cartridges is an example of high-grade media.

N

Nonvolatile RAM (NVRAM) Battery-powered random access memory used to store library configuration information even when the library is turned off.

O

off-line A state in which the library is not ready for communications with a host. The library must be placed in off-line mode before opening library doors, removing library cosmetic panels, or performing certain library commands such as configure library.

on-line A state in which the library is ready for communications with a host.

Operate Axes Test A system test initiated from the Service screen in the control panel that allows you to test each library axis in various ways.

P

password A sequence of characters used to gain access to protected portions of the computer system. The TL895 library control panel has an operator password and a service password consisting of 4 to 8 numeric characters.

pick The process of removing a cartridge from a source element in preparation for placing it in a destination element.

place The process of placing a cartridge in a destination element after it has been picked from source element.

R

RAM Random access memory. An integrated circuit memory chip that allows information to be stored and retrieved by a microprocessor or controller while the computer is running.

rear panel The rear cosmetic panel of the library that contains the AC power switch, AC power receptacle and connectors for attaching external cabling to the library.

retry The process of automatically attempting a failed command before issuing an error message.

S

SCSI Small computer system interface. An American National Standards Institute (ANSI) communications standard for attaching peripheral equipment to computers.

SCSI device A computer or computer peripheral connected to a SCSI bus. SCSI devices include the library robotics, host computers, library tape drives, and hard disk drives.

SCSI ID number A unique address (0 to 15) assigned to each device on a SCSI bus.

security level indicator A small “lock” icon ( ) on the control panel that shows the current security level setting. Three security levels are available: user (U), operator (O), and service (S). For more information, see “Control Panel” on page 1-4.

Standby button A control panel button that switches the library between on-line and off-line states.

Stop button. A control panel button that halts all library activity by cutting power to library robotics. Pressing the Stop button a second time restores power to library robotics.

storage array door The door on the left side of the library used to access the gripper and the fixed storage array.

storage bin Any of the small, rectangular containers that make up the fixed storage array, designed to hold a single DLT cartridge.

storage element The SCSI designation for a storage bin.

Systest Library A system test initiated from the Service screen in the control panel that tests all library components by swapping tape cartridges.

T

tape drive The mechanism that reads data from, and writes data to, a tape cartridge.

U

UL Underwriters Laboratories.

Unload button A button on the TZ89N tape drive that prepares a tape cartridge for removal from the drive. When you press this button, the drive rewinds the tape back into the cartridge.

Unload Drive button A control panel button in the Operator screen that allows you to unload a tape drive.

Unload Imp/Exp button A control panel button in the Operator screen that allows you to unload the load port when the Auto Load feature is disabled.

V

vertical carriage The rails, belts, and other mechanisms that cause the extension axis to move from the top of the library to the bottom.

W

write-enable To set a tape cartridge so that data can be written to it.

write-protect To set a tape cartridge so that data cannot be written to it or erased from it.

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W