

TL895 DLT™ Tape Library

Facilities Planning and Installation Guide

EK-TL895-IG

Revision A03

digital

TL895 DLT Tape Library Facilities Planning and Installation Guide, EK-TL895-IG, Revision A03, March 17, 1998. Made in USA.

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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.

Cer appareil numerique de la classe A respecte toutes les exigences du Reglement sur le materiel brouilleur du Canada.

CISPR-22 Warning!

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

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 environnement domestique, ce produit peut causer des interférences radio lectriques. Il appartient alors a 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 100-120 V.

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

Fiche	Broches parallèles avec une broche de mise à la terre (configuration NEMA 5-15P)
Cordon	Type: SJT, trifilaire 16 ou 18 AWG
Longueur	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 vermeiden, darf das Gehäuse nicht geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur einem Fachmann.

Achtung

Da der interne Laserstrahl in Ihre Augen eindringen und Verletzungen verursachen kann, darf das Gehäuse nicht selbst geöffnet werden. Überlassen Sie Wartungsarbeiten 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 überprüfen, 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 Vorhängen, Tapeten usw. auf, da hierdurch die Ventilationsöffnungen blockiert werden können.

Zur Reinigung

Verwenden Sie zur Reinigung 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.

LITHIUM BATTERY STATEMENT

CAUTION - The tape library contains a lithium battery. The Dallas Semiconductor DS1225AB-200 on the Robotic Controller board contains a Lithium battery. Lithium may be considered a hazardous material. Dispose of this battery in accordance with local, state, and federal laws.

FORSIGTIG - Båndbiblioteket indeholder et lithiumbatteri. Dallas halvleder DS1225AB-200 på robotkontrolltavlen indeholder et lithiumbatteri. Lithium kan anses for at være et sundhedsfarligt materiale. Kassér dette batteri i overensstemmelse med lokale og nationale lovbestemmelser.

HUOMAUTUS - Nauhakirjastossa on litiumparisto. Robottiohjainkortin Dallas DS1225AB-200-puolijohteessa on litiumparisto. Litium voidaan luokitella vaaralliseksi aineeksi. Pariston hävittämisessä on noudatettava viranomaisten antamia ohjeita ja määräyksiä.

ATTENTION - La bibliothèque de bande contient une pile au lithium. Le Dallas Semiconductor DS1225AB-200 sur la carte Robotic Controller contient une pile au lithium. Le lithium peut être considéré comme matériau dangereux. Jeter cette pile conformément aux lois locales, d'Etat et fédérales.

ACHTUNG! - Die Bandbibliothek enthält eine Lithiumbatterie. Der Halbleiter Dallas DS1225AB-200 auf dem Roboter-Controller enthält eine Lithiumbatterie. Lithium gilt als Schadstoff. Bei der Entsorgung dieser Batterie alle entsprechenden kommunalen, staatlichen und bundesweiten Vorschriften beachten!

ATTENZIONE - La libreria a nastro magnetico contiene una batteria al litio. Il semiconduttore Dallas DS1225AB-200 sulla scheda Controller Robotic contiene una batteria al litio. Il litio può essere considerato un materiale pericoloso. Eliminare queste batterie in conformità alle normative locali e statali vigenti.

FORSIKTIG - Kassettbiblioteket inneholder et litiumbatteri. Enheten Dallas Semiconductor DS1225AB-200 på robotkontrollkortet inneholder et litiumbatteri. Litium kan anses som et farlig materiale. Batteriet skal kastes i henhold til lokal og nasjonal lovgivning.

PRECAUCIÓN - La biblioteca de cintas contiene una pila de litio. El semiconductor Dallas DS1225AB-200 en el tablero controlador Robotic contiene una pila de litio. El litio puede considerarse como un material peligroso. Deseche esta pila de acuerdo con las leyes municipales, estatales y federales.

WARNING! - Magnetbandsbiblioteket innehåller ett litiumbatteri. Dallas halvledare DS1225AB-200 på robotstyrkortet innehåller ett litiumbatteri. Litium kan anses vara ett farligt material. Kassera detta batteri i enlighet med lokala och statliga lagar och förordningar.

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Preface

This document was written for Field Service Engineers (FSEs) of the TL895 Automated Tape Library. It describes facility preparation and provides the procedures for first-time installation of the library. This document includes the following:

- The “Preface” describes the purpose of this manual and provides a list of its contents and a list of related documentation.
- Chapter 1, “TL895 Specifications and Site Requirements,” provides the specifications of the library and describes flooring, environmental, and electrical requirements.
- Chapter 2, “Unpacking and Moving the TL895,” describes how to unpack and move the library to its final installation site.
- Chapter 3, “Installing the TL895,” lists the tools required and provides the procedures necessary for installing and testing the library prior to operation.

Conventions Used in This Guide

Note: A note indicates information that requires special emphasis.

Caution: A caution indicates that a potential hazard to equipment or data exists and is included to help prevent damage.

Warning: A warning indicates that a potential hazard to your personal safety exists and is included to help prevent injuries.

Related Documentation

The table below lists documents associated with the TL895. To obtain further information or copies of documentation, contact:

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

Please specify the part number when placing a document order.

Document Number	Title	Description
EK-TL895-IG	<i>TL895 DLT Tape Library Facilities Planning and Installation Guide</i>	Describes facility preparation and provides the procedures for first-time installation of the library.
EK-TL895-OG	<i>TL895 DLT Tape Library Operator's Guide</i>	Describes the operator-accessible components of the library and provides operating and troubleshooting procedures.
EK-TL895-UM	<i>TL895 DLT Tape Library Diagnostic Software User's Manual</i>	Provides procedures for installing and using the TL895 diagnostic software.
6241103	<i>ATL7100 Series Automated Tape Library for DLT Cartridges Field Service Manual</i>	Contains periodic maintenance, fault isolation and removal and replacement procedures.
6241105	<i>ATL 520 and ATL 7100 Automated Tape Libraries Software Interface Guide</i>	Provides information for software engineers and programmers who are developing applications to control the TL895.
EK-TZ89N-UG	<i>TZ89 DLT Series Tape Drive User's Guide</i>	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 Equipment Corporation Intranet, you can obtain:

- tape library manuals in PDF format
- tape drive manuals in PDF format
- firmware
- utility software
- product information
- technical contacts list

Digital Equipment Corporation, Shrewsbury MA can be reached 24 hours a day, 7 days a week at:

<http://alcor.shr.dec.com/tapes.htm>

or

<http://whatsa.shr.dec.com>

ATL Products Web Site

Tape library manuals not available on the Digital Equipment Corporation Intranet, can be accessed on the ATL Products web site at:

<http://www.atlp.com>

Chapter 1

TL895 Specifications and Site Requirements

This section provides the TL895 physical specifications and describes the floor and electrical requirements of the installation site.

Library Description

The TL895 (see figure 1-1) is an automated tape library which contains up to seven TZ89N tape drives and stores a maximum of 96 Digital Linear Tape (DLT™) cartridges in a Fixed Storage Array (FSA). An operator-accessible load port at the front of the library can hold an additional four tape cartridges for a maximum total of 100.

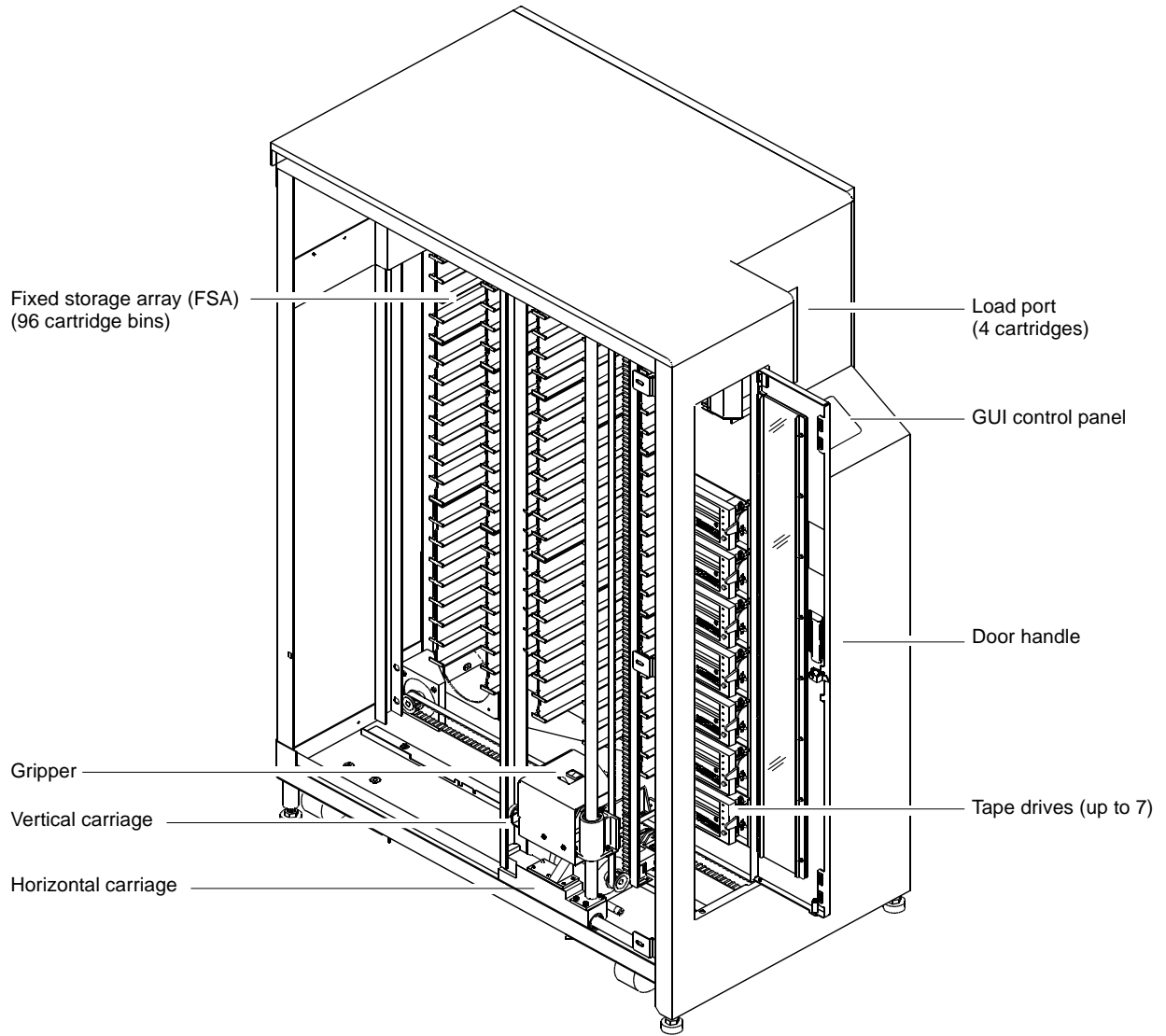
A host computer communicates with the library through a SCSI interface using the SCSI-2 medium changer command set. In a typical operation, the host commands the robotics to transfer tape cartridges between storage bins (in the FSA), tape drives or the load port. Each time a tape cartridge is transferred, a gripping mechanism is moved to the tape cartridge location where it “picks” the tape cartridge, then moves to and “places” the cartridge in the new location.

Supported Tape Drives and Cartridges

The TL895 library is capable of supporting up to seven TZ89N tape drives. The library supports the CompacTape III™ (dark gray), CompacTape IIIXT™ (white), and CompacTape IV™ (black) cartridges.

Caution: DO NOT USE CompacTape I™, or CompacTape II™ tape cartridges in this library.

Figure 1-1 TL895 (Left Panel Removed)

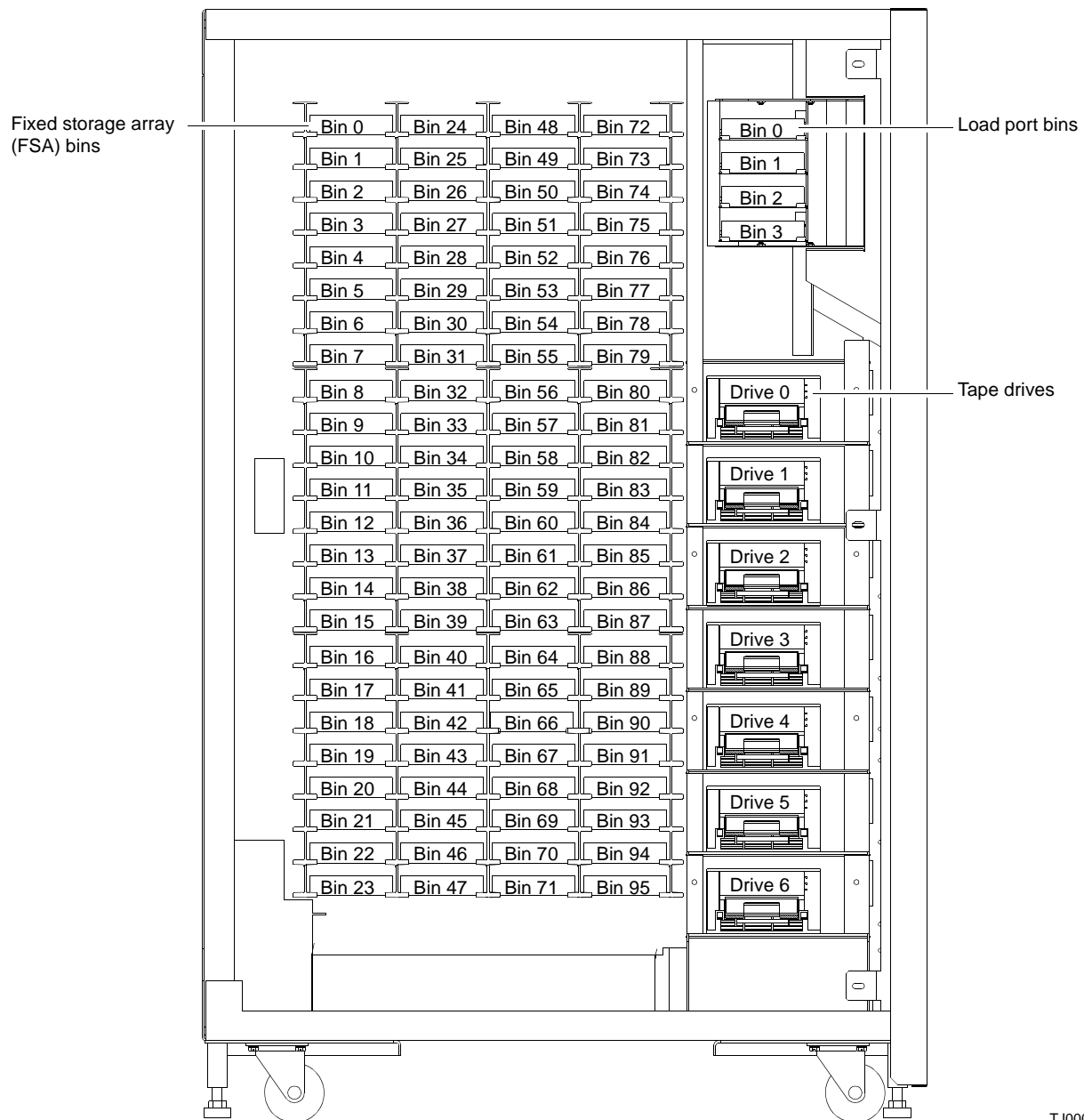


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Bin and Tape Drive Numbering Conventions

Figure 1-2 shows the numbering conventions for the fixed storage array bins, load port bins, and tape drives.

Figure 1-2 Numbering Conventions



TJ00001A

Library Specifications

The following tables provide the TL895 specifications.

Table 1-1 Mechanical Specifications

height	56.5 inches (143.5 cm)
width	23.5 inches (59.7 cm)
depth	36.5 inches (92.7 cm)
weight	500 lb. (227 kg) with 100 DLT cartridges and 7 DLT tape drives installed

Table 1-2 Power Specifications

AC power rating	100-120V/200-240V, 7A/3.5A, 50/60 Hz
AC voltage range	90-132 VAC or 180-264 VAC
frequency range	47-63 Hz

Table 1-3 Environmental Specifications

Operating	
Humidity	20% to 80%, non-condensing
Temperature	15°C to 32°C (59°F to 90°F)
Altitude	Sea level to 10,000 ft.
Non-operating (shipping/storage)	
Humidity	5% to 95%, non-condensing
Temperature	-40°C to 66°C (-40°F to 151°F)
Altitude	Sea level to 12,000 ft.

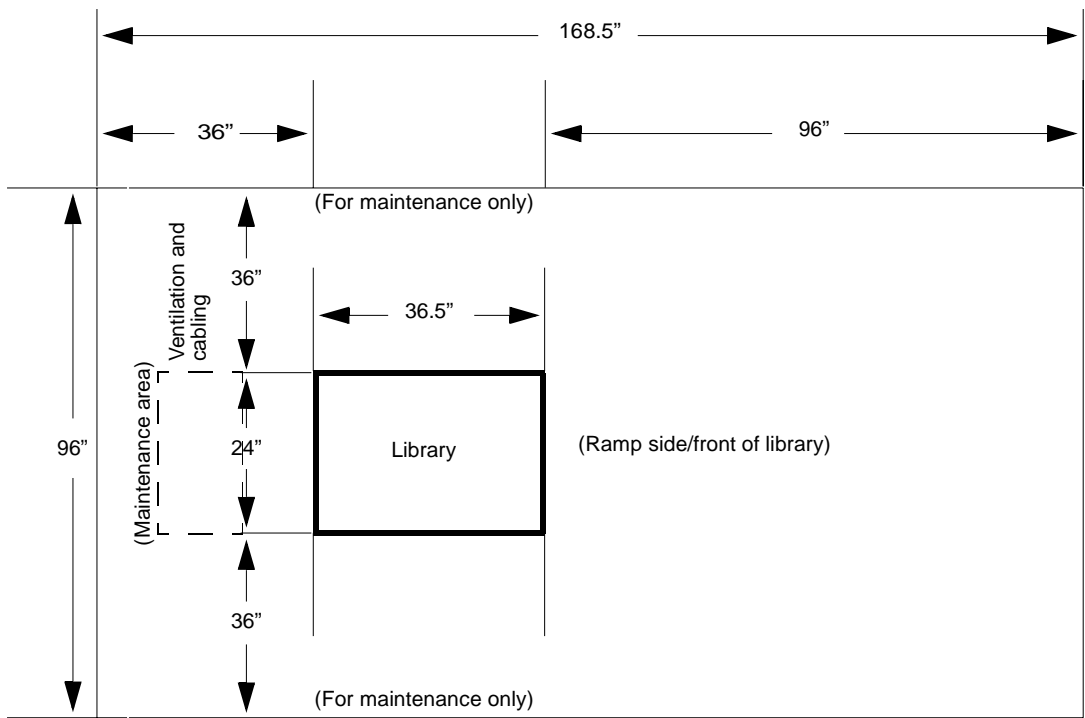
Site Requirements

The following paragraphs provide the floor space, leveling, and loading requirements for the TL895 installation site.

Floor Space

Figure 1-3 shows the floor space required by the TL895 library, including the off-load and maintenance access areas.

Figure 1-3 Floor Space Requirements



Floor Leveling

The floor must be level to within 0.25 inch (0.635 cm) over a 6 ft. x 6ft. (2.02 m x 2.02 m) area.

Floor Loading

A standard raised computer floor rated at 250 lb/ft² (122 grams/sq cm) is sufficient to support a fully loaded TL895 library.

Floor Clearance

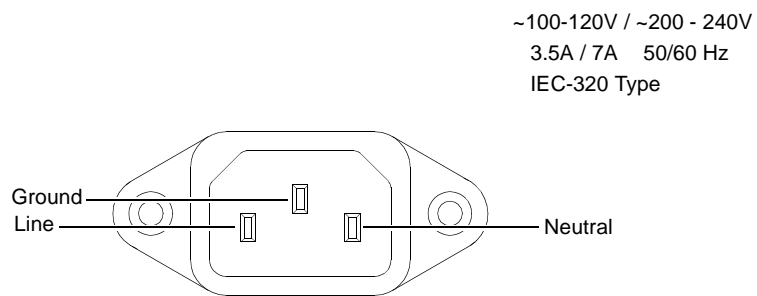
The cabinet has a nominal floor clearance of 0.75 inch (1.9cm).

Power

The library's auto-ranging motor and logic power supplies will accept single phase, 90-264 VAC input power at 47-63 Hz.

The power inlet connector is an IEC-320 connector. The standard power cord that comes with the library has an IEC-320 female connector on one end and a NEMA 5-15P male plug on the other end. For international applications replace the power cord with a harmonized 3x2.0 mm² power cord that is approved by the country where used.

Figure 1-4 AC Power Receptacle



Grounding

The TL895 must be plugged into a properly grounded electrical outlet.

Site Requirements

Chapter 2

Unpacking and Moving the TL895

This chapter describes how to unpack and move the TL895 to its final installation site.

Receiving the TL895

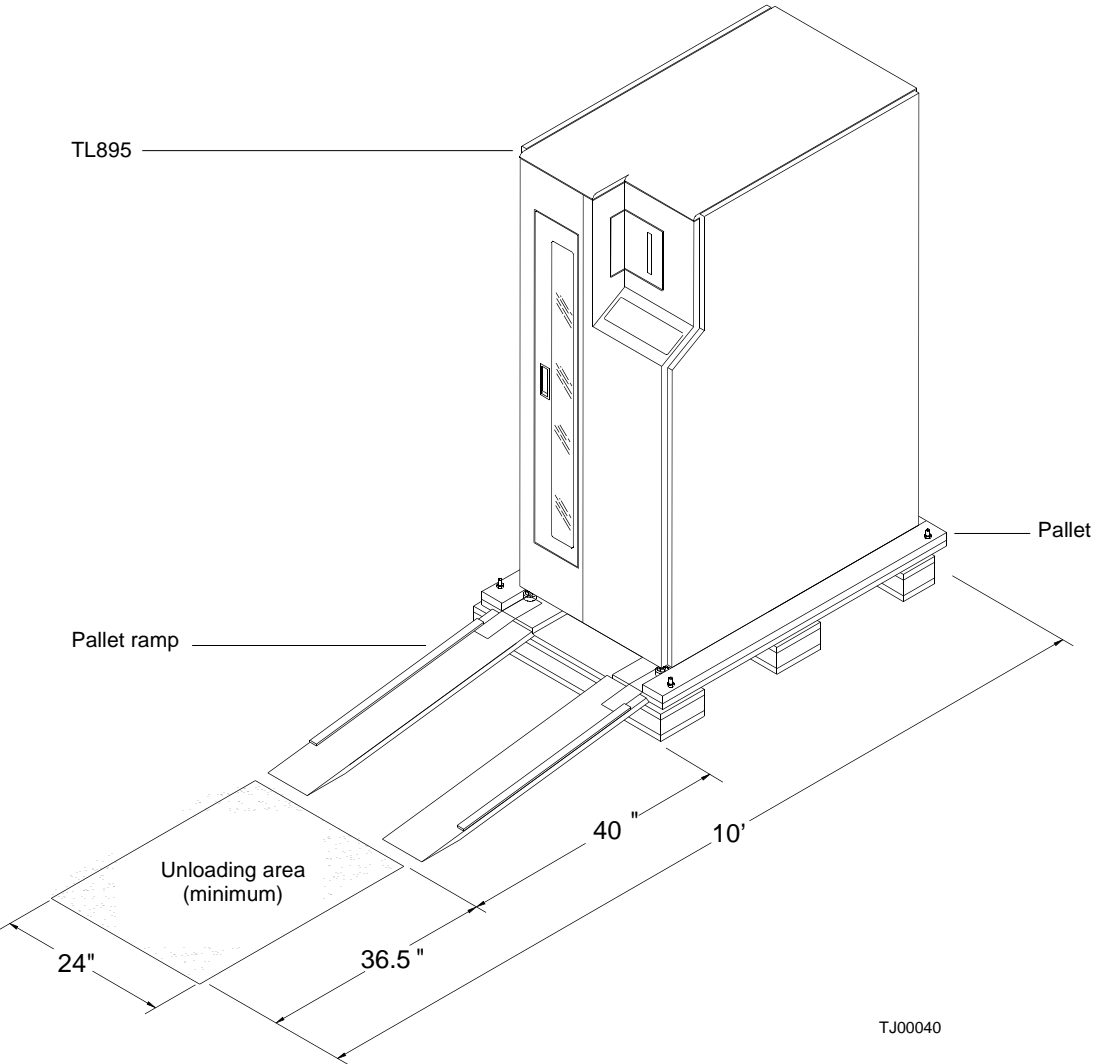
Table 2-1 contains a list of items shipped with the TL895. When you receive the crated library:

- Unload it as close to the final installation area as possible.
- Allow approximately 10 feet in front of the off-load side of the pallet for lowering the ramp before removing the library from the pallet.
- Inspect the crating material for any shipping damage. Report any damage found to the shipper immediately.

Table 2-1 Shipping List

Quantity	Item
1	TL895 base unit (crated with ramp)
1	Accessories kit with the following items: <ul style="list-style-type: none"> • <i>TL895 Facilities Planning and Installation Guide</i> • <i>TL895 Operator's Guide</i> • <i>TZ89N Cartridge Tape Drive Product Manual</i> • <i>TL895 Diagnostic Software User's Manual</i> • (1) 3.5 inch diagnostic software diskette • (1) AC power cord (US) • (1) RS-232 cable • (264) data cartridge labels (in AAAnnn format) • (33) cleaning cartridge labels (in CLNnnn format) • (1) tube of lubricant • (1) bag of cotton swabs • (4) SCSI-3 cable assemblies • (1) DLT CompacTape IV • (1) DLT cleaning cartridge • (1) Media Robot Utility kit • (2) door keys

Figure 2-1 Library
Unloading Space
Requirements

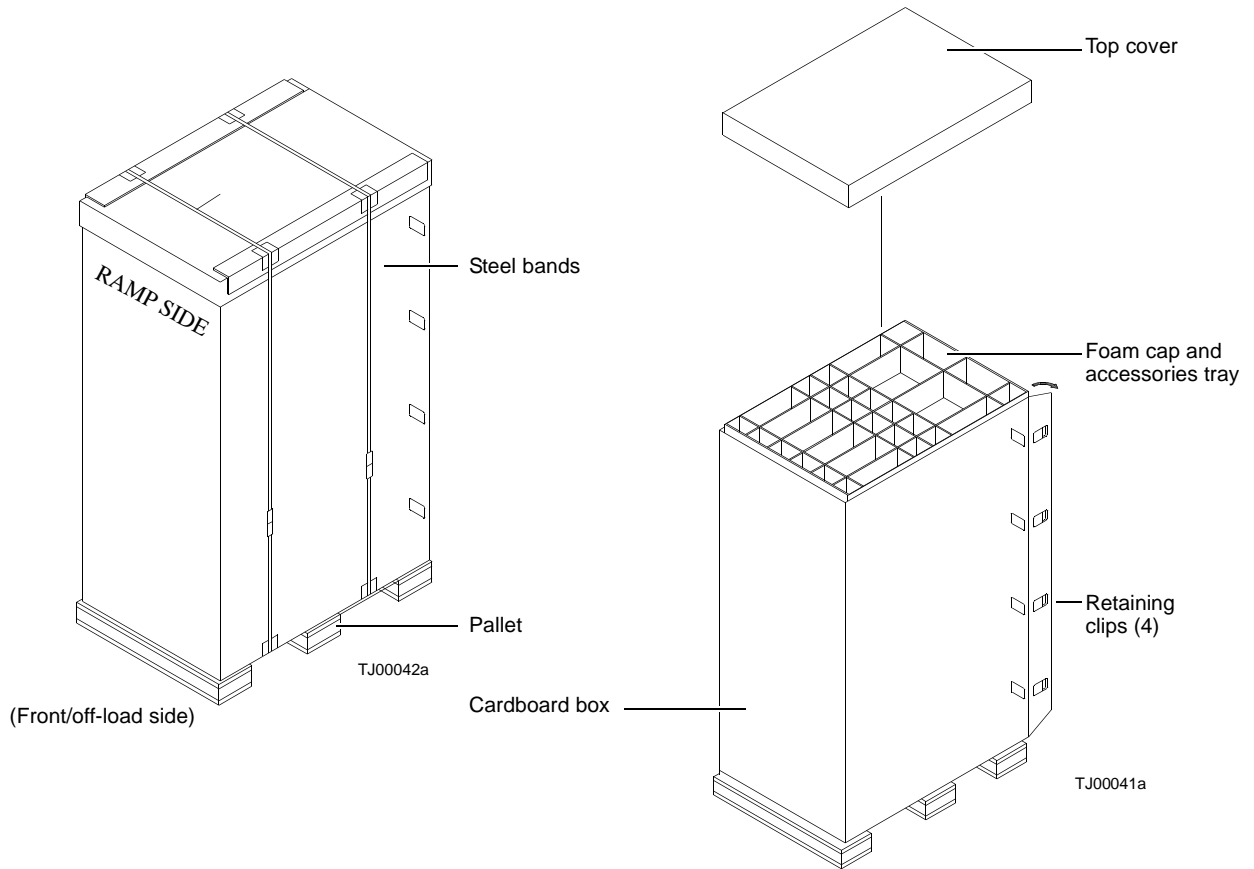


Unpacking the TL895

Refer to figure 2-2 for the following procedure.

Step	Action
Warning: Use care when cutting the steel bands that secure the library to the pallet. These bands are under tension and will snap when cut.	
1	Cut the two steel bands that secure the library and packing material to the pallet.
2	Lift the cardboard box top cover straight up and off the pallet.
3	Open the four retaining clips on the cardboard box and unwrap the box.
4	Lift the foam cap up and off the library.
5	Remove the accessories tray from the top of the foam cap.
6	Verify that you have received all of the accessories (see table 2-1 on page 2-2).

Figure 2-2 Removing the Box from the Pallet



Unpacking the TL895

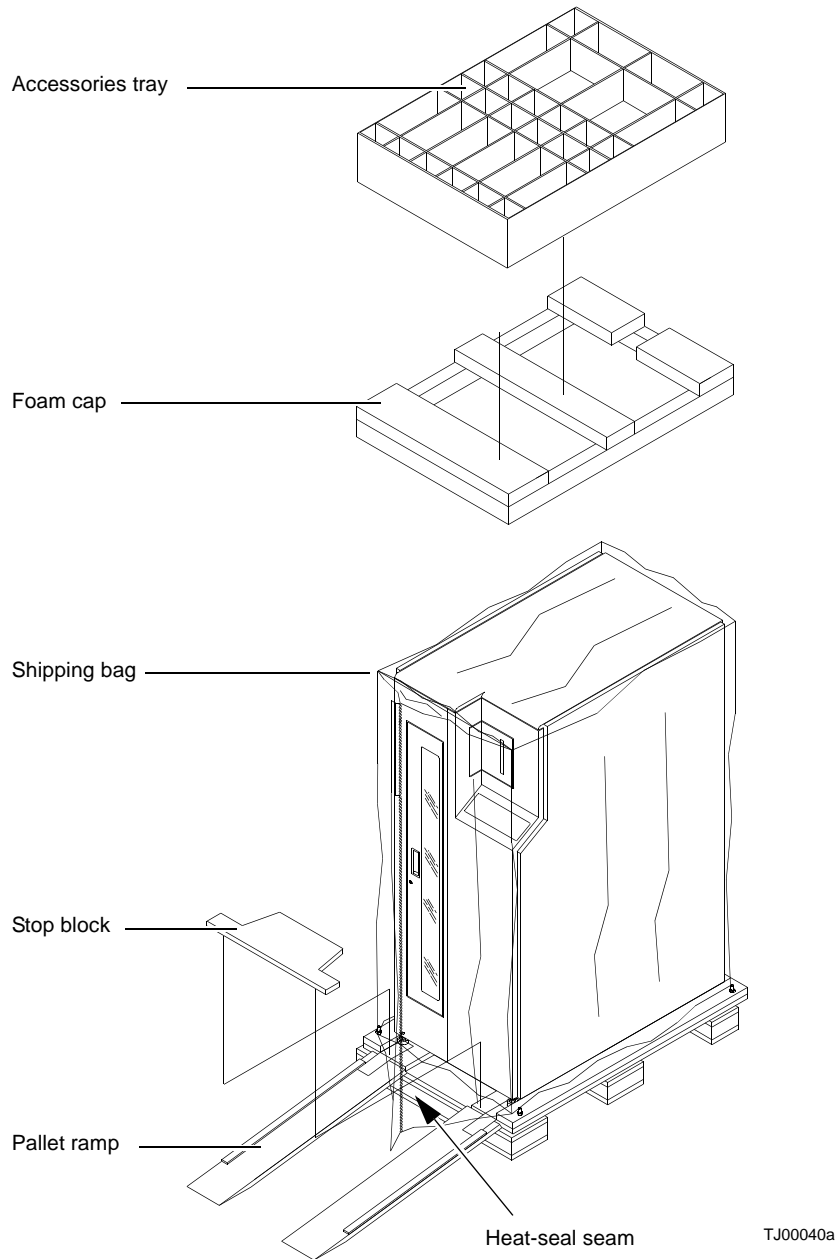
Refer to figure 2-3 to continue the unpacking procedure:

Step	Action
7	Remove the stop block.
8	Slide out the two pallet ramps (located under the library) and secure them to the pallet using the Velcro straps.
9	Carefully cut the shipping bag along the vertical heat-seal seam.
10	Verify the library leveling feet at the bottom four corners of the library are fully retracted. If not, spin them up all the way.

Warning: The library weighs approximately 500 lbs. Two people should perform the following procedure.

11	Roll the library off the pallet: <ul style="list-style-type: none">• one person guides the library at the off-load side of the pallet• one person gently pushes the library down the ramp and onto the floor
12	Carefully fold and save the shipping bag for possible future use.

Figure 2-3 Unpacking the TL895



Moving the TL895 to the Final Installation Site

Warning: The TL895 weighs approximately 500 lbs. Two people should perform the following procedure.

When moving the cabinet:

- One person guides the library from the rear.
- One person pushes from the front.

Note: Do not push the library up or down a ramp with an incline greater than 10°.

Floor Clearance

The TL895 has a nominal floor clearance of 0.75 inch (1.9cm). Place stiff plastic or rubber mats over thick carpeting, door jambs, and floor cracks before rolling the library over them.

Maneuvering the TL895

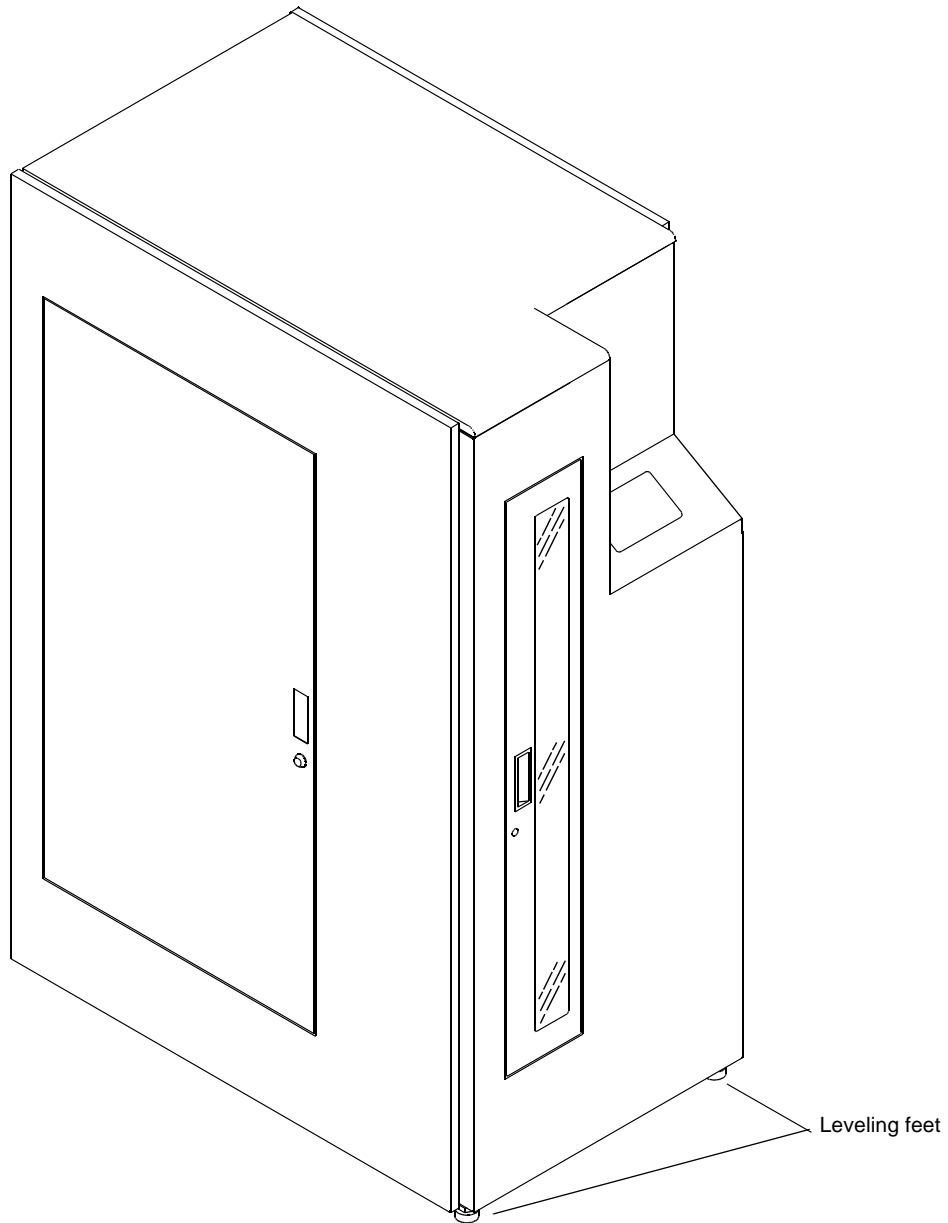
When pushing the TL895, DO NOT push on the following non-structural components:

- load port door
- control panel
- front door

To move the TL895 to the final installation site:

Step	Action
1	Prepare the path to the final installation site.
2	Verify the library leveling feet at the bottom four corners of the library are fully retracted. If not, spin them up all the way.
3	Roll the library to the final installation site.

Figure 2-4 TL895 Library



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Removing the Protective Packaging Material

Removing the Packing Blocks and Tie-Wraps

Refer to figure 2-5 and figure 2-6 for the following procedure:

Step	Action
1	Locate the library door keys in the accessories kit.
2	Unlock and open the front door.
3	Raise the load port solenoid, rotate the load port open and remove the foam packing in the load port (see figure 2-5).
4	Unlock and open the storage array door.
5	Remove (without cutting) the reusable tie-wrap securing the vertical carriage to the horizontal carriage (see figure 2-6).
6	Raise the extension axis and remove the vertical axis block.
7	Remove (without cutting) the tie-wraps securing the horizontal carriage assembly to the frame.
8	Slide the carriage assembly forward.
9	Remove the top and bottom horizontal axis blocks.
10	Remove (without cutting) the extension axis tie-wrap.

Caution: Use appropriate ESD protection, including smock, wristband, and grounding strap, etc.

Figure 2-5 Removing the Load Port Foam

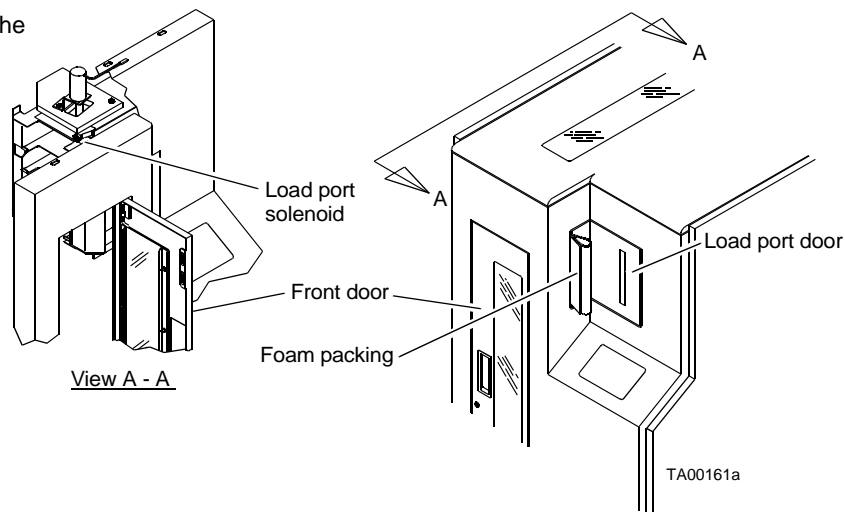
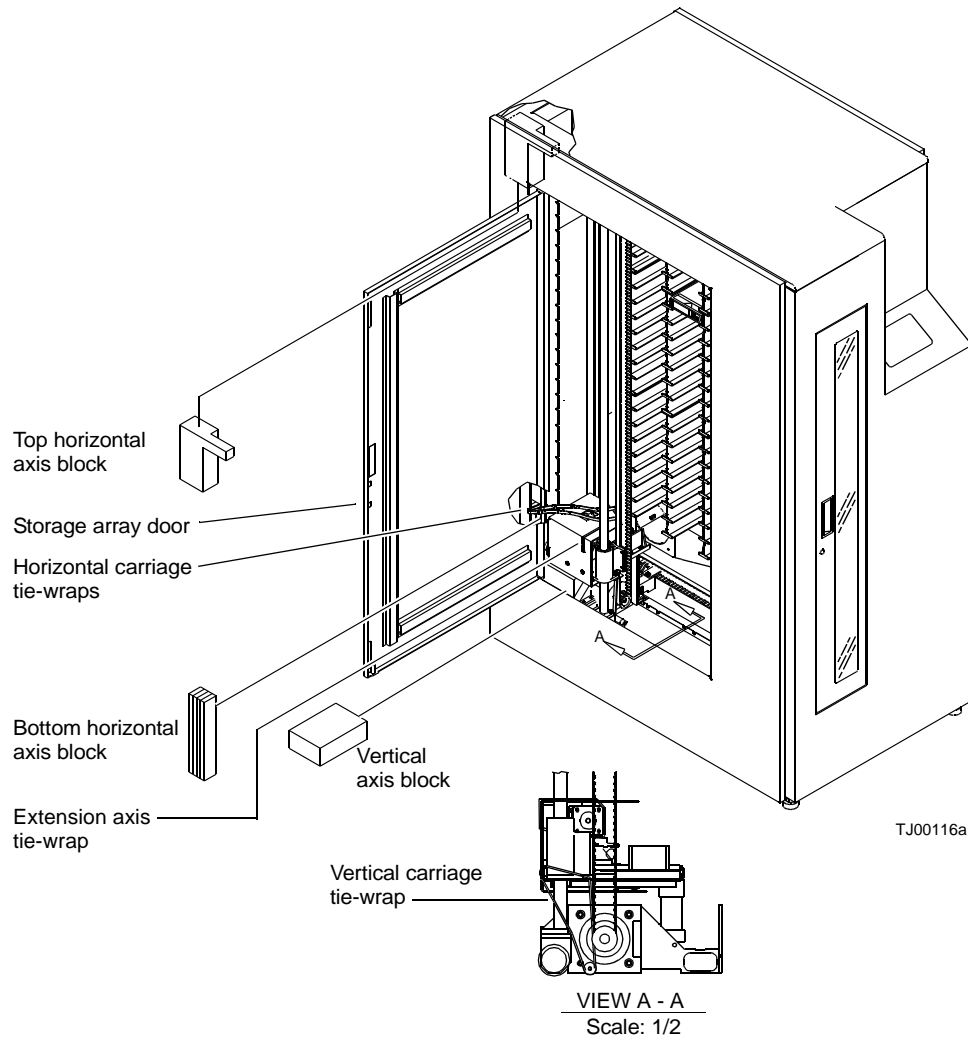


Figure 2-6 Packing Block Locations



Storing the Packaging Material

To store the TL895 packaging material:

Step	Action
1	Slide the two pallet ramps into their shipping position in the pallet.
2	Secure the ramps with the Velcro straps provided.
3	Collapse the cardboard box.
4	Store the box, top foam insert, pallet and all other packaging material for possible later use.

Repackaging the TL895

Follow the steps below to repack the TL895.

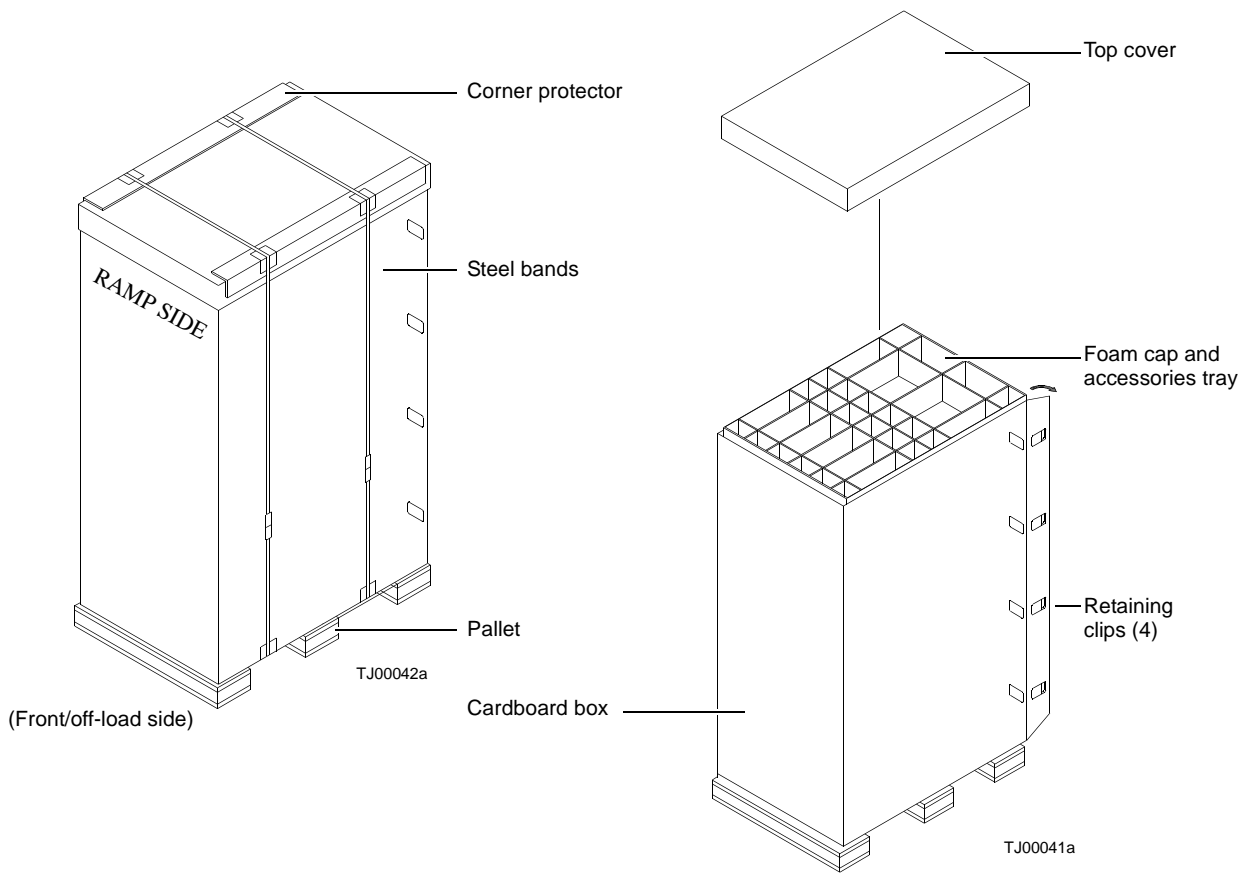
Caution: Use appropriate ESD protection, including smock, wristband, and grounding strap, etc.

Step	Action
1	Remove all cartridges from the library.
2	Remove power from the library.
3	Disconnect the interface and power cables.
4	Open the storage array door.
5	Raise the extension axis and place the vertical axis block in position, then lower the extension axis (see figure 2-6 on page 2-11).
6	Install the top and bottom horizontal axis blocks.
7	Slide the robotic mechanism towards the rear of the library so it is against the horizontal axis packing blocks.
8	Install two tie-wraps securing the robotics mechanism to the library frame.
9	Install the extension axis tie-wrap.
10	Install the vertical carriage tie-wrap.
11	Install the foam packing between the load port and the front panel, and close the load port (see figure 2-5 on page 2-10).
12	Close the storage array door.
13	Raise the four leveling feet at the corners of the library.
14	Move the library to the crating area observing all guidelines described in <i>Moving the TL895 to the Final Installation Site</i> on page 2-8.
15	Slide out the two pallet ramps (located in the pallet) and secure them to the pallet using the Velcro straps (see figure 2-3 on page 2-7).
16	Unfold the shipping bag and align the white tape to the pallet bottom where the library casters will roll onto the pallet.
17	Roll the library onto the pallet and into the shipping bag.

Step	Action
18	Seal the shipping bag by folding the seam over and taping the edge.
19	Install the stop block in front of library front casters (see figure 2-3 on page 2-7).
20	Install the foam cap on the library and install the accessory kit tray on top of the foam cap (see figure 2-7).
21	Wrap the box around the library and pallet and install the four plastic retaining clips.
22	Install the top cover and corner protectors.
23	Install two steel bands around the library box and pallet.
24	Tighten the steel bands to approximately 200 lbs. of tension.

Repackaging the TL895

Figure 2-7 Repackaging the Library



Chapter 3

Installing the TL895

This chapter describes the TL895 installation procedures.

Note: The customer's system administrator should be present during these procedures.

Required Tools

Required Tools

The tools listed in Table 3-1 are required for installation of the TL895.

Table 3-1 Required Tools

Quantity	Item
1	#2 Phillips screwdriver
1	wire cutters
1	carpenter's level
1	¾ inch open-end wrench
1	Digital Voltmeter (DVM)
1	ESD protection kit

Leveling the TL895

To level the TL895:

Step	Action
Note:	You will level the TL895 one side at a time, starting at the front, moving clockwise, and ending with the right side.
1	Move the TL895 to its final installation site.
2	Lower each leveling foot of the library until it just makes contact with the floor, and then rotate each foot 1/4 turn lower.

Caution: DO NOT lower any leveling foot so far that excess weight is transferred to any single foot.

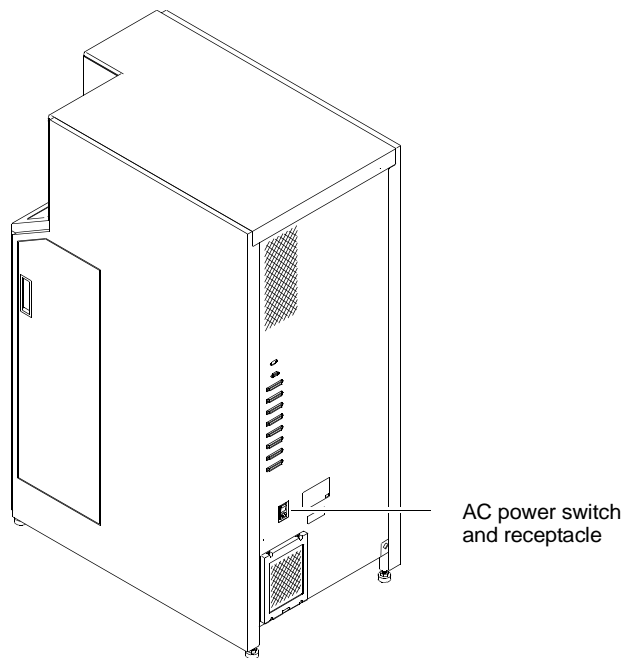
3	Center a carpenter's level at the top of the library along the front edge.
4	Adjust the two front leveling feet until the front edge of the library is level.
5	Center the carpenter's level at the top of the library along the left edge.
6	Adjust the two left side leveling feet until the left edge of the library is level.
7	Center the carpenter's level at the top of the library along the rear edge.
8	Adjust the two rear leveling feet until the rear edge of the library is level.
9	Center a carpenter's level at the top of the library along the right side.
10	Adjust the two right side leveling feet until the right edge of the library is level.
11	Recheck the level of the front, left side, rear, and right side of the library. Make any minor adjustments necessary to complete the leveling process.

Applying Power to the TL895

Use the following procedure to turn on the TL895:

Step	Action
1	Verify that: <ul style="list-style-type: none">• all actuators move freely• all cosmetic panels are installed• all doors are closed• power switch is in the “0” (off) position
2	Use a DVM to confirm that facility power is between 90 and 132 VAC or 180 and 264 VAC.
3	Connect the AC power cord to the TL895 power receptacle and facility power.
4	Set the power switch to the “I” (on) position.

Figure 3-1 Power Switch and Receptacle



Setting SCSI Addresses and Running the Library Self-Test

After power is applied to the TL895, refer to the *TL895 DLT Tape Library Operator's Guide* to perform the following:

- Set the library SCSI address
- Set the tape drive SCSI addresses
- Run a library self-test

Connecting the TL895 to the Host Computer

The TL895 is shipped with the internal cabling configured for five separate host SCSI connections (five-bus), with all SCSI busses terminated at the tape drive PWA. Alternate host connection configurations are discussed in Appendix A, “SCSI Cabling Options.”

Note: Internal SCSI cabling changes are required to change from the default library configuration. Extra internal cables are provided in the library accessories kit. The accessories kit does NOT include any additional external cables or terminators for connection to the host computer.

The following procedure describes how to connect a TL895 to the host when using the default five-bus, five-drive configuration.

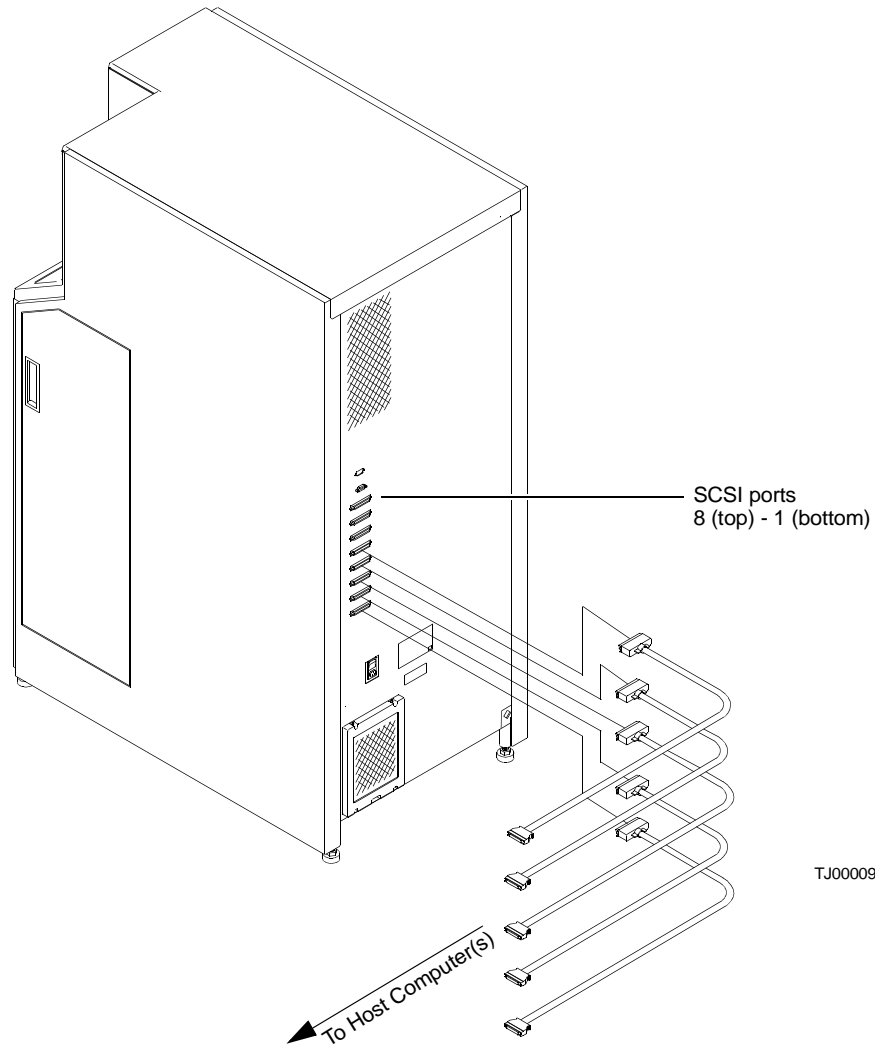
Step	Action
1	Press the control panel STANDBY button, and wait until the control panel displays System Off-line.
2	Set the TL895 power switch to the “0” (off) position.
3	Remove power from all SCSI devices on the same SCSI bus to which the TL895 will be connected.

Caution: The TL895 is a differential SCSI device. If your host adapter is single-ended SCSI, you must use a single-ended-to-differential converter. Connecting a differential device directly to a single-ended device may result in damage to both devices.

4	Connect the five host-to-library SCSI cables to the respective host adapters.
5	Connect the five host-to-library SCSI cables to ports 1 through 5 on the rear of the TL895.
6	Set the TL895 power switch to the “ ” (on) position.
7	Apply power to the host.

Figure 3-2 shows a five-bus, five-drive configuration. For other configurations see Appendix A, “SCSI Cabling Options.”

Figure 3-2 Host-to-Library Connection



Preparing the TL895 for Operation

After the TL895 is installed and connected to the host, refer to the *TL895 DLT Tape Library Operator's Guide* to perform the procedures listed below:

- define the library power-up state
- enable/disable the auto clean option
- enable/disable the auto load option
- set the number of bar code retries
(set to 8 if using CompacTape IIIXT tapes)
- enable/disable auto drive unload
- load the library with cartridges (through the load port or by bulk loading of cartridges through the storage array door)
- perform an inventory
- turn the interior light on or off

Appendix A

SCSI Cabling Options

The TL895 default configuration is five tape drives configured on five separate SCSI busses (five-bus configuration). The tape drives and the library can be reconfigured according to the user's needs by using the SCSI jumper cables (PN 6210567) provided in the accessories kit shipped with each unit.

This appendix details the default five-bus configuration and the optional three-bus configuration.

The TL895 has eight 68-pin Micro-D SCSI connectors on the rear of the unit labeled SCSI PORT 1 (bottom) through SCSI PORT 8 (top).

Note: Host-to-library SCSI cables are not supplied with the library.

Five-Bus (Default) Configuration

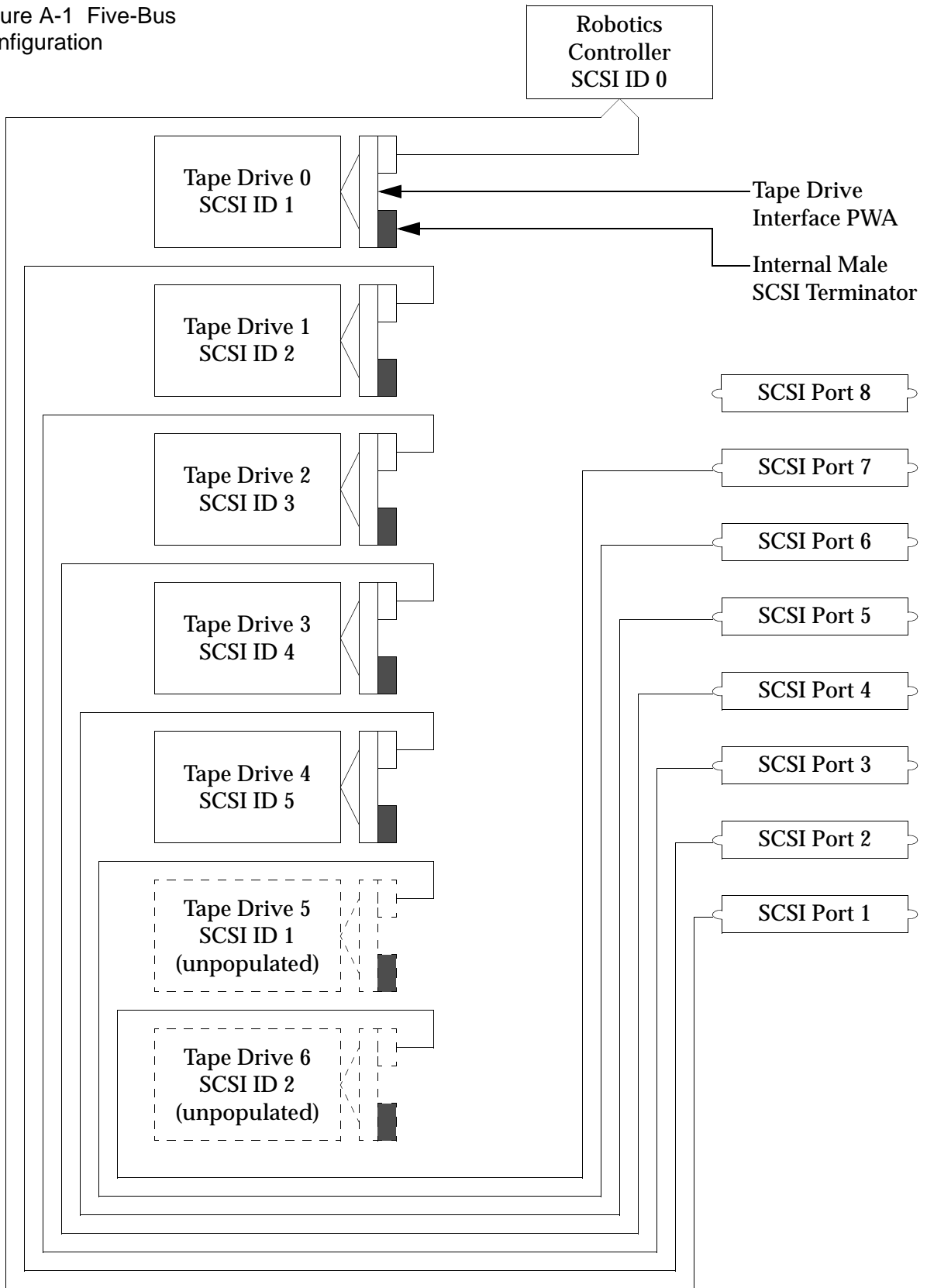
In the five-bus (default) configuration, SCSI port 1 is connected to the robotics controller and daisy-chained to tape drive 0, then terminated at the tape drive 0 interface PWA. Consecutive SCSI ports 2 through 5 are cabled to consecutive tape drives 1 through 4, and terminated at each respective tape drive interface PWA. SCSI ports 6 and 7 are available for optional tape drives. SCSI port 8 is not used.

SCSI cabling and address assignments for the five-bus (default) configuration are shown in table A-1 and figure A-1.

Table A-1 Five-Bus Configuration

SCSI Port	SCSI Device	SCSI Address	Terminates At
1	Robotics controller	0	
	Tape drive 0 (top)	1	Tape drive 0
2	Tape drive 1	2	Tape drive 1
3	Tape drive 2	3	Tape drive 2
4	Tape drive 3	4	Tape drive 3
5	Tape drive 4	5	Tape drive 4
6	Tape drive 5 (optional)	1	Tape drive 5
7	Tape drive 6 (optional)	2	Tape drive 6
8	not used	--	-----

Figure A-1 Five-Bus Configuration



Three-Bus Configuration

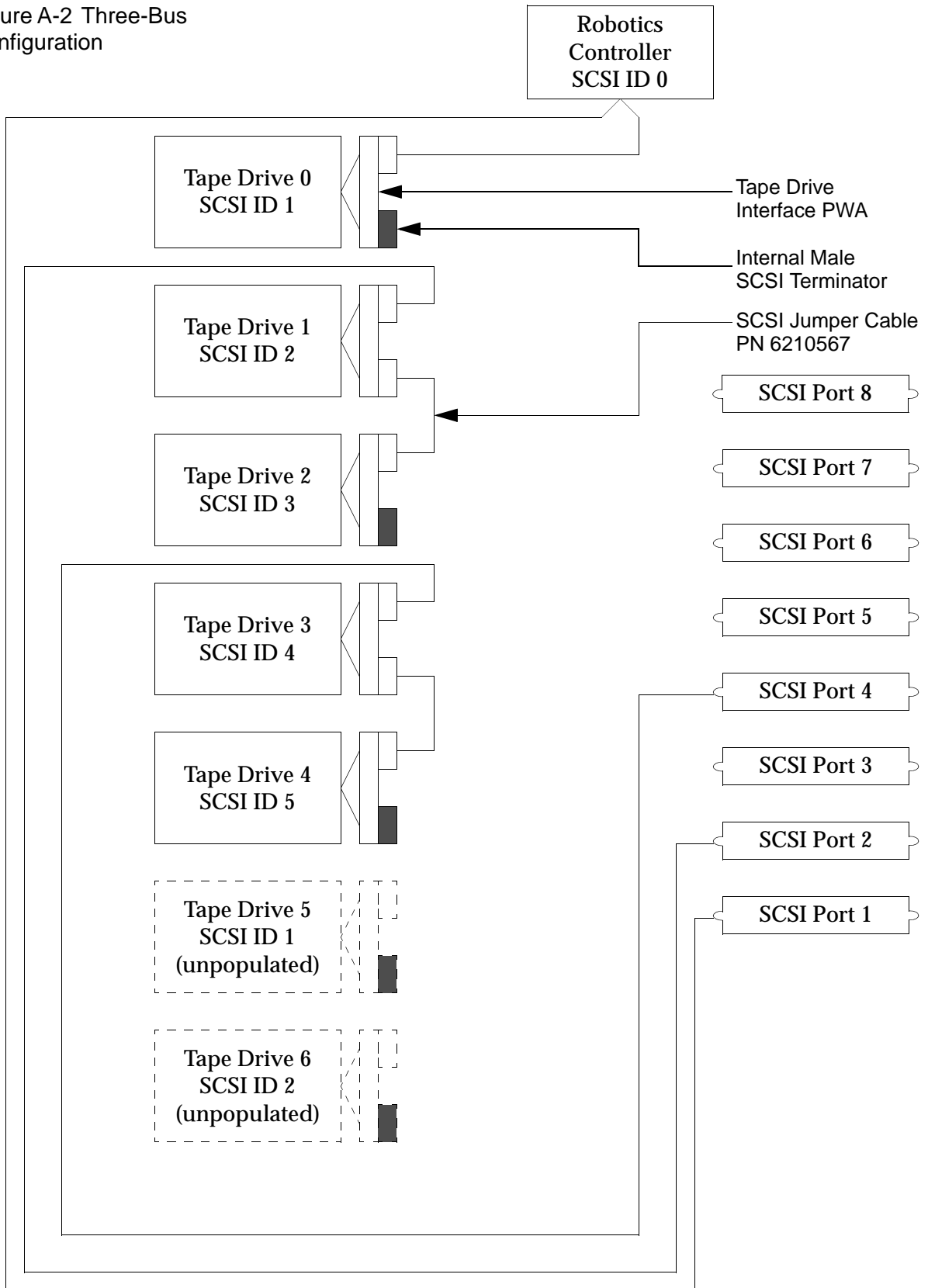
In the three-bus configuration, SCSI port 1 is connected to the robotics controller and daisy-chained to tape drive 0, then terminated at the tape drive 0 interface PWA. SCSI port 2 is connected to tape drive 1, then daisy-chained to tape drive 2, and terminated at the tape drive 2 interface PWA. SCSI port 3 is unused. SCSI port 4 is connected to tape drive 3, then daisy-chained to tape drive 4, and terminated at the tape drive 4 interface PWA.

SCSI cabling and address assignments for the three-bus configuration are shown in table A-2 and figure A-2.

Table A-2 Three-Bus Configuration

SCSI Port	SCSI Device	SCSI Address	Terminates At
1	Robotics controller	0	
	Tape drive 0 (top)	1	Tape drive 0
2	Tape drive 1	2	
	Tape drive 2	3	Tape drive 2
3	unused	--	-----
4	Tape Drive 3	4	
	Tape Drive 4	5	Tape drive 4
5	unused	--	-----
6	unused	--	-----
7	unused	--	-----
8	unused	--	-----

Figure A-2 Three-Bus Configuration



Three-Bus Configuration

Glossary

A

actuators Robotics components inside the library that move cartridges. These include the gripper, extension axis, vertical axis, and horizontal axis.

automated tape library A robotic storage and retrieval system for DLT tape cartridges.

B

bar code label The identification label on DLT tape cartridges.

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

C

calibration The software measurements and configuration required for successful operation of the library.

control panel The graphical user interface panel on the front of the library which serves as the operator's interface with the library.

D

DLT™ Digital Linear Tape. DLT™ is a trademark of Quantum Corporation.

E

EIA/TIA-574 A serial communications cabling and protocol standard for nine-pin connectors, sometimes referred to as RS-232. The diagnostic (DIAG) port on the rear of the library uses this protocol.

extension axis assembly The extension axis mounts on the vertical axis and contains the gripper and the mechanism to extend the gripper forward and back.

F

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

FSA Fixed Storage Array. This is a 3-column by 32-row fixture mounted inside the library, with bins for storing up to 96 DLT cartridges.

FSE Field Service Engineer

G

grripper assembly The assembly, mounted on the extension axis that grips cartridges.

GUI Graphical User Interface

H

horizontal drive belt The drive belt connecting the horizontal motor to the horizontal axis assembly

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

L

load port The operator-accessible component of the library that allows up to four cartridges to be loaded into or unloaded from the library.

M

MTBF Mean Time Between Failures

MTTR Mean Time To Repair

N

NVRAM Non-Volatile Random Access Memory

O

Off-line Ready for communication with a diagnostic computer

On-line Ready for communication with a host computer

P

PC Personal Computer. A PC is required to run the TL895 diagnostic software.

pick The act of removing a cartridge from a storage location, load port bin, or tape drive.

place The act of inserting a cartridge in a storage bin, load port bin, or tape drive.

PROM Programmable Read-Only Memory

R

RAM Random Access Memory

rear panel The panel at the rear of the library that contains the AC power switch, AC power receptacle, SCSI port connectors, and diagnostic port connectors.

RS-232 A serial communications cabling and protocol standard for nine-pin connectors.

S

SCSI Small Computer Systems Interface. A communications standard for attaching peripheral devices to host computers.

T

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

TL895 tape library The automated storage and retrieval component of an automated tape library system used for storing and handling DLT cartridges.

U

UL Underwriters Laboratories

V

vertical belt The drive belt connecting the vertical motor to the vertical axis assembly.

vertical carriage assembly The crossbar and linear bearings mounted on the vertical rails.

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