

**TL82X Automated Tape Library  
for DLT Cartridges**

# **Facilities Planning and Installation Guide**

**EK-TL820-PG**

**Revision B01**



EK-TL820-PG, Revision B01, March 22, 1996, 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.

### **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 électriques. 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 100-120 V.

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

Fiche	Broches paralléus 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 Nähe 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.

## LASER STATEMENT

### CLASS 1 LASER PRODUCT

**CAUTION** - This product contains a Class II laser. Laser light - DO NOT stare into beam. Avoid Exposure - Laser Light is emitted from the barcode scanner.

**CAUTION** - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous exposure.

### LASER KLASSE 1

**VORSICHT** : Dieses Produkt Enthält Einen Laser Der Kategorie II. Laserstrahlen - Der Strichcode-scanner Gibt Laserstrahlen aus. VERMEIDEN SIE jeden Blickkontakt und direkten körperlichen Kontakt mit diesen Strahlen.

**VORSICHT** : Ein nicht ordnungsgemäßer (siehe hier enthaltene Anweisungen) Einsatz bzw. Änderungen der Betriebsleistung können einen gesundheitsgefährdenden Kontakt zur Folge haben.

### APPAREIL À LASER DE CLASSE 1

**ATTENTION** : ce produit relève de la classe laser II. Rayonnement laser - NE PAS fixer des yeux le rayon. Eviter les expositions - Le rayonnement laser est émis à partir du lecteur optique de code barre.

**ATTENTION** : L'utilisation de contrôles ou d'ajustements de performance des procédures autres que ceux indiqués ici peut entraîner une exposition dangereuse.

### PRODUCTO LÁSER DE CLASE 1

**!ATENCIÓN!** Este producto contiene laser de clase II. Luz laser - NO mire el rayo. Evite la exposición: la luz laser se emite desde el explorador de código de barras.

**!ATENCIÓN!** El uso de los controles o ajustes para realizar procedimientos diferentes de los especificados aquí puede provocar una exposición peligrosa.

### LUOKAN 1 LASERLAITE

**ATTENZIONE:** questo prodotto emette una luce laser di Classe II. NON guardare il fascio di luce ed evitare di esporsi alla fonte del laser. Il fascio di luce laser è emesso dal dispositivo di scansione del codice a barre.

**ATTENZIONE:** l'uso di comandi o regolazioni per eseguire le procedure che non siano quelli specificati in questa documentazione può causare rischi all'incolumità delle persone.



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# ***Introduction***

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## Purpose

The *TL82X Facilities Planning & Installation Guide* contains information about the following tape libraries: TL820 (part number TL820-XX), TL822 (part number TL822-XX), and TL826 (part number TL826-XX). The part number for each library is printed on the product label located on the rear of the unit. Table 1 identifies the configuration difference between the TL82X tape libraries.

Table 1: TL82X Library and Tape Drive Configurations

Tape Library	Number of Tape Drives	Drive Type	SCSI Configurations
TL820	3	TZ87	2-wire
TL822	3	TZ88N	3-wire
TL826	6	TZ88N	6-wire

This manual describes how to:


- prepare facilities for installation.
- unpack and ship your tape library.
- install the library.


This manual also includes a Glossary for reference. Use the Table of Contents, List of Figures, List of Tables, and Index to find a specific section or to locate information for a particular subject.

This manual addresses the following audiences:

- Chapter 2, “TL82X Library Site Requirements,” is of interest to the director of facilities at the end user’s site.
- Chapter 3, “Shipping and Handling,” is directed primarily at authorized trained field service personnel who will be installing the tape library.
- Chapter 4, “Installing the Library,” is directed primarily at authorized trained field service personnel who will be installing the tape library.

## Conventions Used in this Guide

 **WARNING** *Paragraphs marked by the warning icon indicate potential hazards to personal safety and are included to prevent injury.*

 **CAUTION** *Paragraphs marked by the caution icon indicate potential hazards to equipment and are included to prevent damage to equipment.*

The abbreviation lb. is used to indicate U.S. pounds for measurement of weight. Metric equivalents are also included for any measurement of weight.

The symbol ° is used to indicate measurement of temperature in degrees and measurement of angles in degrees. Measurements of temperature are provided in both Fahrenheit and Centigrade.

The symbol " is used to indicate a measurement of distance in inches, and the symbol ' is used to indicate a measurement of distance in feet. Metric equivalents are also included for any measurement of distance.

## References

### Documentation and Contacts

To obtain further information and/or copies of documentation on this product, contact:

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

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



Table 2: TL82X Related Documentation

Document Number	Document Title	Document Description
EK-TL820-OP	TL82X Operator's Guide	This guide defines the control functions, operational procedures and end user maintenance procedures for your TL82X library.
EK-TL820-SM	TL82X Diagnostic Software User's Manual	This manual describes how to install and use the TL82X Diagnostic Software Package, developed for field service personnel.
EK-TL82X-IG	TL82X Software Interface Guide	This guide is for software engineers and programmers developing applications that control the TL82X library.
EK-TL820-SV	TL82X Field Service Manual	This manual contains procedures for field isolation and replacement/repair of faulty components on a TL82X library. It also includes instructions and guidelines for periodic maintenance.
EK-OTZ87-OM	TZ87 Series Cartridge Tape Subsystem Owners Manual	This document describes the TZ87 tape drive and provides operating instructions and troubleshooting procedures.
EK-TZ88X-OM	TZ88 Series Cartridge Tape Subsystem Owner's Manual	This document describes the TZ88 tape drive and provides operating instructions and troubleshooting procedures.
6207125	TL82X IOD Installation Instructions	This document describes how to install the Inport/Outport Device (IOD).
6207127	TL82X Cabinet to Cabinet Mounting Instructions	This document describes how to install a multi-unit library system.

## SCSI 2 Specification

This Small Computer System Interface (SCSI) 2 communications specification is the proposed American National Standard for information systems, dated March 9, 1990. Copies may be obtained from:

Global Engineering Documents  
2805 McGaw  
Irvine, California 92714  
(800) 854-7179 or (714) 261-1455

# ***Library Site Requirements***

# **2**

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## TL82X Library Description

The TL82X library is an automated tape library for DLT™ cartridges. Depending on the model you have (TL820, TL822, or TL826), your tape library will store from 176 to 264 cartridges and have from three to six tape drives (see Table 3 on page 2-4). The library is driven by a host computer using the SCSI 2 standard robotics command set.

The basic library uses a SCSI or EIA/TIA-574 (RS-232 for 9-pin connector) serial link to interface with the host computer. The Multi-Unit Controller (MUC) allows up to five units to be connected together and driven by a single host. The Pass-Through Conveyor Mechanisms (PTMs) transfer cartridges between units.

The library has a front door that can be opened for easy bulk loading of bin packs, each containing a maximum of 11 cartridges. The Inport/Outport Device (IOD) allows single cartridges to transfer in and out of the library without interrupting operation.

Figure 1 through Figure 3 show the dimensions and major components of the TL82X libraries. The bin packs are arranged on an eight-sided carousel providing two or three, bin packs per face, each containing multiple cartridges. Each library also contains a robotic manipulator and a bar code reader for obtaining quick and accurate inventories.

The tape drives are mounted in the housing above the carousel and in-line with the carousel front face. A gripper moves horizontally on an extension axis which in turn is attached to vertical rails in the front door.

Upon receipt of the appropriate command from the host computer, the control electronics command the robotic mechanism to remove a cartridge from any storage bin, raise it up in front of a tape drive, and insert the cartridge into the drive. The host computer, also directing the tape drives, can then issue commands such as read, write, unload or clean, directly to the tape drive for action. (Note that an automatic drive cleaning feature is available and can be enabled/disabled via the host or diagnostic software. Refer to Document EK-TL820-SM, *TL82X Diagnostic Software User's Manual*, and read the discussion of this feature in the "Glossary.")

Table 3: TL82X  
Cartridges/Tape Drives  
Configurations

<b>Tape Library</b>	<b>Maximum Number of Cartridges</b>	<b>Number of Tape Drives</b>
TL820	264	3
TL822	264	3
TL826	176	6

Figure 1: TL82X Library  
Front View

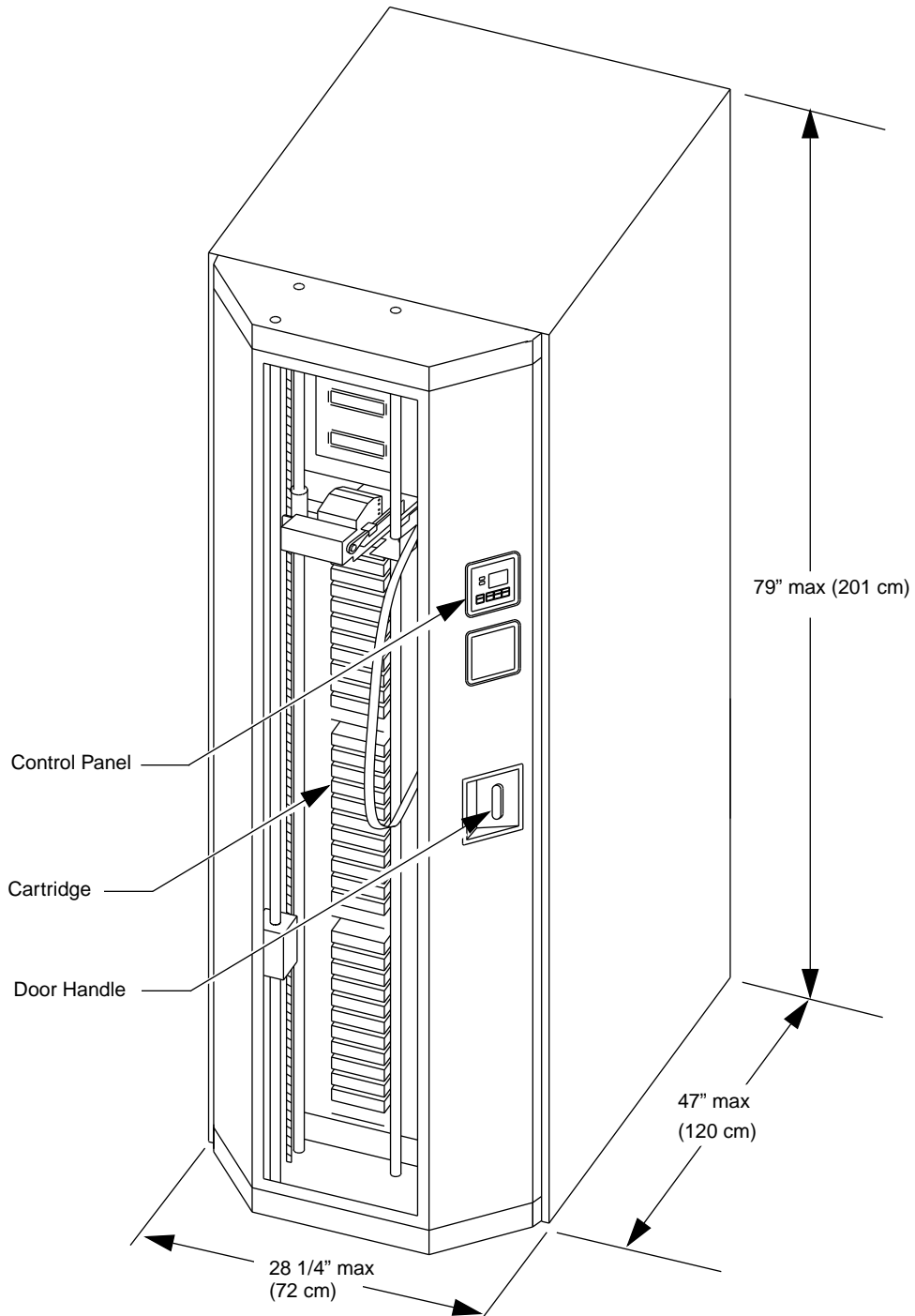


Figure 2: TL82X Library  
With Door Open

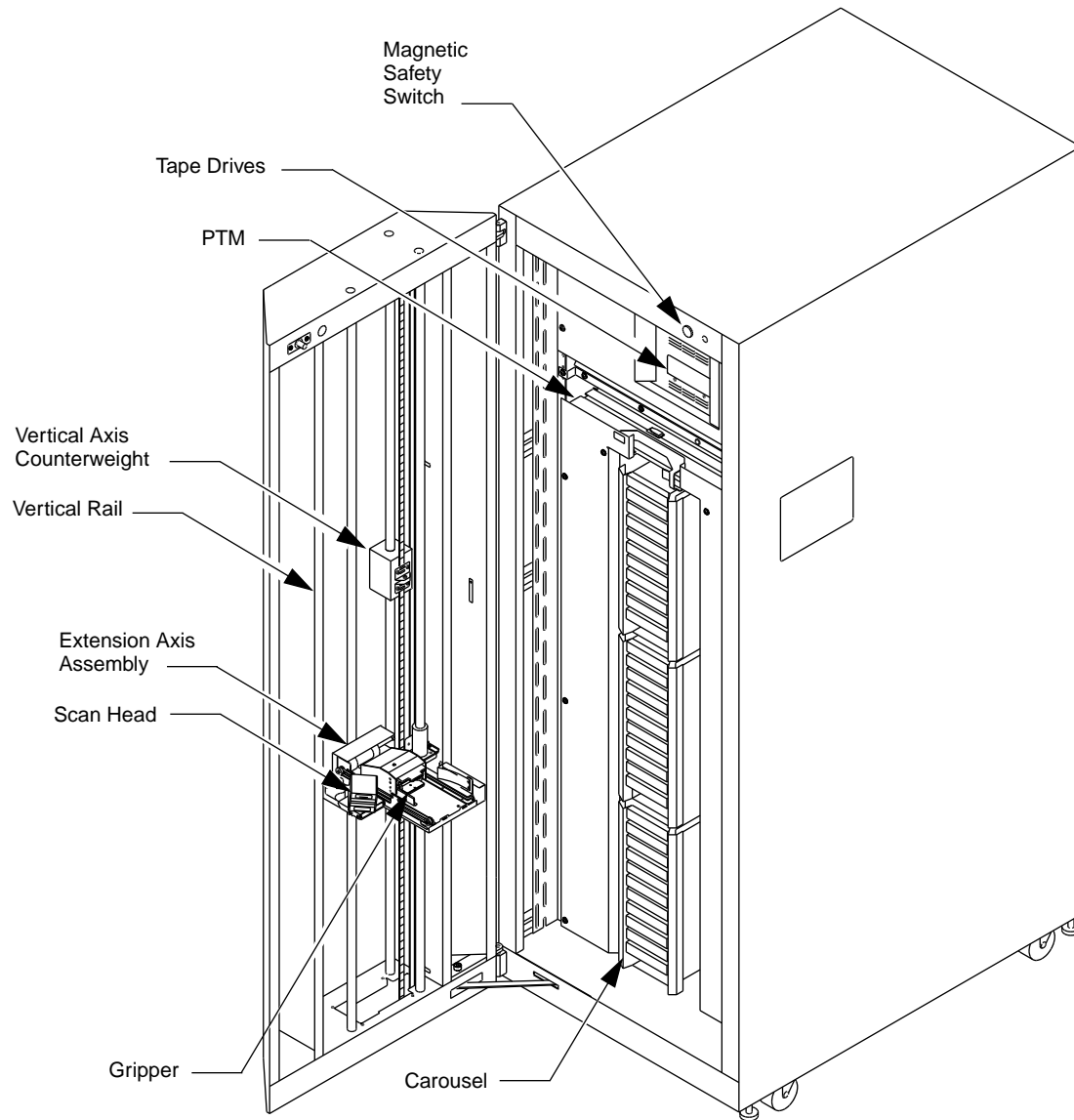
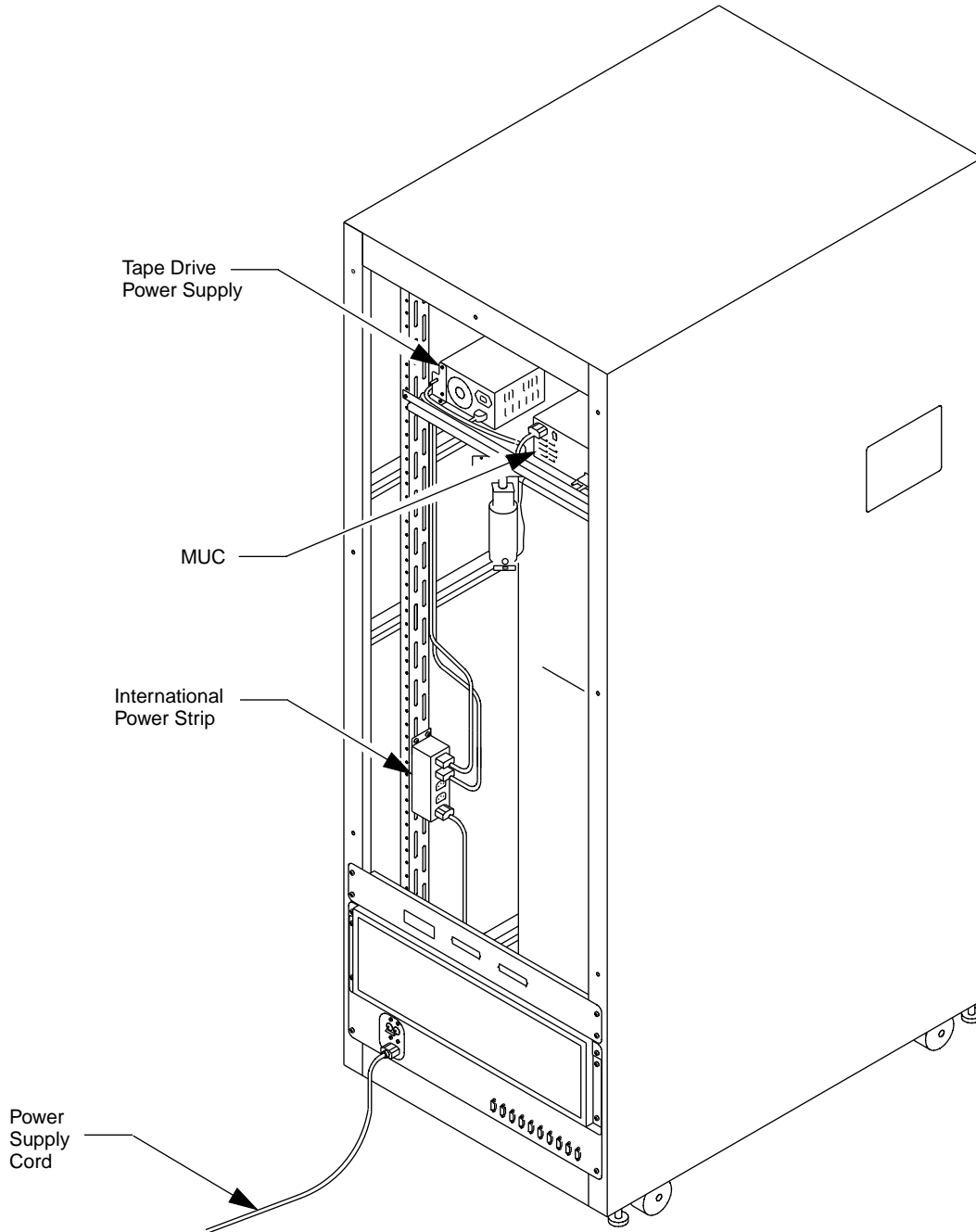




Figure 3: TL82X Library  
Rear View



(Note: TL820 Library Shown)

# Floor Space Requirements

## Single Unit

The minimum floor space requirement for a library is shown in Figure 4. Space needs to be allocated around the cabinet for access by an operator or service person.

Figure 4: Single-Unit Floor Layout

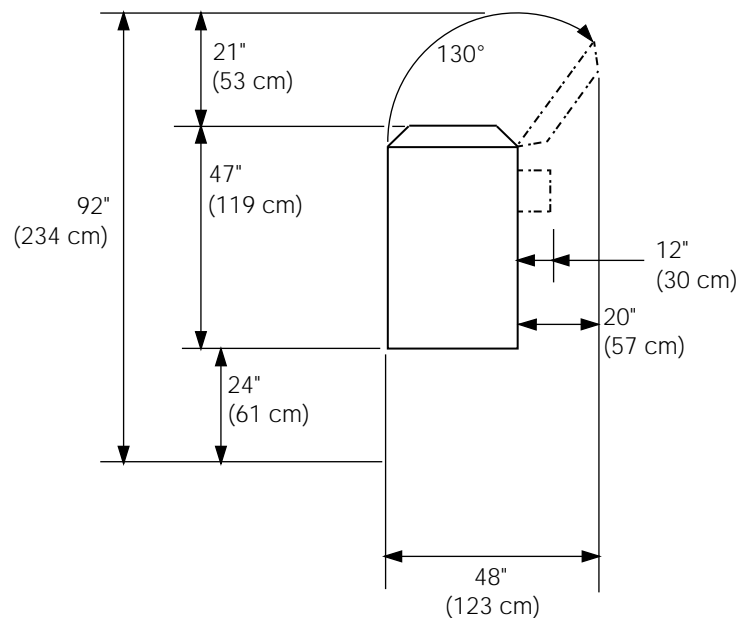


Table 4: Single-Unit Floor Space Requirements

Requirement	Floor Space Description and Location
21" (53 cm)	In front of the cabinet for the front door to open.
20" (51 cm)	Additional space needed to allow the door to open to its full 130°.
24" (61 cm)	Allows adequate air circulation for cooling the library.
12" (30 cm)	On the left side of the cabinet for IOD placement.

## Multiple Units

The minimum floor space requirement for the multi-unit configuration is shown in Figure 5. Space needs to be allocated around the cabinets for access by an operator or service person.

Figure 5: Multi-Unit Floor Layout

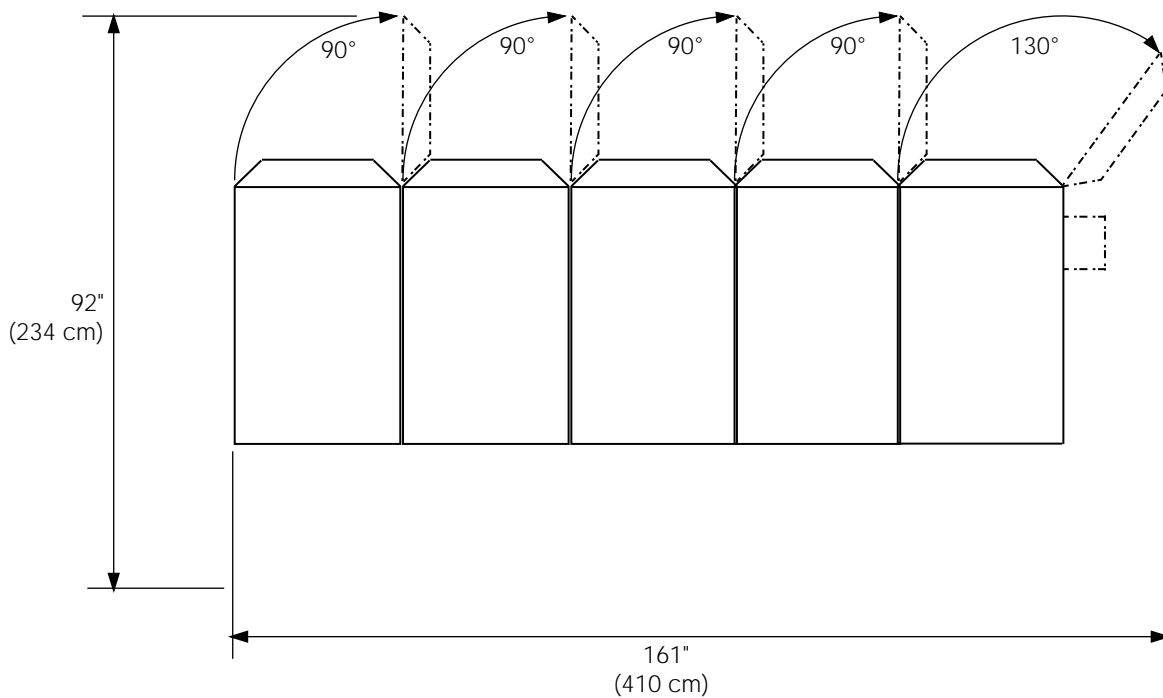


Table 5: Multi-Unit Floor Space Requirements

Requirement	Floor Space Description and Location
161" x 92" (410 x 234 cm)	Space required to accommodate five units in addition to the extra space needed for the IOD and to provide for opening the left-most front door to 130°.

## Floor Type

Any type of flooring is acceptable for the library as long as the following guidelines are taken into consideration:

- The floor must be reasonably level, not too compliant, and capable of supporting the weight of single or multi-unit configurations, such as typical computer room false flooring.
- Carpeted flooring must have antistatic mats for each library and work areas at the front and rear of each unit. The antistatic mat, carpeting, and padding combined should not compress more than the library unit ground clearance of 0.75" (19 mm) (measurement taken to the bottom of the leveling feet when they are fully raised).
- If multiple units are to be attached, the floor must be reasonably flat to accommodate attachment and alignment of the units in a series.

## Floor Loading

The floor must be able to support the full weight of a loaded cabinet. For sizing purposes, the combined weight includes the following:

- 800 lb. (360 kg) for the library.
- 132 lb. (60 kg) for the tape cartridges.

The weight is distributed on either the four casters or the four feet of the unit.

## Floor Clearance

The cabinet has a nominal floor clearance of 0.75" (19 mm).

**Note** *Do not attempt to move the library on carpeting that depresses more than the nominal clearance.*

Place stiff plastic or rubber mats on top of carpet prior to rolling the unit over it.

## Doorway Clearance

While packed in the shipping carton, considerable additional doorway clearance is required.



**WARNING**

***Do not tilt the unit more than 10°***

The uncrated library has maximum dimensions 79" high by 28-1/4" wide by 47" deep (201 x 72 x 120 cm). Make sure that the hallways, doorways, and rooms have adequate clearances.

Since the library is 79" (2.01 m) high, it will clear a typical doorway when being moved on its own casters.

The cabinet is best able to go over inclines and door jambs when it is pushed from the front. When rolling the unit over cracks and door jambs, a sheet of stiff metal placed over the crack or door jamb may help it roll more easily.

Any side can be used to push the library, however, the preferred way is from the front or back. Special care should be taken to avoid pushing on the non-structural portions, which are the:

- front door control panel
- system integrator panels
- front door view window
- front door handle
- rear connector panel
- system integrator panel
- rear access panel

## Power Requirements

AC power requirements for the maximum configuration are ~120VAC, 10A, 60 Hz nominal or ~230V, 5A, 50Hz nominal.

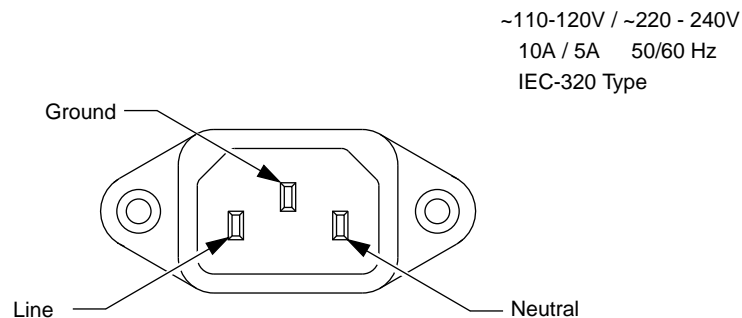
The library does not supply spike suppression or power factor correction. The unit needs to be on a power bus separate from any equipment which can cause large inrush currents (such as heavy manufacturing equipment).

The power distribution box contains a 10A circuit breaker (medium time-delay, magnetic, two pole) for overload protection of robotics branch outlets.

The library's autoranging motor and logic power supplies will accept single phase, 90 - 264VAC input power at 47 to 63 Hz. The fans are switchable between ~120V and ~230V via a voltage selection switch on the power distribution box.

The power inlet connector is a IEC-320 connector. For international applications you must replace the power cord set with a harmonized 3x2.0mm<sup>2</sup> power cord set that is approved by the country where used.

Figure 6: Library AC Power Receptacle



## Humidity Requirements

For operation of the library, the room humidity must be kept between 30% and 85%, non-condensing. Refer to the specifications for the tape drives and cartridges for information about their humidity requirements.

# Cabling

## Power

The IEC-320 connector for connecting to a ~120V, 10A, 60 Hz line or a ~230V, 5A, 50Hz line extends through the rear connector panel on each library. Figure 7 shows the rear connector panel for the TL822. The rear connector panel for the TL826 is basically the same, except that the TL826 has six SCSI Ports.



**WARNING**

***The attachment-plug receptacles in the vicinity of the unit or system are all to be of an earthing type, and the earthing conductors serving these receptacles are to be connected to earth ground.***

Figure 7: TL820 Rear Connector Panel Cabling

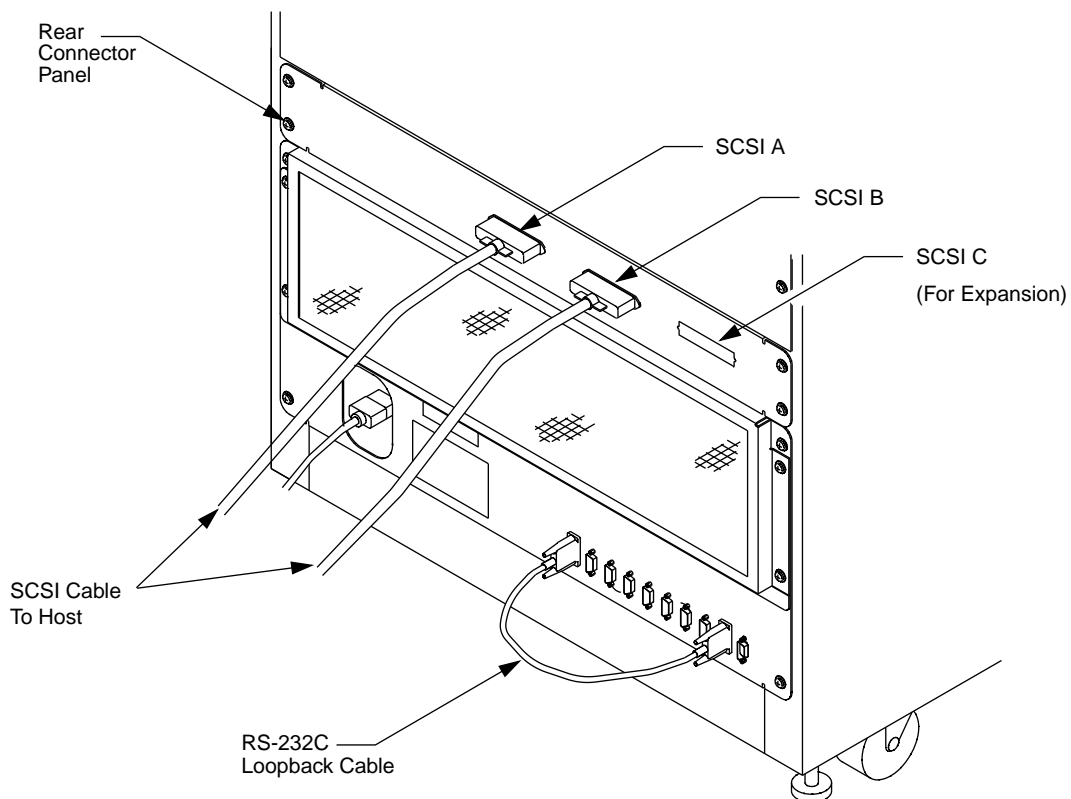
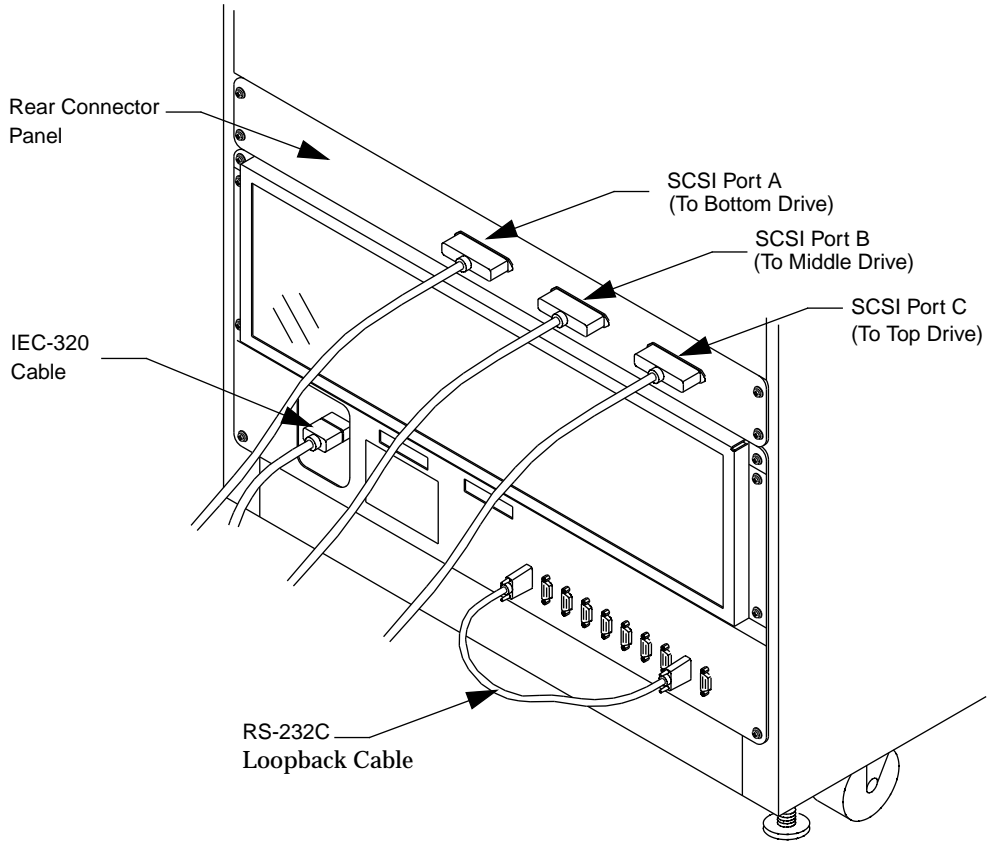


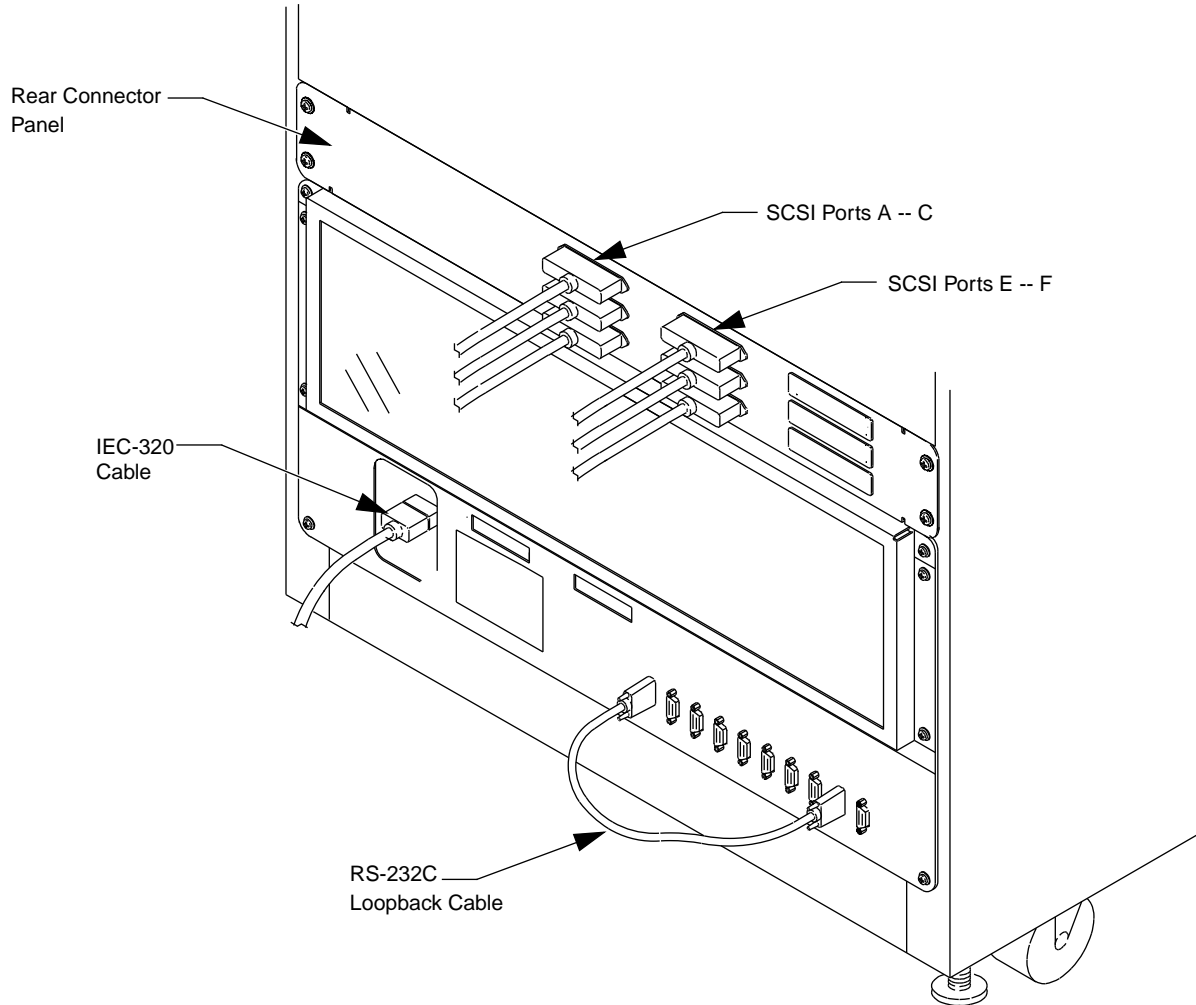
Figure 8: TL822 Rear Connector Panel Cabling



TD00007a



Figure 9: TL826 Rear  
Connector Panel Cabling



TG00007a

## Host Computer Communications

Two types of communications are possible to the host computer: EIA/TIA-574 serial (RS-232 for 9-pin connectors) and SCSI. Either method, when used with a MUC, allows a single cable from the host computer to control up to five units.

## SCSI Communications with a MUC

Multi-unit configurations and single-unit configurations can use SCSI commands to communicate with the host.

### Multi-Unit Configuration

With the SCSI communications both control communications and data flow between the host computer and TL82X library are transmitted using the same SCSI cable. The SCSI cable is connected from the host computer or host computer interface to the TL82X. The MUC and tape drives are connected to the rear connector panel.

**Note** *All host-to-library SCSI cabling is not supplied with the TL82X library.*

Table 6 on page 2-17 shows the names of the 50-pin Centronics SCSI ports contained in the TL82X libraries.

Table 6: SCSI  
Port/Address for the  
TL82X Tape Library

<b>Tape Library</b>	<b>SCSI Ports</b>
TL820	SCSI PORT A SCSI PORT B
TL822	SCSI PORT A SCSI PORT B SCSI PORT C
TL826	SCSI PORT A SCSI PORT B SCSI PORT C SCSI PORT D SCSI PORT E SCSI PORT F

For the location of the SCSI ports, see Figures 7 through 9 on pages 2-13 to 2-14 in the *TL82X Operators Guide*.

For the connections between the ports and the drives in the drive housing, see Figures 20 through 22 on pages 4-33 through 4-35 in the present guide.

## Single-Unit Configuration

For stand-alone units an RS-232 loop-back cable must be connected to the rear connector panel (see Figure 7 on page 2-13). The loop-back cable connects the MUC to the robotics control electronics.

## SCSI Cabling

The TL82X library uses the normal 50-pin SCSI cables compatible with TZ87 (5MHz clock rate) tape drives, and TZ88 (10MHz clock rate) tape drives. For reliable operation, all SCSI cabling and connectors must be shielded. This protects the bus integrity as well as minimizing electromagnetic interference emissions.

For information on connecting the SCSI cables for the TL82X library, see Chapter 4. For a more detailed description of the TL82X library SCSI connection options, refer to Document No. *EK-TL82X-IG, TL82X Software Interface Guide*.

The communications protocols and robotic command set for the TL82X library are based on the SCSI 2 specifications. See the SCSI 2 specifications and the *TL82X Software Interface Guide* for more information.

## Serial Communications

For serial communications, two cable connections are required between the TL82X library and the host computer or host computer interface:

- An EIA/TIA-574 serial cable is used to control communications between the host computer and the TL82X library,
- Separate SCSI cables are used for data flow between the host computer and the tape drives within the TL82X library.

The serial cable is connected from the host computer or host computer interface directly to the TL82X library. The SCSI cable is connected as described in “SCSI Communications with a MUC”.

**Note** *A host-to-TL82X serial cable is not supplied with the TL82X library.*

The shielded serial connection between the host and the TL82X library uses only three wires. The TL82X library has a female 9-pin D-type connector on the rear connector panel for this purpose. The pinouts for the connector are listed in Table 6. The TL82X library expects communication with the host to occur at 9600 baud.

**Note** *Switch position 7 on the MUC must be in the up position for serial communication.*

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Table 7: Library RS-232  
Port Pinouts

Pin No.	Function
2	transmit
3	receive
5	serial ground



# **Shipping and Handling 3**

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## Shipping Considerations

This section describes shipping a TL82X library, unpacking it, moving it around within a building to its final destination and preparing it for further shipping. Be sure to read this entire section before attempting to unpack or move the unit.

**Note** *The procedures listed below must be performed in the order that they appear in this chapter.*

### Crated Dimensions

The crated TL82X cabinet has dimensions of 84 1/2" high by 38 1/4" wide by 56 1/4" deep (215 x 97 x 143 cm). When moving the library, make sure that the hallways, doorways and rooms have adequate clearances.

### Uncrated Dimensions

The uncrated TL82X cabinet has maximum dimensions 79" high by 28 1/4" wide by 47" deep (201 x 72 x 120 cm). When moving the library, ensure the hallways, doorways and rooms have adequate clearances.

## Shipping List

Table 8 lists items that should be received with a TL82X library. Depending on options and spares selected when the order was placed, additional items may be shipped. Consult the contents list that comes with the library.

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Table 8: TL82X Library  
Shipping List

Quantity	Item
1	Library cabinet with crating and ramp
24 <sup>a</sup>	Bin packs (inside cabinet)
16 <sup>b</sup>	Bin packs (inside cabinet)
1	Bar code scan head (inside cabinet)
1	Extension axis assembly (inside cabinet)
1	Accessories box with the following items: <ul style="list-style-type: none"><li>- TL82X Operator's Guide</li><li>- TL82X Facilities Planning &amp; Installation Guide</li><li>- TZ87 or TZ88 Series Cartridge Tape Subsystem Owner's Manual</li><li>- TL82X Diagnostic Software User's Manual</li><li>- (1) PTM cutout cover</li><li>- (1) 3<sup>1/2</sup>" Diagnostic Software Diskette</li><li>- (1) AC power cord (US)</li><li>- (2) RS-232 cables</li><li>- (1) Set of bar code labels (330 quantity)</li><li>- (1) DLT cleaning cartridge</li><li>- (1) DLT data cartridges</li><li>- (1) Lubrication kit</li><li>- (1) Set of Fuses</li><li>- (1) Set of SCSI cables (installed)</li><li>- (1) Media robot driver kit</li></ul>

a. The TL820-XX and TL822-XX libraries are shipped with 24 bin packs.

b. The TL826-XX library is shipped with 16 bin packs.

## Uncrating the Library

To uncrate the TL82X library, use the procedure listed below and refer to Figure 10 on page 3-6.

**Note** *Save all crating and packaging material for possible later use.*

1. Move the crated equipment to a flat level area and allow a minimum of 6' in front of the off-load side of the crate. (Observe that the packing slip pouch is located on the right-side of the crate. Also, the distance of 6' ensures that there is enough room to set-up the ramp and remove the library from the pallet.)



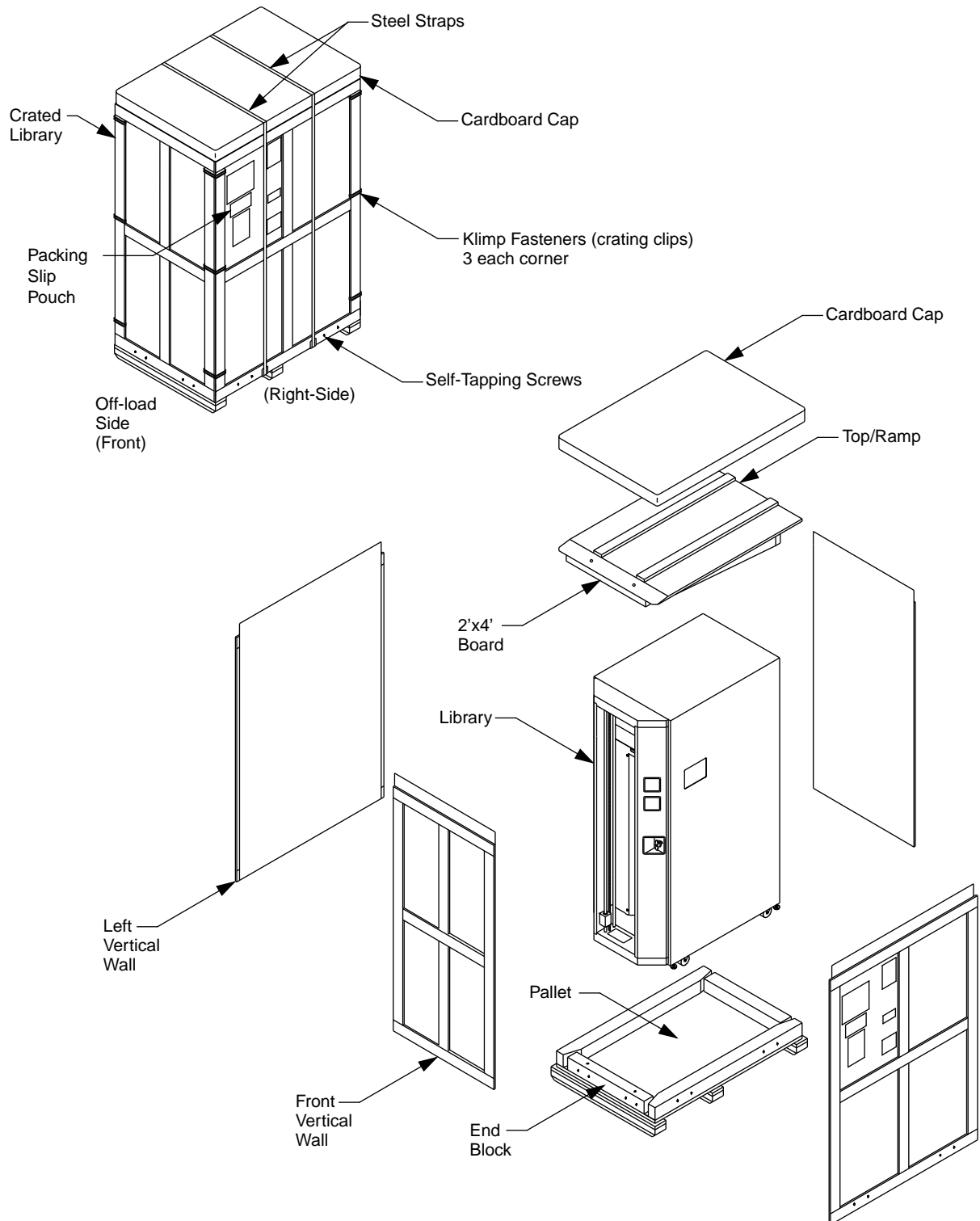
**WARNING**

*Exercise care when cutting the steel straps that secure the library and crating material to the pallet. These straps are under tension and will snap away when cut!*

*This procedure requires at least two people.*

2. Cut all steel straps securing the library and crating material to the pallet.
3. Lift the cardboard cap up and off of the top/ramp.
4. Lift the top/ramp up and off of the library top.
5. The crate is comprised of four (separate) vertical walls. Choose one wall and remove the three Klimp Fasteners (crating clips) from one of its corners.
6. At the opposite corner of the same wall, remove the other three crating clips.
7. At the bottom of the same wall, remove the four self-tapping screws securing this wall to the pallet.
8. Repeat steps 5, 6 and 7 for the other three walls.
9. Verify that the contents of the crate match the contents of the packing slip.

Figure 10: Uncrating the Library

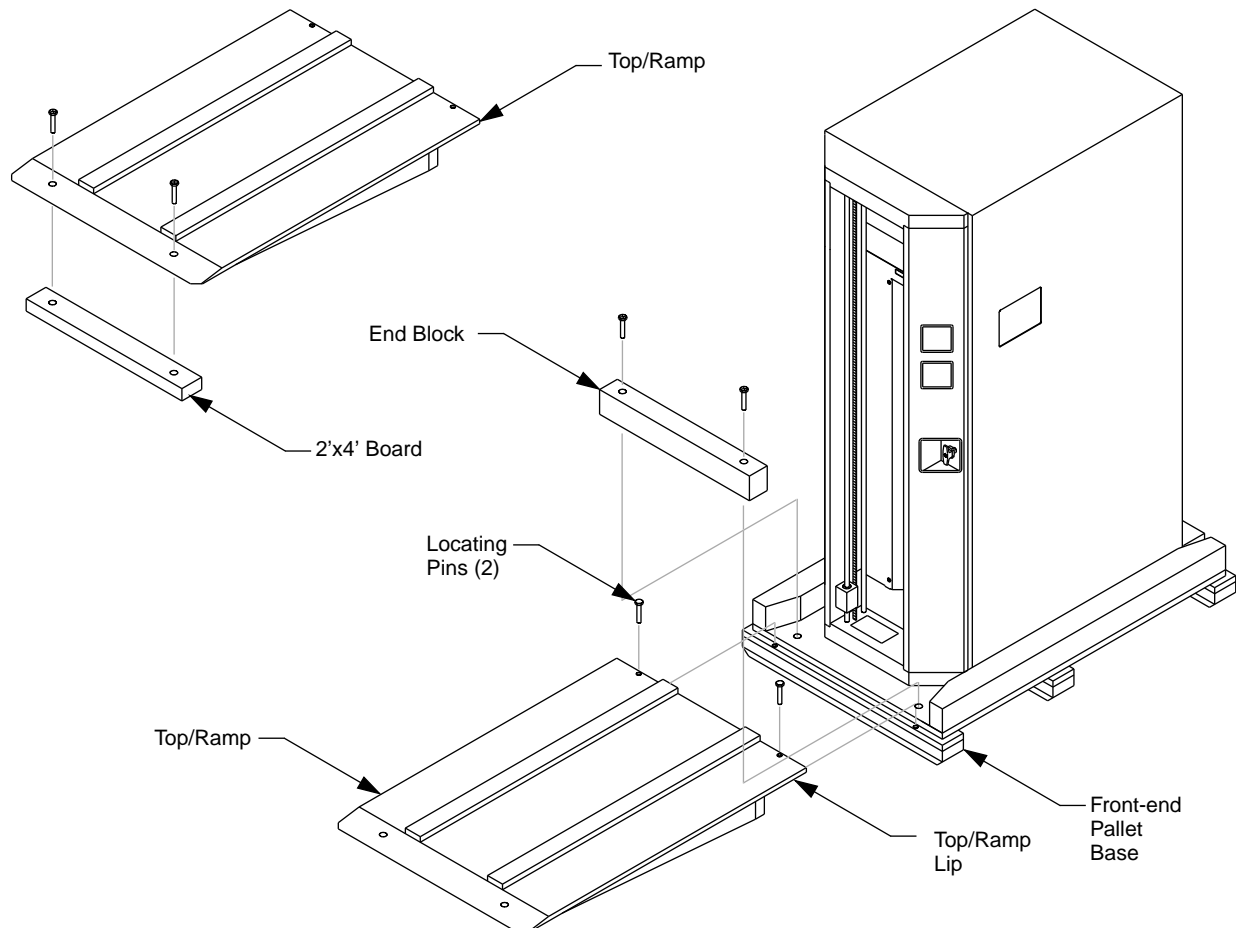


## Connecting the Top/Ramp to the Pallet


Figure 11 shows how to set-up the TL82X library top/ramp.

1. At the front of the top/ramp, remove the two hex head screws securing the 2'x4' board to the top/ramp and remove the board.
2. Remove the two lag screws that attach the end block to the pallet and remove the end block.
3. Remove the two locating pins from the right-side block of the pallet.
4. Rest the top/ramp lip on the front-end of the pallet base.
5. Align the sides of the top/ramp flush with the sides of the pallet base.
6. Place the two locating pins through the top/ramp and into the front-end of the pallet base to securely connect the ramp to the pallet.

Figure 11: Connecting the Top/Ramp to the Pallet



## Removing the Library from the Pallet

 **WARNING** *At least two people are required to move the TL82X library. Be aware that the cabinet is heavy! When moving the cabinet ensure your own safety. One person should guide the cabinet while one (or preferably two) person pushes.*

1. Verify that the leveling feet (located on the underside of the cabinet at the four corners) are fully retracted. If the feet are not fully retracted, do the following:
  - Remove the lip from the rear of the bottom pallet and raise the back feet by turning them counterclockwise (as viewed from above) until they are fully retracted.
  - Repeat the same procedure for the front feet.

 **WARNING** *Do not tilt the unit more than 10°.*


2. With one person (or preferably two) on the top/ramp in front of the cabinet to control the speed, and one person pushing from the rear, slowly roll the cabinet down the top/ramp and onto the floor. When pushing the cabinet from the front, press against the angled sections on the outer portions of the front door.

 **CAUTION** *Any one side of the cabinet can be used to push the library, however, the preferred way is from the front or back. Special care must be taken to avoid pushing on the following non-structural portions of the cabinet:*

- front door control panel
  - front door view window
  - front door handle
  - rear access panel
3. Once the library is on the floor it can be moved to its final destination.


**Note** *The library has a nominal floor clearance of 0.75" (19 mm). Do not attempt to move the library on carpeting that depresses more than the nominal clearance. Place stiff plastic or rubber mats on top of carpet prior to rolling the library over it. The floor clearance also imposes a restriction on how sharply the floor can begin to angle up, as it does when transitioning to a ramp.*

## Moving the Library to its Final Destination

 **WARNING** *At least two people are required in order to move the TL82X library. Be aware that the cabinet is heavy! When moving the cabinet ensure your own safety. One person should guide the cabinet while one (or preferably two) person pushes.*


The cabinet transitions over inclines and door jambs best when it is pushed from the front.

**Note** *When rolling the cabinet over floor cracks and door jambs, place stiff plastic or mats over the floor crack or door jamb to help it roll more easily.*

 **CAUTION** *Any one side of the cabinet can be used to push the library, however, the preferred way is from the front or back. Special care must be taken to avoid pushing on the following non-structural portions of the cabinet:*

- front door control panel
- front door view window
- front door handle
- rear access panel

**Note** *Always move the library up and down ramps backward to minimize the effective distance between the front casters and the front door.*

 **WARNING** *Do not push the cabinet up or down a ramp with an incline greater than 10°.*

Since the cabinet has casters for moving the library and feet for holding it in position, check the feet prior to moving the library. The feet are located on the underside of the cabinet at the four corners. If the feet are not fully retracted, do the following:

1. Rotate each of the four feet counterclockwise (as viewed from above) until they are fully retracted.
2. Make sure the feet are well above the level of the casters and clear of all obstructions.