TANDBERG DATA

Installation and User's Manual

Tandberg LTO2 Autoloader

Date: August 18, 2003
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Revision:01

CAUTION:

Be sure to read this manual before using this product.
Carefully store this manual after reading.

Trademarks

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FCC Class B Notice

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note:

This equipment has been tested and founded to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful Interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful Interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / television technician for help.

CAUTIONS:

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(2) The contents of this document may be changed without prior notice.
(3) No part of this document may be reproduced without the permission of Tandberg.
(4) Though the contents of this manual are thoroughly prepared, please contact the dealer you purchased if you have any questions, or if mistakes or omissions are found.
(5) Tandberg shall not be held liable for the effect of operations, regardless of item (4).

Keep this operation manual on hand so that you can refer to it when needed. Be sure to read **"Safety Precautions"** before using this product.

Safety Precautions- Be sure to read this section before using this product. –

Safety Descriptions

This manual describes dangers that may be caused by ignoring the cautions and the ways to avoid those dangers. Warning labels are attached on the components that may cause danger.
"Warning" and "caution" terms are used for warning labels to describe the degree of the danger.

WARNING	This indicates a hazard that could lead to death or serious injury in the event of improper handling.
CAUTION	This indicates a hazard that could lead to burns, injury, or property damage in the event of improper handling.

The following three types of symbols are used for warnings and cautions. The meaning of each symbol is described below.

△	Attention	This symbol indicates that danger could be caused if instructions are ignored. The figure in the symbol indicates details of the danger.	(Ex)  (CAUTION: Electric shock)
⃠	Prohibited action	This symbol indicates prohibited action. The figure in the symbol or near the symbol indicates details of the prohibited action.	(Ex)  (Do not disassemble.)
●	Mandatory action	This symbol indicates mandatory action. The figure in the symbol indicates details of the mandatory action. The mandatory action is required to avoid danger.	(Ex)  (Unplug)

(Description example in this manual)

Term indicating the degree of danger — Details of caution to avoid danger

CAUTION	
	Only plug into specified electric outlet. Plug the power supply cable into an electric outlet on the wall with specified voltage and power supply. Fire or electric leak may be caused if power supply other than the one specified is used.

Symbol prompting the caution

Symbols and Their Meanings Used in This Manual and Warning Labels

Attention

	Indicates the risk of an electric shock.		Indicates the risk of smoke or fire.
	Indicates non-specific, general		

Prohibited action

	Indicates non-specific, general action that is prohibited.		Do not disassemble, repair or modify. An electric shock or fire may result.
	Indicates non-specific, general action that is prohibited.		

Mandatory action

	Unplug the power supply plug of the Autoloader from an electric outlet. An electric shock or fire may result.		Indicates non-specific, general user's action. Follow the instructions.

Safety Cautions

Read and understand warnings, cautions and instructions described below in order to use this product safely. For descriptions of symbols used below, refer to the aforementioned “Safety Description.”

General Cautions

WARNING

Do not use when smoke,
foul smell or abnormal noise are emitted.

If smoke, foul smell or abnormal noise is given off, immediately turn off the power switch and pull out the power plug from the outlet. Then, contact the dealer you purchased this device from or the maintenance service company. Using the device under such circumstances may cause a fire.

Do not insert metal strip or wire.

Do not insert foreign substances such as metal strips or wire in the air inlet or cartridge slot as electric shock may occur.

CAUTION

Do not allow water or foreign substances into the device.

Do not place water and other liquid or pins, clips and other foreign substances into the device because it may cause a fire, an electric shock or failure. If any of them are placed into the device, immediately turn the power off and pull out the power plug from the outlet. Do not attempt to disassemble this device.Contact our dealers or maintenance service companies.

Cautions for power source or power cable

WARNING

Do not handle the power plug with wet hands.

Do not connect/disconnect the plug with wet hands. Otherwise, an electric shock may occur.

CAUTION

Do not insert the plug into the outlet other than the one specified.

Use the wall outlet of specified voltage and power source. Use of power sources other than the one specified may cause a fire or electrical leakage.

Do not apply starburst wiring.

This device may overheat when current exceeds the rated value, which may cause a fire.

Do not insert the plug halfway.

Insert the plug to the end. Inserting halfway generates heat from the loose connection and may cause a fire. The plug also generates heat when dust or droplets adhere to the inserting part, which may cause a fire.

Do not use the power cable other than the one specified.

Do not use the power cable other than the one attached to the device May cause a fire when current exceeds the rated value.

In addition, to prevent from an electric shock or a fire caused by damage of the power cable, do not perform the following actions.

- ・Pulling the power cable
- ・Pinching the power cable
- ・Bending the power cable
- ・Pouring chemicals on the power cable
- ・Twisting the power cable
- ・Placing items on the power cable
- ・Bundling the power cable
- ・Modifying, processing or repairing the power cable
- ・Fixing the power cable with staples, etc.

Do not use a damaged power cable (replace damaged power cable with one with the same specification. For replacement, contact the dealer from whom you purchased this device or a maintenance service company).

Cautions for installing, transporting, storing, and connecting

CAUTION	
	**Do not lift the device alone.** This device weights 18 kg. Lifting it alone may injure your back. Be sure to transport or move the device with two persons.
	Do not install in location other than the one specified.
	Do not install this device in the location listed below or other than the location specified in this manual as a fire may occur. ・Dusty place ・Humid place such as near a hot water supply ・Install where exposed to direct sunlight ・Unstable place
	**Do not cover the air inlet** Do not cover the fan on the back panel and air inlet on the front panel of the device as internal temperatures will rise, resulting in a fire or an electric shock as well as operation error.
	Do not connect/disconnect the interface cable with the plug still inserted in the outlet.
	Remove the power cable from the outlet before connecting/disconnecting the interface cable. Touching cables or connectors while the power cable is connected may lead to an electric shock or a fire due to a short-circuit, even if the power is OFF.
	Do not use an interface cable other than the one specified. Use an interface cable specified by TD and connect it after checking the device or connector. Using an interface cable other than the one specified or connecting the cable to the wrong connection point may lead to a fire due to a short-circuit.
	Follow the instructions described below for handling and connecting the interface cable. ・Do not step on the cable ・Do not place items on the cable ・Do not use the device with the cable connected loosely ・Do not use a damaged cable ・Do not use a damaged cable connector ・Be sure to lock the fastening screws

Cautions of maintenance

WARNING

Do not disassemble, repair or modify by yourself.

Never disassemble, repair or modify this device. Doing so results in the danger of an electric shock or a fire as well as operation error of the device.

Do not clean the device with the plug still inserted in the outlet.

Turn the power off and remove the power cable from the outlet before cleaning. Touching parts inside the device while the power cable is connected may lead to an electric shock, even if the power is OFF.

Pull out the power plug and wipe with a dry cloth from time to time to remove dust. If a dusty cord catches droplets, heat will be generated, which may cause a fire.

CAUTION

Do not insert the connecting parts halfway.

Insert the power cable or interface cable to the end. Inserting halfway generates heat due to a loose connection and may cause a fire.

Do not touch the broken LCD.

LCD contains liquid which is harmful to the human body. If the liquid leaking from the broken LCD is taken into the mouse, wash it out immediately and consult with a doctor. If the liquid adheres to the skin or gets into the eyes, wash with water for 15 minutes or more and consult with a doctor. When removing the LCD for separating and disposal, contact our dealers or maintenance service companies.

Cautions during operation

 **CAUTION**	
	**Caution: Suction**. Do not place hands or hair close to the cooling fan on the back panel while operating the device as hands may be pinched or hair may be sucked in. Do not insert hands inside the transporter, as it may cause an electric shock or injury.
	**Do not touch the device when there is lightning.** If there is possibility of lightning, pull out the power plug from the outlet. In case lightning strikes before pulling out the power plug, do not touch the device, including cables, as it may cause a fire or an electric shock.
	**Do not allow pets to approach the device.** Do not allow pets and other animals to approach the device. Excrement or hair entering the device may cause a fire or an electric shock.
	**Do not use cellular phones, PHS (personal handy-phone system) or pagers near the device.** Turn off cellular phones, PHS or pagers near the device as its electric waves may cause an operation error.

WARNING Label

WARNING labels are affixed to or around the parts where latent dangers exist so that customers are always aware of the dangers when operating the device (therefore, do not remove or soil the labels). If any of the labels are not affixed, peeling off or stained, contact our dealers.

Figure Ⅰ WARNING Label ①

Figure Ⅱ WARNING Label ②

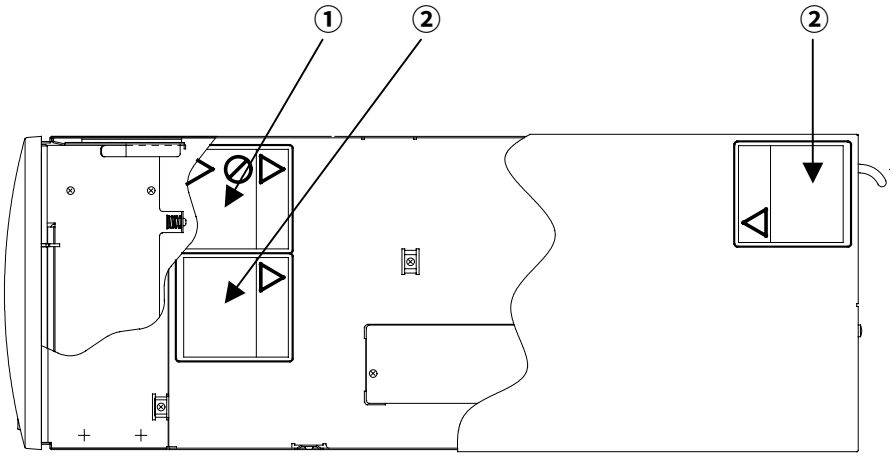


Figure Ⅲ Top view of the Tandberg LTO2 Autoloader

- WARNING Label ① and ② are affixed on the front top of internal frame in advance, because this autoloader might be converted from a standalone model into rack mount model.

Revision History

This Revision History provides a concise publication record of this manual. It lists the manual revision levels, release dates, and reasons for the revisions.

Document No. / Rev Level / Date
432778 / 01 / 2003-08-13

Contents

Introduction

Tandberg LTO2 Autoloader is an external memory device that has been developed for the file systems of servers and other equipment. This large capacity, high-performance streaming cartridge tape device is designed for use in medium intermediate to top-level computer systems.

This manual describes the overview, operation, maintenance method, regular maintenance, and troubleshooting of this device so as to avoid maintenance faults.

Please keep this manual in a safe place so that it may be easily referred to when necessary.

Organization of this manual

This section describes the organization of this manual and an overview of each chapter. Use it when you would like to find out something about this device.

Chapter 1 Tandberg LTO2 Autoloader

This chapter describes the features of the Autoloader as well as the package contents and the names of the parts. It also covers precautions for handling and storage. (See the description at the beginning of the manual concerning precautions for the safe handling of the device.)

Chapter 2 Setup

This chapter presents a step-by-step explanation of the procedure from the connection of the Autoloader to a server or workstation all the way to bringing it up to a usable condition. The procedure should be followed for proper installation. There is also a description of the rack mounting method.

Chapter 3 Operation

In this chapter, a description is provided of the TD Autoloader LTO2 operation, front panel menu organization, and the method of inserting the data cartridge.

Chapter 4 Cartridges

This chapter describes the method of handling the data cartridge that is used in the Autoloader as well as handling precautions.

Chapter 5 Daily Maintenance

The cleaning method and precautions to take when moving and storing the Tandberg LTO2 Autoloader are described so that the Autoloader can be maintained in the best condition for whenever it is used.

Chapter 6 Troubleshooting

Should the Autoloader fail to operate properly, please check the details described in this chapter before assuming a breakdown has occurred. If the problem persists, please request servicing from a repair company.

Appendix A Specifications

The specifications of the Tandberg LTO2 Autoloader and the data cartridge are listed here.

Appendix B Optional Items and Supplies

Optional items and supplies are listed here.

Appendix C Error Code

This section lists the Autoloader error codes and treatment method.

Symbols used in this manual

Symbols used in this manual

The following symbols are used to indicate cautions or tips for operations. (For symbols related to safety precautions, please refer to the descriptions aforementioned.)

Important

Indicates handling methods of this product, software operational instructions, or special notes.

Tip

Indicates helpful and useful information.

Chapter1 Tandberg LTO2 Autoloader

Some preliminary information about the Tandberg LTO2 Autoloader is presented here before installation and handling.

1.1 Overview of the Tandberg LTO2 Autoloader

This is a high-performance, high-capacity data storage device that is connected to the supported host to provide additional host storage. The Autoloader is designed to run an unattended backup and is furnished with the following functions.

- The LTO2 Autoloader has one built-in LTO Ultrium tape drive that reads and writes data and a robot mechanism that handles up to 10 cartridges (w/BCR[*1] : up to 9).
- The LTO2 Autoloader is equipped with a Ultra160 Low Voltage Differential(LVD) interface and functions as a device having two different IDs on a single SCSI bus.
- The maximum transfer rate (at the time of reading/writing) of the LTO2 Autoloader when operating in the non-compression mode is 35 MB/s. The maximum transfer rate (at the time of reading/writing) in the compression mode (with a compression of 2 times) is 70 MB/s.
- The amount of data that can be stored on a LTO2 data cartridge is a maximum of 200 GB in the non-compression mode and 400 GB (with a compression of 2 times) in the compression mode. The Tandberg LTO2 Autoloader permits the storage of a maximum of 2 TB of data on 10 LTO2 data cartridges in the non-compression mode and a maximum of 4 TB (with a compression of 2 times) in the compression mode.
- The optional Tandberg LTO2 Autoloader Rack Mounting Kit is required to mount the (rack mount type of the) Tandberg LTO2 Autoloader into a rack[*2]
- The optional Tandberg LTO2 Autoloader Rack Mounting Kit allows two (rack mount type of the) Tandberg LTO2 Autoloader units to be mounted with only one kit.
- A vacant 5U portion of space is required to mount the (rack mount type of the) Tandberg LTO2 Autoloader in a rack.

Important

1*: **Performance of the LTO2 Autoloader including Bar Code Reader mode**

We can provide you the Tandberg LTO2 Autoloader with the Bar Code Reader which hereafter called Autoloader w/BCR.TheAutoloader w/BCR requires a free slot used to swap cartridge during the inventory scan process. Thus the maximum cartridge capacity of the Autoloader w/BCR is changed from 10 to 9. But if you will prefer to use 10 cartridges, the BCR function will be changed disable.
In this case, please contact your nearest Customer Support Center.

*2: Tandberg LTO2 Autoloader is a standalone model. To mount this autoloader into a rack, you must convert this autoloader to a rack mount model. This is easily accomplished by using the LTO2 Autoloader Rack Mounting Kit.

1.2 Names and Functions of the Parts

This section describes the names and functions of the Tandberg LTO2 Autoloader parts.

1.2.1 Front Panel of the Tandberg LTO2 Autoloader

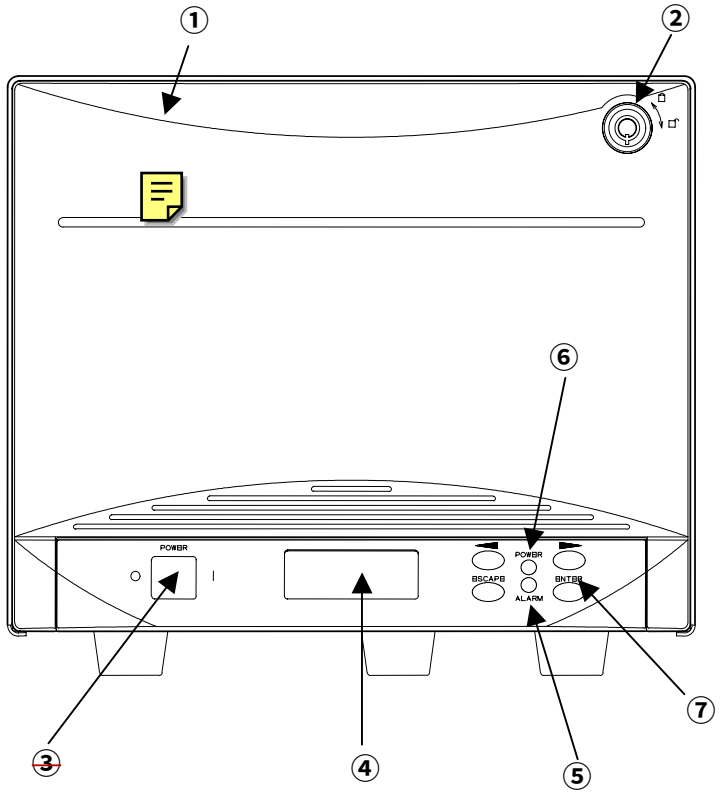


Figure 1-1 Front Panel of the LTO2 Autoloader

① Front door

This door prevents the intrusion of foreign objects. While the power is ON, unlock the door lock with the door lock key supplied with the main unit.

② Key lock

The front door is locked with the door lock key supplied with the main unit.
Pushing in the key and turning it clockwise 90 degrees will release the lock. The unit should normally be used with the door locked.

Door Locked. Door Open.

③ Power switch

This switch switches the power of the Autoloader on and off.
A press on the right side (|) switches the power ON and a press on the left side (◯) switches the power OFF.

④ Liquid Crystal Display

This liquid crystal display (LCD) is organized in 2 lines of 10 characters, and 11 icon characters. It displays the status of the Autoloader, menus, and error information.

⑤ Alarm LED

This LED lights (in red) should some kind of fault arise in the Autoloader.

⑥ Power LED

This LED lights (in green) when the power is supplied and the power switch is ON; it is unlit when the power is OFF.

⑦ Panel keys

- ▶ (arrow) key : Moves forward through the menu.
- ◀ (arrow) key : Moves backward through the menu.
- **ENTER** key : Defines and executes the displayed menu or operation command.
- **ESCAPE** key : Cancels the execution of the selected command, or returns to the previous screen of the selected menu.

1.2.2 Rear Panel of the Tandberg LTO2 Autoloader

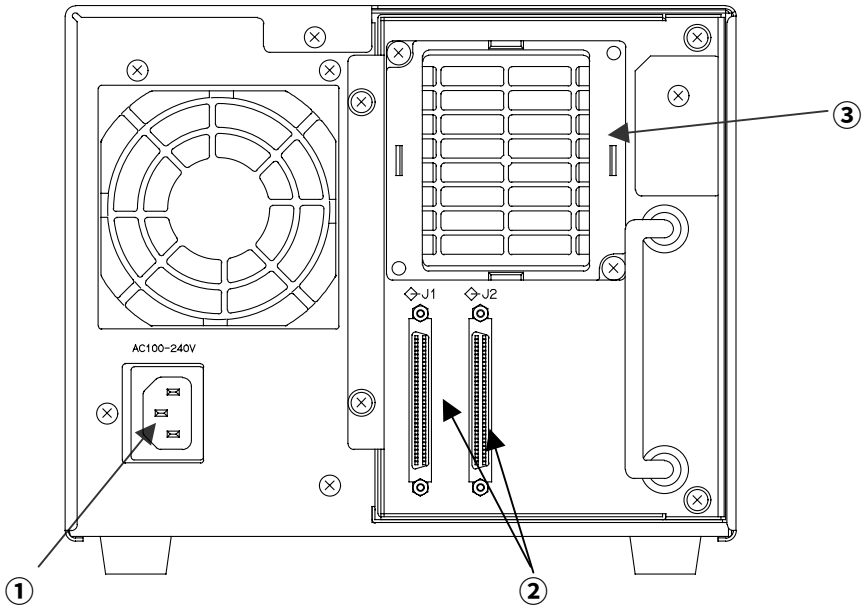


Figure 1-2 Rear Panel of the LTO2 Autoloader

① AC Power connector

This connector supplies power to this device.
Plug in the AC power cable supplied with the main unit.

② SCSI connector

These connectors are used to connect a SCSI interface that controls this device.
Connect the SCSI cable of the server, workstation, or other equipment.

③ Filter Element

The Filter Element is the air filter to clean the inside of the Autoloader.

1.2.3 Liquid Crystal Display

The display is a liquid crystal display (LCD) that indicates the status of the Autoloader, menus, and error information. The display is organized in 2 lines, each able to display up to 10 characters.

Lighting of any of the 11 icon characters indicates the corresponding slot number when a cartridge is housed in a magazine and fixed slots. The lock symbol will also light when the front door is locked with the door lock key supplied with the main unit. The icon will cease to be illuminated when the door lock is unlocked.

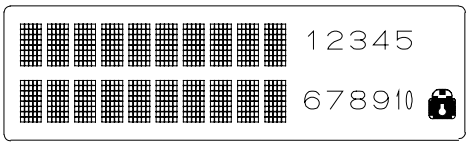


Figure 1-3 Liquid Crystal Display (LCD)

1.3 Handling Precautions

To operate this device properly, please observe the following precautions.

1.3.1 Main Unit

- Cooling fans are attached to the rear panel of the Autoloader. Do not use the unit in places where the fans will be obstructed or there is poor air circulation. The Autoloader should not be stored or used in extremely hot locations or in locations having severe temperature changes.
- The Autoloader is built with precision electronic components. Do not subject the Autoloader to shock or either use or store it in locations that are exposed to vibration.
- Do not use or store the Autoloader in locations where chemical vapors are dispersed in the air or where the unit will come into contact with chemicals.
- Do not move or transport the Autoloader while the power is ON.
- Do not use or store the Autoloader with a heavy object on top of it.
- Do not switch off the power while the Autoloader is operating.
- To insert or remove a magazine, first check that the Autoloader is in a condition that will allow insertion or removal of the magazine.
- Only insert a cartridge into a magazine, nothing else.
- Be sure to use the (rack mount) Tandberg LTO2 Autoloader mounted in a rack . (Rack mounting requires the Tandberg LTO2 Autoloader Rack Mounting Kit.)

1.3.2 Cartridges

- The data cartridge that should be used is the TD LTO1 Data Cartridge (TD P/N: 432630-1) and the TD LTO2 Data Cartridge (TD P/N: 432744).
- The cleaning cartridge that should be used is the TD LTO Universal Cleaning Cartridge (TD P/N: 432631)
- See Chapter 4 for other precautions.

1.4 Transfer or Disposal of the Device

- When disposing of this device along with the consumables and accessories, please follow the national and municipal guidelines for disposal.
- When transferring this device to another party, please include all items including this manual.

1.5 Contents of the Carton

Open the carton and check that all of the following items are included. In the unlikely event that something is missing or damaged, please contact your store of purchase.

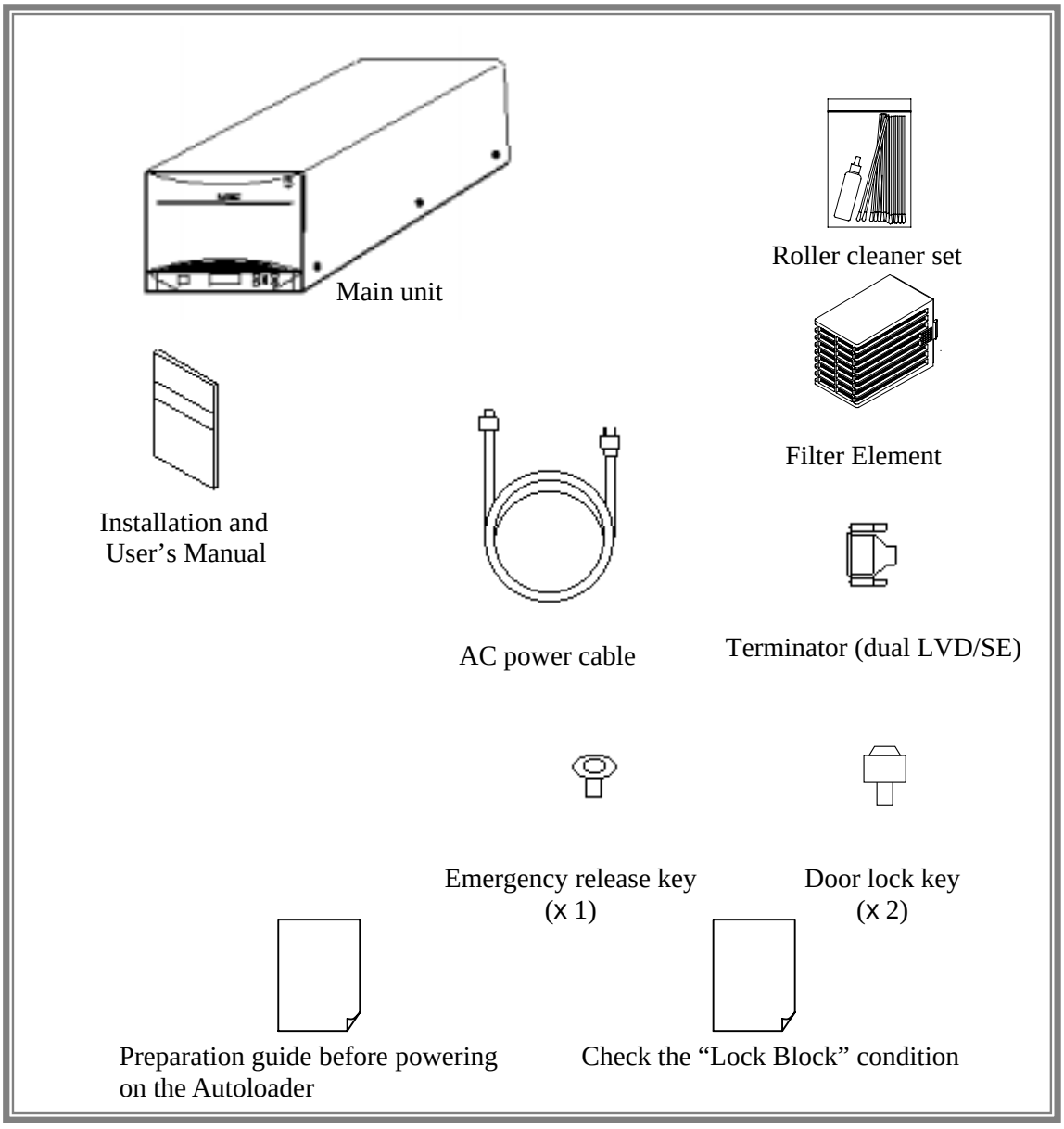


Figure 1-4 Contents of the Carton

Important

- The carton and cushioning material will be used when moving or storing the device and should be kept safely for such times.
- Should this device be transferred to another party, please be sure to include this instruction manual.

Chapter2 Setup

This chapter describes the procedure for connecting the Autoloader to a basic processing device such as a server or workstation.

Important

Maintenance personnel will perform the rack installation or removal work for the Tandberg LTO2 Autoloader.

2.1 Preparation Before Use

Before using the Autoloader, remove the transporter locking screw that is a type of thumbscrew located at the left side of the decorative cover.

Important

Remove the transporter locking screw before switching ON the power switch. Switching ON the power while the transporter locking screw is still attached could result in damage to the Autoloader.

Removal of the Transporter Locking Screw and Instruction TAG

1. To loosen this screw turn to counterclockwise by hand.
2. Remove the **Instruction TAG** with the **Transporter Locking Screw** (see figure 2-1).
3. As the **Transporter Locking Screw** will be needed to ship or move the Autoloader, insert it into the hole and tighten to keep it (see figure 2-2).

Figure 2-1 Removal of the Transporter Locking Screw and Instruction TAG

Figure 2-2 Storing the Transporter Locking Screw for later use

2.2 SCSI Cable Connections

⚠	**CAUTION**
	Before starting the installation of this device, be certain to unplug the power plug of the server, workstation, or other processing equipment. Working on the unit while the power plug is left connected to the power outlet could result in electrical shock.

The Autoloader is connected to the server/workstation (or other SCSI device) with a SCSI cable. The SCSI connector of the Autoloader is located on the rear panel.

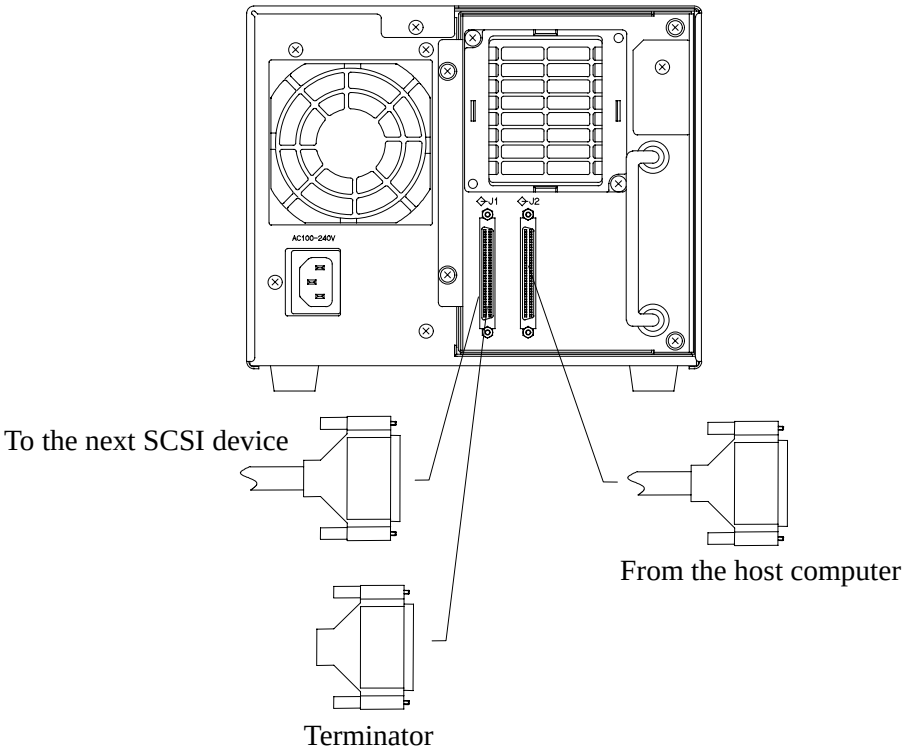


Figure 2-3 SCSI Cable Connections

When the SCSI connections end with this device (i.e., when connection to a separate device is not made from the left-side connector), be certain to connect the terminator supplied with the main unit. Failure to connect the terminator will result in improper operation of all connected SCSI devices.

When connections are made to other SCSI devices with the Autoloader connected in an intermediate position, connection to the next SCSI device is made from the left-side connector. Be certain to attach the terminator to the SCSI device positioned at the farthest end of the chain of devices that are connected by SCSI cable.
Please refer to the manuals supplied with the server/workstation and SCSI devices for information about the method of connection to server/workstations and other SCSI devices.

Note that the SCSI cable is sold separately. Please purchase a SCSI cable that suits the connectors of the Autoloader, the equipment to be connected, as well as the SCSI interface specifications.

Important

Once cable connections are completed, check that there are no kinks in the connections. SCSI cable connectors are equipped with screws for securing the connection. Please check that the connectors have been securely fastened with the screws.

2.3 AC Power Cable Connection

When the connection to the signal cable or terminating connector is completed, check that the power switch is OFF (switched to the " ○ " side).
After checking it, plug the AC power cord supplied with the main unit into the AC power connector of this device. Ensure that the plug is inserted completely.

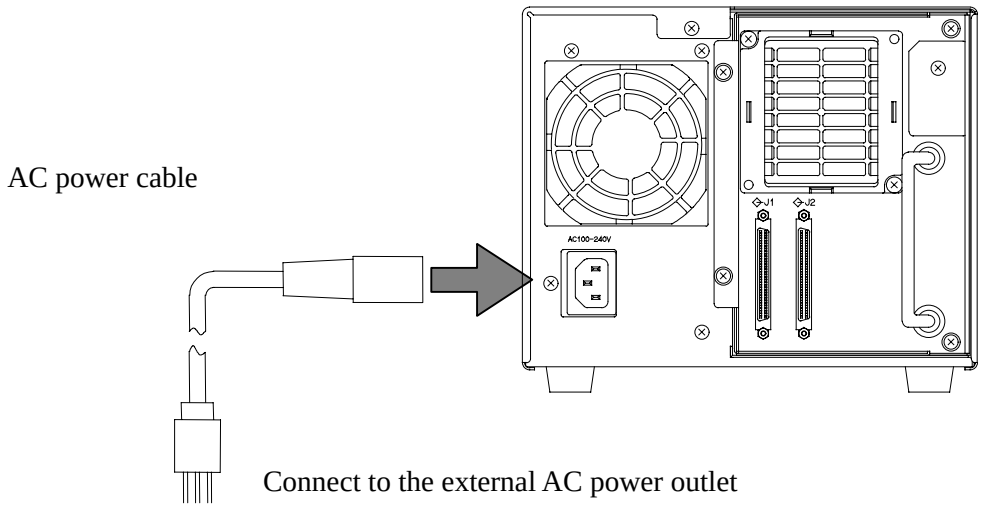


Figure 2-4 AC Power Cable Connection

2.4 Attaching and removing the Filter Element

Attach the Filter Element to the rear panel of the Autoloader as shown in Figure 2-5.
Remove the Filter Element from the rear panel of the Autoloader as shown in Figure 2-5.
Replace the Filter Element every 6 months.

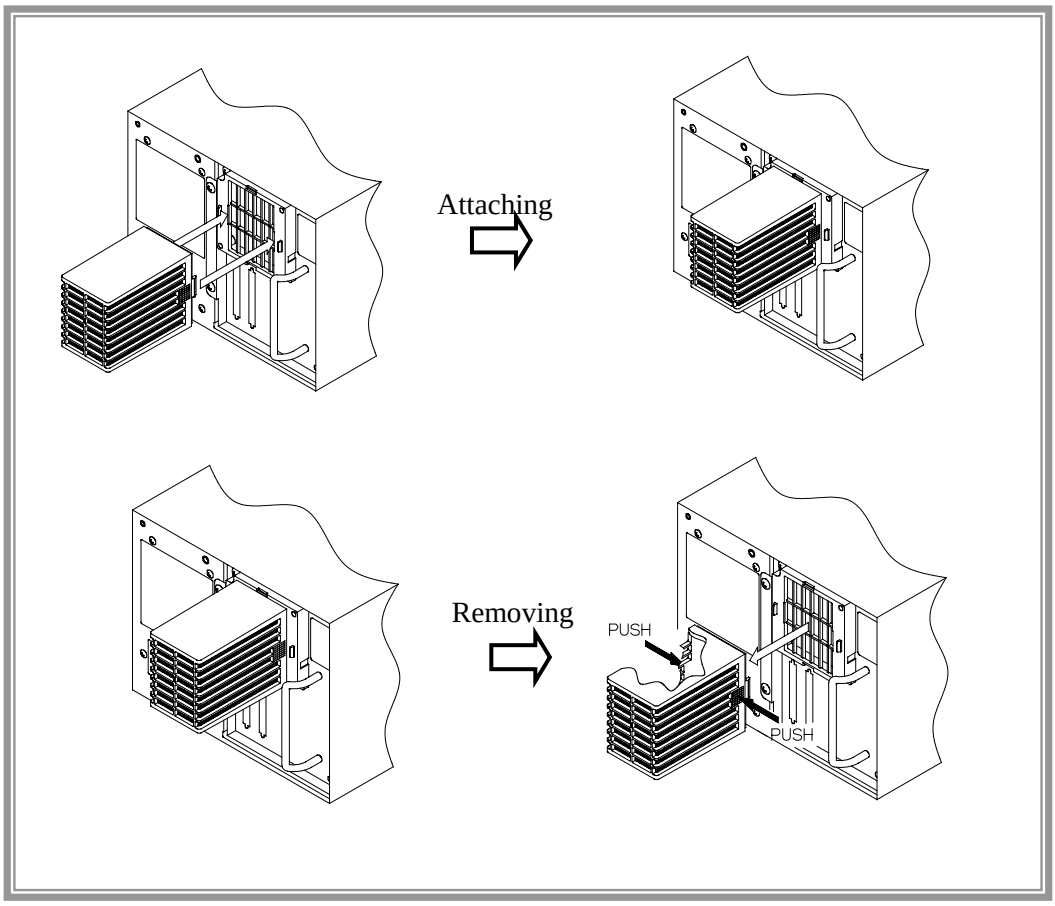


Figure 2-5 Attaching and removing a Filter Element

2.5 Switching ON the Power Switch and the Power-On Sequence

Switching ON the power of the Autoloader executes an automatic power-on sequence.

1. Connect the AC power cable.

2. Press the right side (|) of the Autoloader front panel power switch to switch the power ON.

3. When the power is supplied, the POWER LED lights in green and the power-on test starts.

4. When the power-on test ends normally, "**READY**" and "**DRV empty**" are alternately displayed on the top level of the LCD.

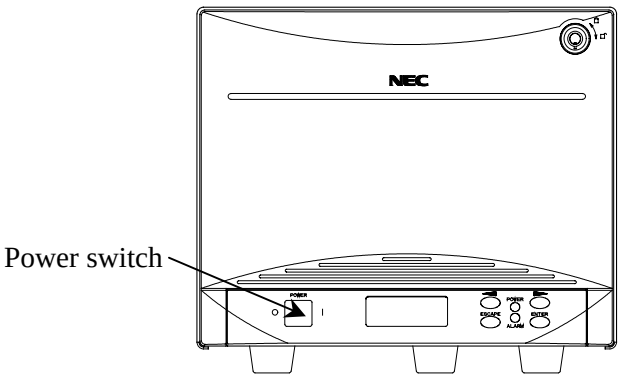


Figure 2-6 Powering on the LTO2 Autoloader

2.6 SCSI ID Setting

Please check that the SCSI ID of the Autoloader is not already being used by a server/workstation or another SCSI device. (Prior to shipping from the factory, the SCSI ID of the Autoloader was set as described below.)

See "3.6 Setting the SCSI ID" for information about how to check the SCSI IDs that have been set and for the method of changing them when required.

Important

The Autoloader and the tape drive must each have an independent SCSI ID. This device has a specification that does not allow duplication of the tape drive and Autoloader IDs. Please check that the IDs of other SCSI devices on the same SCSI bus do not duplicate the IDs of the tape drive and the Autoloader.

SCSI ID at time of factory shipping
- Tape drive : (1)
- Autoloader : (0)

2.7 Start and Shutdown of the System

When the SCSI ID settings have been completed, switch on the power of the server/workstation and the other devices and start the system.

To start the system, switch ON the power in the order of the Autoloader (along with the peripherals connected to the server/workstation) and then the server/workstation.

Important

If the data cartridge is loaded into the tape drive before starting the system, the reading/writing of data recorded on the data cartridge may not be performed properly.

To shut down the system, switch OFF the power in the order of the server/workstation and then the Autoloader (along with the peripherals connected to the server/workstation).

Important

Before shutting down the system, check that a data cartridge is not loaded in the tape drive. If the system is shut down while the data cartridge is still loaded in the tape drive, the next time the system is started, the reading/writing of data recorded on the data cartridge may not be performed properly or this could cause damage to the data cartridge or this device.

・Do not shut down or restart the system while this device is operating. Check that this device is stopped before closing down or restarting the system.

Important

If an error message is shown as "**Unreadable Media**" on the PC console's screen without front panel LED lighting solid red during the following operations, Inventory, Erase, Backup, Restore and etc., please retry the same operation. Also if the cartridge remains in the drive, please eject the cartridge from the drive by manual operation (refer "3.5 Operation of the Panel Keys") before retrying the operation.

Chapter 3 Operation

In this chapter, a description is provided of the operation methods that should be known for the daily use of the Autoloader as well as information about the LCD indications.

3.1 Removal of the Magazine

Follow the procedure described below to remove the magazine from the Autoloader.

1. Check that the power of the Autoloader is ON.

> **Tip**
>
> The Autoloader has a double locking mechanism comprising a door lock and an electronic lock. When the power is in the OFF condition, the electronic lock is activated by a solenoid and the door cannot be opened. When it is necessary to open the door while the power is in the OFF condition, use the emergency release key that has been supplied. See “3.8 Using the Emergency Release Key” for information describing the use of the emergency release key.

2. Use the door lock key supplied with the main unit to release the door lock, then open the front door.

> **Tip**
>
> The Autoloader is designed so that the electronic lock operation will again be activated if the front door is not opened within 10 seconds following the release of the door lock with the door lock key. Should the door become locked again, follow this same procedure to release the door lock and then open the front door within 10 seconds.

3. Refer to the diagram affixed to the inside of the front door and press down on the lock lever located at the lower left to release the magazine lock (see figure 3-1).

4. Pull out the magazine that has protruded (see figure 3-2).

Figure 3-1 Lock Lever

Figure 3-2 Pulling out the Magazine

3.2 Loading the Magazine

Follow the procedure described below to load the magazine into the Autoloader.

1. Check that the power of the Autoloader is ON.

> **Tip**
>
> The Autoloader has a double locking mechanism comprising a key operated door lock and an electronic lock. When the power is in the OFF condition, the electronic lock is activated by a solenoid and the door cannot be opened. When it is necessary to open the door while the power is in the OFF condition, use the emergency release key that has been supplied. See “3.8 Using the Emergency Release Key” for information describing the use of the emergency release key.

2. Use the door lock key supplied with the main unit to release the door lock, then open the front door.

> **Tip**
>
> The Autoloader is designed so that the electronic lock operation will again be activated if the front door is not opened within 10 seconds following the release of the door lock with the door lock key. Should the door become locked again, follow this same procedure to release the door lock and then open the front door within 10 seconds.

3. Set the magazine as indicated in the figure and press the **PUSH** mark portion back until it locks with a click sound.

4. Close the front door and lock it using the door lock key supplied with the main unit.

Figure 3-3 Loading the Magazine

3.3 Loading the Cartridge

This section describes the method of loading the cartridges.
In this device the slot numbers are assigned to the magazine and internal fixed slots as illustrated below.

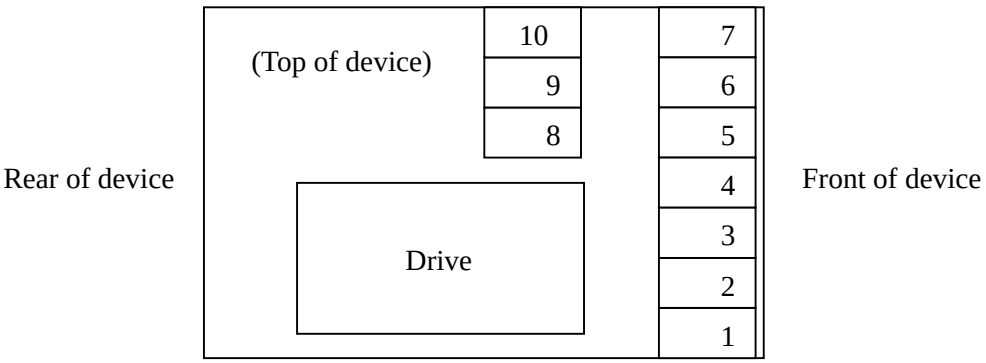


Figure 3-4 Slot Logical Numbers

Important

The Tandberg LTO2 Autoloader w/BCR requires a free slot used to swap cartridge during the inventory scan process. Thus the maximum cartridge capacity of the Autoloader w/BCR is changed from 10 to 9 and you can not use slot 10 that is a free slot. But if you prefer to use 10 cartridges, the BCR function neet be disabled.
In this case, please contact your nearest Customer Support Center.

3.3.1 Loading to Magazine

A maximum of 7 cartridges can be loaded into the magazine.
Follow the procedure described below to load the cartridges into the magazine.

1. Load the cartridges into the magazine in the proper orientation as shown in the figure 3-5. (The insertion direction is marked on the label on the side of the magazine.)
2. A "click" locking sound will be heard when the cartridge is inserted to the back. Up to seven cartridges can be mounted on a magazine.
   Perform the following procedures to mount a cartridge on a magazine:

Tip

When inserting the cartridge, be certain to push it in until it locks with a "click." If the cartridge is not properly locked, it could fall out from the magazine.

Figure 3-5 Loading the Magazine

3.3.2 Loading to the Fixed Slots

A maximum of 3 cartridges can be loaded to the fixed slots inside the Autoloader.

Operation of the Autoloader front panel keys permits automatic loading of the cartridges from the magazine to the fixed slots. Loading is possible between the following slots at this time.

Slots involved with cartridge movement when loading

Slot 5	→	Slot 8
Slot 6	→	Slot 9
Slot 7	→	Slot 10.

Important

For using the Tandberg LTO2 Autoloader w/BCR's optional

In using the TD LTO2 Autoloader w/BCR, slot 10 must be a free slot used to swap a cartridge during the inventory scan process. When you load the 2 cartridges to the fixed slots, i.e. slot 8 and slot 9, you can insert the cartridges into slot 5 and slot 6 only.

Operation Examples

The operation procedure and display indications are described when loading the cartridges of slot numbers 5 to 7 within the magazine to slot 8 to 10 among the fixed slots. See "**3.5 Operation of the Panel Keys**" for information about detailed panel operations.

Operation 1 Switch ON the power and wait for the completion of the power-on test.

Display: "**READY**" and "**DRV empty**" are alternately displayed.

Operation 2 Press the "**ENTER**" key.

Display: **STATUS**

Operation 3 Press the "**arrow**" key and select the **LOAD** command.

Display: **LOAD**

Operation 4 Press the "**ENTER**" key and define the command.

Display: **Load Drv?**

Operation 5 Press the "**arrow**" key and select "**Load Slt?**" .

Display: **Load Slt?**

Operation 6 Press the "**ENTER**" key and execute the command.

Display: **Complete** (when the command ends normally.)
Err. xxxxxx (when an error occurs. **xxxxxx** is the error code.)

Tip

- Loading by command is valid only when slots 8 to 10 among the fixed slots are all vacant slots.
- When loading by command is executed, all cartridges housed in slots 5 to 7 within the magazine are moved to fixed slots.

Important

For using the Tandberg LTO2 Autoloader w/BCR

In using the LTO2 Autoloader w/BCR, slot 10 must be a free slot used to swap a cartridge during the inventory scan process. When you load the 2 cartridges to the fixed slots, i.e. slot 8 and slot 9, you can insert the cartridges into slot 5 and slot 6 only. If a cartridge is in slot 7, loading command is failed and error message of "**S10 forBCR**" is displayed on the LCD.Then, you remove the cartridge fro slot7 manually, and retry the loading command.

3.4 Removal and Insertion of the Cartridges

The method by which cartridges are removed and inserted is described here.

3.4.1 Removal from and Insertion to the Magazine

1. Hold the magazine body steady and press the center portion of the cartridge. A "click" sound is heard and the lock is released.

2. Remove the cartridge.

Figure 3-6 Removal and Insertion of Cartridges (7-Slots)

Tip

When removing or inserting cartridges, keep your finger against the cartridge when pressing on the center portion so that the cartridge does not fall out.

3.4.2 Removal from and Insertion to the Fixed Slots

Operation 1 Remove the cartridges that are housed in the fixed slots (i.e., slot 8 to 10). (The cartridges will move to slot 5 to 7 within the magazine at this time.)

Operation 2 Reload a magazine into the main unit that has vacant slots for slot 5 to 7.

Operation 3 Lock the front door and wait for "**READY**" to be displayed.

Operation 4 Press the "**ENTER**" key.

Display: **STATUS**

Operation 5 Press the "**arrow**" key and select the **EJECT** command.

Display: **EJECT**

Operation 6 Press the "**ENTER**" key and define the command.

Display: **Eject Drv?**

Operation 7 Press the "**arrow**" key and select "**Eject Slot?**" .

Display: **Eject Slot?**

Operation 8 Press the "**ENTER**" key and execute the command.

Display: **Complete** (when the command ends normally.)
Err. xxxxxx (when an error occurs. **xxxxxx** is the error code.)

Operation 9 When required, remove the magazine and remove the cartridges of slot 5 to 7 which have been moved.

Tip

- Ejecting by command is valid only when slot numbers 5 to 7 among the magazine slots are all vacant slots.
- When ejecting by command is executed, all cartridges housed in slot numbers 8 to 10 within the fixed slots are moved to the magazine.

3.5 Operation of the Panel Keys

3.5.1 Organization of the Front Panel Switches

The arrangement of switches as viewed from in front of the front panel is as illustrated below.

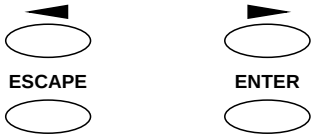


Figure 3-7 Front Panel Switches

3.5.2 Functions of the Switches

The functions of the various switches are described below.

► key(**arrow** key)	:	Moves forward through the menu.
◄ key(**arrow** key)	:	Moves backward through the menu.
ENTER key	:	Defines and executes the displayed menu or operation command.
ESCAPE key	:	Cancels the execution of the selected command, or returns to the previous screen of the selected menu.

3.5.3 Slot Logical Numbers

In the Autoloader, logical numbers such as the following are assigned to the slots that house the cartridges upon execution of the operation command.

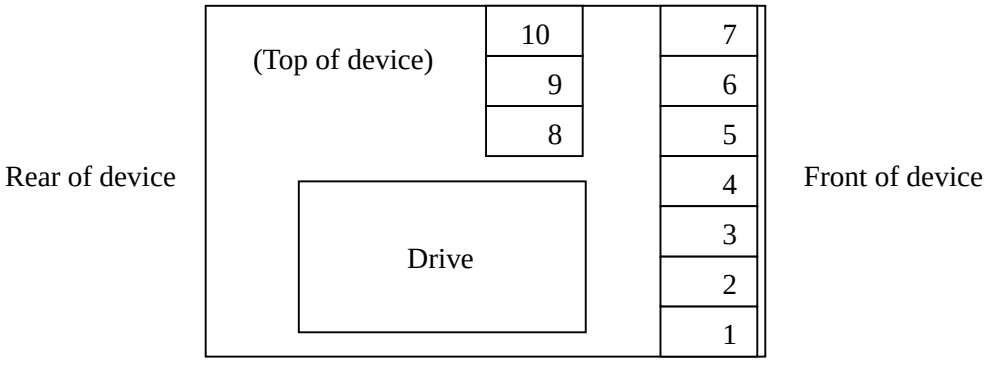


Figure 3-8 Slot Logical Numbers

Important

The LTO2 Autoloader w/BCR requires a free slot used to swap cartridge during the inventory scan process. Thus the maximum cartridge capacity of the LTO2 Autoloader w/BCR is changed from 10 to 9. But if you prefer to use 10 cartridges, the BCR function will need to be changed disabled. In this case, please contact your nearest Customer Support Center.

3.5.4 Panel Operation Procedure

1. Press the right side (|) of the Autoloader power switch to switch the power ON.

2. When the power is supplied, the POWER LED lights in green and the power-on test starts.

3. When the power-on test ends, "**READY**" is displayed on the LCD.

4. Press the **ENTER** key and enter the main menu.

5. Press the **arrow** key and select the command. (The menu scrolls.)

6. Press the **ENTER** key and define the selected command.

7. Refer to “3.5.5 Menu Tree” and follow the system of operation commands to repeat aforementioned
   Steps 5 and 6, select the command to be executed, and define it.

8. To cancel the defined command during this procedure, press the **ESCAPE** key.
   (A press of the **ESCAPE** key results in a return to the previous menu.)

9. Press the **ENTER** key and execute the menu.

Operation Examples

The operation procedure and LCD indications are described below when loading the cartridge housed in slot 7 into the drive.

Operation 1 Switch ON the power and wait for the completion of the power-on test.

Display: "**READY**" and "**DRV empty**" are alternately displayed.

Operation 2 Press the **ENTER** key.

Display: **STATUS**

Operation 3 Press the **arrow** key and select the "**LOAD**" command.

Display: **LOAD**

Operation 4 Press the **ENTER** key and define the command.

Display: **Load Drv?**

Operation 5 Press the **ENTER** key and define the command.

Display: **Frm Slt 1?**

Operation 6 Press the **arrow** key and select "**Slt 7**".

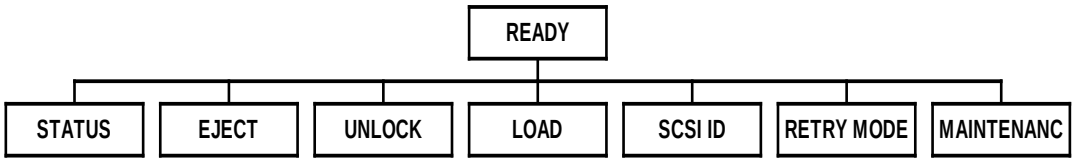
Display: **Frm Slt 7?**

Operation 7 Press the **ENTER** key and execute the command.

Display: **Complete** (when the command ends normally.)
Err. xxxxxx (when an error occurs. **xxxxxx** is the error code.)

3.5.5 Menu Tree

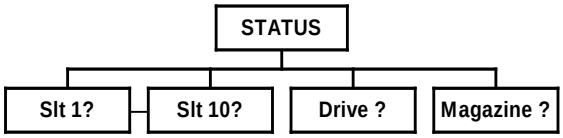
1 Main Menu



2 Menu Commands

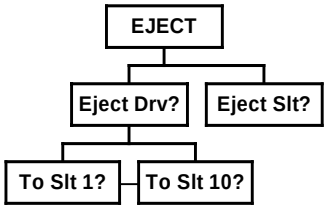
1) STATUS

(Permits a check of the different types of status.)



2) EJECT

(Permits ejecting a cartridge from the drive and houses the cartridge in an empty slot.)

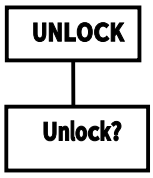


Important

Do not use this command during a reading / writing operation.

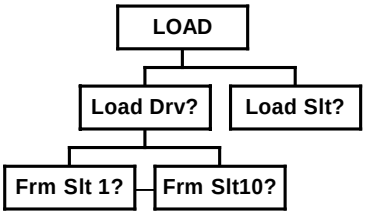
3) UNLOCK

(Cancels the front door software key lock.)



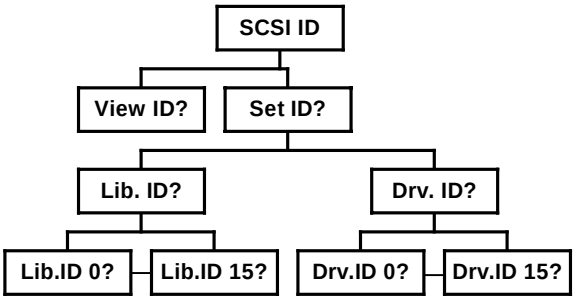
4) LOAD

(Permits loading a cartridge from an arbitrary slot to the drive.)

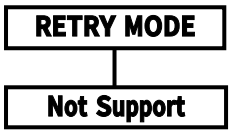


5) SCSI ID

(Permits setting, changing, and checking of the drive and Autoloader SCSI ID.)

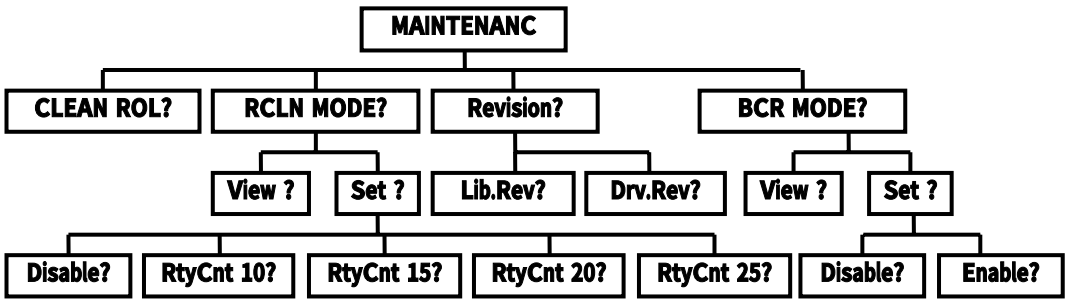


6) RETRY MODE



7) MAINTENANC

(You can check or change the CLNROL function.)



3.6 Setting the SCSI ID

This command sets the SCSI ID of the Autoloader in conjunction with SCSI devices such as the server/workstation that is to be connected.
The following SCSI IDs are assigned to this device as default values prior to shipping from the factory.

SCSI IDs at time of factory shipping:

- Tape drive : (1)
- Autoloader : (0)

Important

The Autoloader and the tape drive must each have an independent SCSI ID. This device has a specification that does not allow duplication of the tape drive and Autoloader IDs. Please check that the IDs of other SCSI devices on the same SCSI bus do not duplicate the IDs of the tape drive and the Autoloader.

Checking the SCSI ID and the method of changing it are described in this section.

3.6.1 Checking the SCSI ID

Operation 1 Switch ON the power and wait for the completion of the power-on test.

Display: "**READY**" and "**DRV empty**" are alternately displayed.

Operation 2 Press the **ENTER** key.

Display: **STATUS**

Operation 3 Press the **arrow** key and select the "**SCSI ID**" command .

Display: **SCSI ID**

Operation 4 Press the **ENTER** key and define the command.

Display; **View ID?**

Operation 5 Press the **ENTER** key and define the command.

Display: **L.0 D.1**

Tip

When checking the SCSI ID, the Autoloader is displayed as "**L**" and the tape drive as "**D**".

3.6.2 Changing the SCSI ID

Operation Example 1

The operation procedure and LCD indications are described below when changing the SCSI ID of the Autoloader from 0 to 1.

Operation 1	Switch ON the power and wait for the completion of the power-on test. Display: "**READY**" and "**DRV empty**" are alternately displayed.
Operation 2	Press the **ENTER** key. Display: **STATUS**
Operation 3	Press the **arrow** key and select the "**SCSI ID**" command. Display: **SCSI ID**
Operation 4	Press the **ENTER** key and define the command. Display: **View ID?**
Operation 5	Press the **arrow** key and select the "**Set ID**" command. Display: **Set ID?**
Operation 6	Press the **ENTER** key and define the command. Display: **Lib.ID?**
Operation 7	Press the **ENTER** key and define the command. Display: **Lib. ID 0?**
Operation 8	Press the **arrow** key and select the "**Lib. ID1**" command. Display: **Lib. ID 1?**
Operation 9	Press the "**ENTER**" key and define the command. Display: **Complete**
Operation 10	Set the power switch of this device to OFF.
Operation 11	Switch the power of this device ON again.

Operation 12 Wait for the completion of the power-on test.

Display: "**READY**" and "**DRV empty**" are alternately displayed.

Operation 13 Check the "**READY**" display and then switch on the power of the server/workstation and the other devices to restart the system.

Tip

When changing the SCSI ID, the Autoloader is displayed as "**Lib.**" and the tape drive as "**Drv.**"

Important

When changing the SCSI ID of this device, be certain to execute a restart of this device, the server/workstation, and any other devices. Note that the restart of the server/workstation and the other devices should be executed after checking the "**READY**" display of this device.

Tip

See "2.6 Starting and Closing the System" for information about the power-on sequence.

Operation Example 2

The operation procedure and LCD indications are described below when changing the SCSI ID of the tape drive from 1 to 5.

Operation 1 Switch ON the power and wait for the completion of the power-on test.

Display: "**READY**" and "**DRV empty**" are alternately displayed.

Operation 2 Press the **ENTER** key.

Display: **STATUS**

Operation 3 Press the **arrow** key and select the "**SCSI ID**" command.

Display: **SCSI ID**

Operation 4 Press the **ENTER** key and define the command.

Display; **View ID?**

Operation 5 Press the **arrow** key and select "**Set ID**" command.

Display: **Set ID?**

Operation 6 Press the **ENTER** key and define the command.

Display; **Lib.ID?**

Operation 7 Press the **arrow** key and select "**Drv. ID?**" command.

Display: **Drv. ID?**

Operation 8 Press the **ENTER** key and define the command.

Display; **Drv. ID 0?**

Operation 9 Press the **arrow** key and select "**Drv. ID 5**" command.

Display: **Drv. ID 5?**

Operation 10 Press the **ENTER** key and define the command.

Display: **Complete**

Operation 11 Set the power switch of this device to OFF.

Operation 12 Switch the power of this device ON again.

Operation 13 Wait for the completion of the power-on test.

Display: "**READY**" and "**DRV empty**" are alternately displayed

Operation 14 Check the "**READY**" display and then switch on the power of the server/workstation and the other devices to restart the system.

Important

When changing the SCSI ID of this device, be certain to execute a restart of this device, the server/workstation, and any other devices. Note that the restart of the server/workstation and the other devices should be executed after checking the "**READY**" display of this device.

3.7 Using the Emergency Release Key

As touched upon at the beginning of this chapter, this device has a double lock mechanism comprising a key operated door lock and a solenoid operated electronic lock. When the power is in the OFF condition, the electronic lock is activated and the door cannot be opened.

To release the door lock at the time of a power outage or emergency, release the electronic lock by following this procedure.

1. Release the door lock as usual by using the door lock key supplied with the main unit.

2. Insert the release key (supplied with the main unit) into the electronic lock release key insertion slot at the top of the main unit.

3. Press down the electronic lock key lightly and open the door at the same time.

Emergency Release Key supplied with the main unit

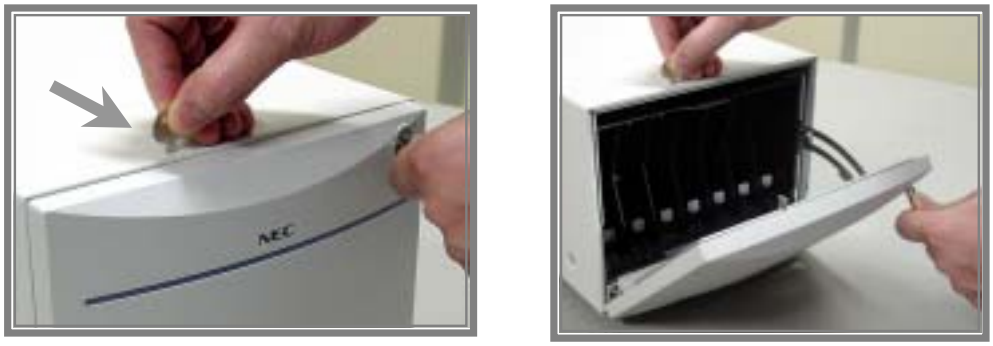


Figure 3-9 Using the Emergency Release Key

Chapter 4 Cartridges

4.1 Cartridges

The Tandberg LTO2 Autoloader uses the following types of LTO cartridges.

- TD P/N : 432744 LTO2 Data Cartridge
- TD P/N : 432630-1 LTO1 Data Cartridge
- TD P/N : 432631 LTO Universal Cleaning Cartridge

To ensure that your Tandberg LTO2 Autoloader conforms to our specifications for reliability, use only the above cartridges. Below figure shows the overview of a cartridge and its components.

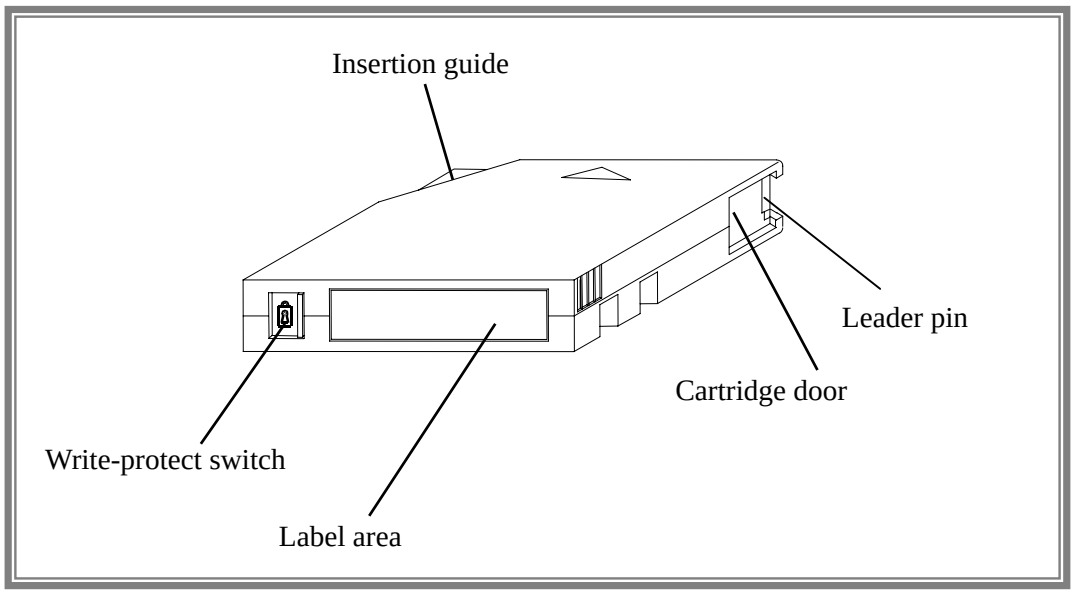


Figure 4-1 LTO Cartridge

4.1.1 Data Cartridge

The Data Cartridge contains 1/2-inch MP (metal-particle) tape.

The cartridge door protects the tape from contamination when the cartridge is out of the drive.

The write-protect switch prevents data from the accidental erasure of data.

The label area provides a location for placing a label. A label that extends outside of the recessed area can cause loading problems in the tape drive.

The insertion guide is a large, notched area that prevents users from inserting the cartridge incorrectly.

4.1.2 Cleaning Cartridge

The Tandberg LTO2 Autoloader itself determines when a drive head needs to be cleaned. It alerts you displaying "**REQ clean**" on the LCD. The cleaning cartridge is valid for 50 uses. .

Important

If you insert a cleaning cartridge when the tape drive does not need to be cleaned or if you insert a cleaning cartridge that has expired, the tape drive will eject the cleaning cartridge automatically.

4.2 Write-Protect Switch

Each LTO data cartridge has a write-protect switch that can be used to prevent accidental erasure of data. Before inserting the data cartridge into the tape drive, position the write-protect switch on the front of the cartridge. The position of the write-protect switch is shown below.

- Move the write-protect switch to the left to disable write protection.
  This means that data can be written to the data cartridge unless software write-protect is in effect..

- Move the write-protect switch to the right to enable write protection.
  This means that data can not be written to the data cartridge.

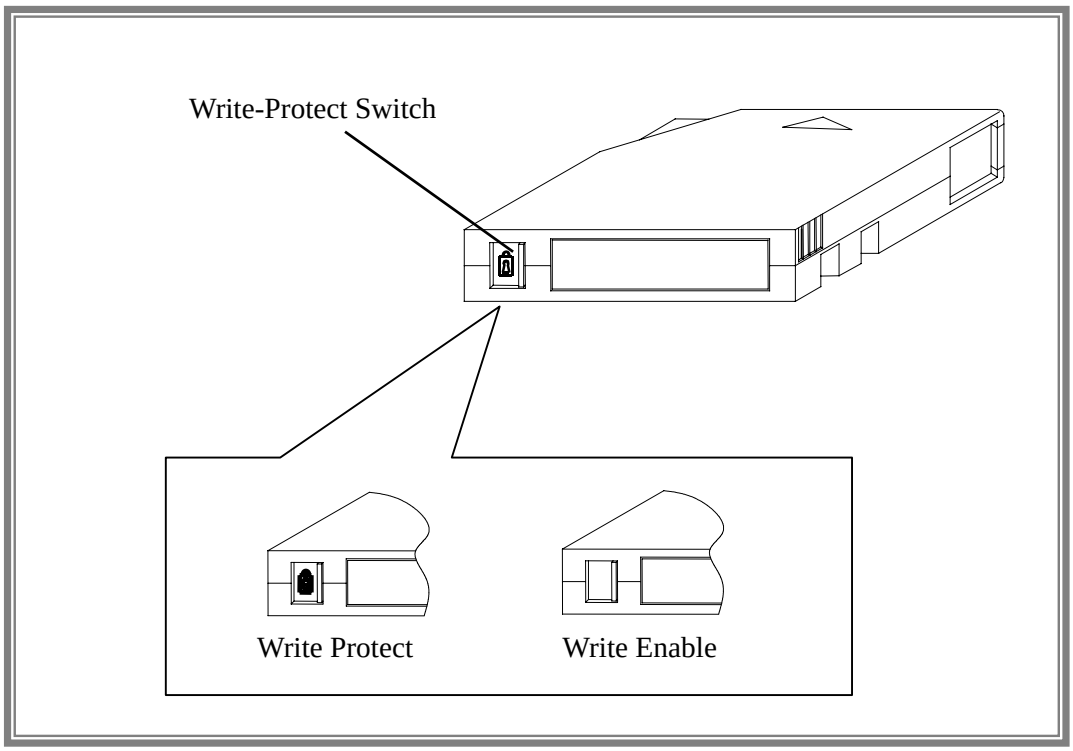


Figure 4-2 Setting the Write-protect Switch

4.3 Bar Code Label

The bar code label contains;

- A volume serial number that you can read.
- A bar code label that the Tandberg LTO2 Autoloader can read.

When appling a bar code labels to a cartridge position the bar code label only in the recessed label area (see below figure). A bar code label that extends outside of this recessed area can cause reading problems in the internal LTO drive or the robotics of the TD LTO2 Autoloader.

Sample Bar Code Label on the cartridge

Figure 4-3 Sample Bar Code Label on the Cartridge

Tip

Do not place any type of mark on the white space area at either end of the bar code. A mark in this area may prevent the Tandberg LTO2 Autoloader from reading the bar code label.

Using Bar Code Labels Precautions

When using a bar code labels, please observe the following precautions.

- Use only TANDBERG DATA-supplied bar code labels.
- Do not re-use a bar code label or re-apply a used bar code label over an existing label.
- Before you apply a new bar code label, remove the old label by gently pulling it.
- Remove the bar code label from the label sheet carefully. Do not stretch the bar code label or cause the edges to curl.
- Position the bar code label within the recessed label area..
- Do not place other autoloader readable bar code labels on other surfaces of the cartridge. They may interfere with the ability of the bar code reader to read the bar code.

4.4 Handling Precautions

This section describes precautions to take when handling the data cartridge.

4.4.1 Usage Precautions

☐ Before use

- Open the cartridge door and check that the reader pin is locked.
- Do not use a data cartridge that is damaged, misshapen, or bent.
- When using a data cartridge that has been stored under conditions other than the operation temperature and humidity conditions of the Autoloader, bring the cartridge into the environment in which it will be used for a period at least as long as the time that it was exposed to under conditions outside the operation temperature and humidity conditions (i.e.24 hours maximum) and then use. When the temperature difference is great between the storage and operation locations at this time, do not move the cartridge at once, rather, take care so that the temperature change is in the order of 10°C per hour and allow the data cartridge to adapt to the temperature of the operation location.

☐ When loading to magazine and fixed slots

- Please insert the data cartridge securely. (See Chapter 3 for details.) Firmly close the protective case from which the data cartridge was removed and store it in a clean place

☐ After use

- Be sure to return the used cartridge to the protective case and store it in a dust-free place The cartridge can be stored either horizontally or vertically.

☐ Disposal Method

- When disposing the cartridge, please follow the national and municipal guidelines for disposal.

4.4.2 General Precautions

☐ Do not touch the tape medium (i.e. the magnetic surface).

☐ Do not bring the cartridge close to objects that produce a magnetic field.

☐ Do not place the cartridge where it will be exposed to direct sunlight or near heaters.

☐ Do not subject the cartridge to strong shocks.

☐ Avoid handling the cartridge while eating and drinking or smoking. Also be careful not to allow the cartridge to come into contact with thinners, alcohol, beverages

☐ Be sure to return the cartridge to the case after use.

☐ Insert the cartridge into the magazine carefully.

☐ The data cartridge is sensitive to dirt and dust.

4.4.3 Standards for Prohibition of Use

When circumstances correspond to any of the following items, the continued use of that cartridge is prohibited. Exchange to a new data cartridge is necessary.

☐ When the data cartridge is subjected to a strong shock such as being dropped and it sustains damage.

☐ When the recording surface becomes soiled with liquid such as a soft drink, coffee, or tea, or a solvent, metal dust, tobacco ashes, or other contaminants.

Tip

Use of a data cartridge that falls under the aforementioned description may damage the heads or the device, or make it dirty and may cause breakdown of the device. If the soiled or damaged heads go unnoticed and the device is used as is with a new data cartridge, the new data cartridge will become soiled or scratched and the damage may spread.

4.4.4 Service Life

The life of the data cartridge will vary depending on the environment in which it is used and the following matters should be taken into consideration. (The service life may become shorter than the guideline depending on the environment in which it is used including such factors as temperature, humidity, and dust.)

☐ When a new data cartridge is used, a control number is assigned. It will probably be convenient to enter that number on the label of the data cartridge.

☐ Create a data cartridge control number ledger, record the days used, and estimate the number of years used and the cycles used.

☐ Periodically check the control ledger and marked labels of the data cartridges and dispose of the data cartridges when they have been used for a long time and their reliability is low such as when there is an occurrence of write and read errors.

4.4.5 Storage of Data Cartridges

Please observe the determined storage conditions and always keep the storage location clean.

☐ We recommend that the data cartridges be kept in the write protect condition.

☐ When cartridges are to be stored over a long period, we recommend that the data is read periodically to check that the backup data can be restored.

☐ In consideration of an unlikely but disastrous event, we recommend storage of data cartridges at a location remote from the system.

Chapter 5 Daily Maintenance

A method of maintenance is described so that the Autoloader can be maintained in the best condition for whenever it is used.

WARNING	
	In the unlikely event that this device should break down, or if a strange sound or strange smell were to arise, immediately set the power switch to OFF and disconnect the plug of this device's power cable from the power outlet to prevent a short-circuit of a circuit portion or an electrical shock.

5.1 Cleaning

This section describes the method of cleaning the Autoloader and the internal heads.

5.1.1 Cleaning of the Drive Head

Cleaning is important and removes dirt from the surface of the magnetic heads which arises from tape travel and from the dust of the operating environment. Continued writing and reading with dirty heads will result in the loss of proper writing and reading operations, shortened data cartridge life, scratched tape surfaces that will make the tape unusable, and other faults.

Important

The LTO cleaning cartridge (TD P/N 432631) is exhausted after it has performed 50 cleanings. Replace the cleaning cartridge when it has performed 50 cleanings.

5.1.1.1 Manually Cleaning of the Drive Head

Operation 1 Load the cleaning cartridge supplied with the main unit into any of the slots. The cleaning cartridge is housed in slot number 5 in this example.

Operation 2 Use the panel keys to load the cleaning cartridge into the drive. (Cleaning will start automatically.)
Display: **cleaning** (Displayed during cleaning.)

Operation 3 When cleaning is completed, "**DRV full**" is displayed.

Display: **DRV full**

Operation 4 Press the **ENTER** key.

Display: **STATUS**

Operation 5 Press the **arrow** key and select the "**EJECT**" command.

Display: **EJECT**

Operation 6 Press the **ENTER** key and define the "**EJECT**" command.

Display: **Eject Drv?**

Operation 6 Press the **ENTER** key and define the command.

Display: **To Slot 1?**

Operation 7 Press the **arrow** key and select "**To Slot 5?**".

Display: **To Slot 5?**

Operation 8 Press the **ENTER** key and select the command.

Display: **Complete** (when the command ends normally.)
Err. xxxxxx (when an error occurs. **xxxxxx** is the error code.)

5.1.2 Cleaning the Roller inside of the transporter

When the Alarm LED is blinking and "**REQ CLNROL**" message is displayed on the LCD, the Autoloader is requiring to clean the Roller inside of the transporter, hereafter called **CLNROL-function**.

As been described above, this Autoloader will teach you the time when it cleans automatically. But if you prefer not to use this function, it is possible to change the setting.

The Autoloader must be in maintenance mode to check or change the setting of this function.

5.1.2.1 Checking the CLNROL- function

The method of checking the CLNROL-function is described in this section.

Default CLNROL-function setting : Enable

Operation 1 Switch ON the power and wait for the completion of power-on test.

Display: **READY** and **DRV empty** are alternately displayed.

Operation 2 Press the **ENTER** key.

Display: **STATUS**

Operation 3 Press the **arrow** key and select the **MAINTENANC** command

Display : **MAINTENANC**

Operation 4 Press the **ENTER** key and define the command.

Display (line 1): **PASSWORD**
Display (line 2): **0000000000**

Tip

If you press the allow key, the number is up or down. If you press the enter key, the number is decided and the cursor move to the next digit. If you have made a mistake, press the escape key. All number you have entered are canceled.

Operation 5 In this condition, press the **ENTER** key and set the above password.

Display (line 2): **RCLN MODE?**

Operation 6 Press the **ENTER** key and define the command.

Display (line 2): **View?**

Operation 7 Press the **ENTER** key and define the command.

Display (line 2): **Enable** (or **Disable)** and
RtyCnt XX are alternately displayed.

5.1.2.2 Setting the CLNROL- function Disable

If you would like to set the CLNROL- function disable, follow the procedure described below.

Important

In normal operation, please use the default settings.

Operation 1 Switch ON the power and wait for the completion of power-on test.

Display: **READY** and **DRV empty** are alternately displayed.

Operation 2 Press the **ENTER** key.

Display: **STATUS**

Operation 3 Press the **arrow** key and select the **MAINTENANC** command

Display : **MAINTENANC**

Operation 4 Press the **ENTER** key and define the command.

Display (line 1): **PASSWORD**
Display (line 2): **0000000000**

Tip

If you press the allow key, the number is up or down. If you press the enter key, the number is decided and the cursor move to the next digit. If you have made a mistake, press the escape key. All number you have entered are canceled.

Operation 5 In this condition, press the **ENTER** key and set the above password.

Display (line 2): **RCLN MODE?**

Operation 6 Press the **ENTER** key and define the command.

Display (line 2): **View?**

Operation 7 Press the **arrow** key and select the **Set ?**.

Display (line 2): **Set ?**

Operation 8 Press the **ENTER** key and define the command.

Display (line 2): **Disable?**

Operation 9 Press the **ENTER** key and define the command.

Display (line 2): **Complete**

5.1.2.3 RtyCnt value in the CLNROL-function

You can choose the RtyCnt value in the CLNROL-function. RtyCnt means the number of the picking or putting error restoration in the transporter operation.
When the number of the picking or putting error restoration exceeds the set RtyCnt value, the Alarm LED is blinking and "**REQ CLNROL**" message is displayed on the LCD.

5.1.2.4 Changing the RtyCnt value

Default RtyCnt value : 15

The procedure described below is the operation in case of changing the RtyCnt from default value (=15) to 25.

Operation Example

Operation 1 Switch ON the power and wait for the completion of power-on test.

Display: **READY** and **DRV empty** are alternately displayed.

Operation 2 Press the **ENTER** key.

Display: **STATUS**

Operation 3 Press the **arrow** key and select the **MAINTENANC** command

Display : **MAINTENANC**

Operation 4 Press the **ENTER** key and define the command.

Display (line 1): **PASSWORD**
Display (line 2): **0000000000**

Tip

If you press the allow key, the number is up or down. If you press the enter key, the number is decided and the cursor move to the next digit. If you have a mistake, press escape key. All numbers you have entered are canceled.

Operation 5 In this condition, press the **ENTER** key and set the above password.

Display (line 2): **RCLN MODE?**

Operation 6 Press the **ENTER** key and define the command.

Display (line 2): **View?**

Operation 7 Press the **arrow** key and select the **Set ?**.

Display (line 2): **Set ?**

Operation 8 Press the **ENTER** key and define the command.

Display (line 2): **Disable?**

Operation 9 Press the **arrow** key and select the **RtyCnt 25?**.

Display (line 2): **RtyCnt 25?**

Operation 10 Press the **ENTER** key and define the command.

Display (line 2): **Complete**

5.1.2.5 Cleaning of the Roller

Maintenance personnel can clean the Roller of the internal transporter.

5.1.2.5.1 Execution timing of the cleaning

Important

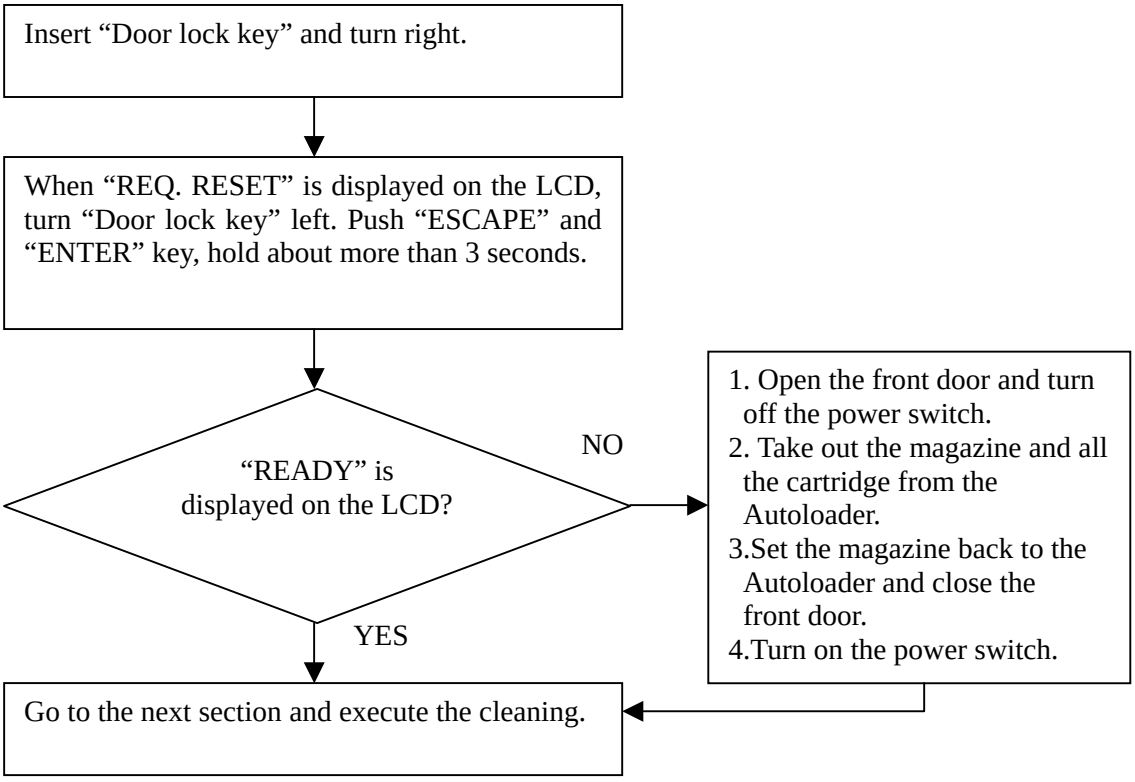
Before cleaning, please confirm “Backup” and “Restore” are not executed.

(1) When the request of the cleaning.

When the Alarm LED is blinking and "**REQ CLNROL**" message is displayed on the LCD, the Autoloader is requiring to clean the Roller inside of the transporter.

(2) When the “CMer error” happen.

If the error is caused by the contamination on the Roller, the Autoloader recovers by executing the cleaning as follows:



5.1.2.5.2 Tools and Parts

Please prepare the following items before beginning work.

- ●The Roller Cleaner Set
- ●A pair of gloves for the operation
- ●A small quantity of water(water supply)
- ●A wrist band for ESD(recomended)

Figure 5-1 Roller Cleaner Set

5.1.2.5.3 Setting Maintenance mode

To execute of the cleaning, setting maintenace mode is needed.

Operation 1 Switch ON the power and wait for the completion of power-on test.

Display: **READY** and **DRV empty** are alternately displayed.

Operation 2 Press the **ENTER** key.

Display: **STATUS**

Operation 3 Press the **arrow** key and select the **MAINTENANC** command

Display : **MAINTENANC**

Operation 4 Press the **ENTER** key and define the command.

Display (line 1): **PASSWORD**
Display (line 2): **0000000000**

Tip

If you press the allow key, the number is up or down. If you press the enter key, the number is decided and the cursor move next digit. If you have made a mistake, press escape key. All numbers you have entered are canceled.

Tip

If you enter the invalid password, the following message will be displayed.

Display (line 1): **PASSWORD**
Display (line 2): **invalid**

5.1.2.5.4 Setting Cleaning mode

Operation 1 Ensure your Autoloader is in maintenance mode.

Display (line 1): **READY**
Display (line 2): **F/W Rev.?**

Operation 2 Press the **arrow** key and select "**CLEAN ROL?**" command.

Display (line 1): **READY**
Display (line 2): **CLEAN ROL?**

Operation 3 Press the **ENTER** key and define the command.

Display (line 1): **CLEAN ROLL**
Display (line 2): **Eject Magz**

Operation 4 Remove the magazine carefully.

Display (line 1): **CLEAN ROLL**
Display (line 2): **Step 1 >>**

5.1.2.5.5 Cleaning the Roller

Operation 1 Press the **arrow** key (→) and define the command.
Then, the Roller of the internal transporter moves the position of the front side of the transporter as shown in figure 5-2. During moving the Roller, LCD displays the next messages.

Display (line 1): **CLEAN ROLL**
Display (line 2): **Caution**

CAUTION	
	Do not insert your hands during displaying **Caution** message as fingers may be pinched in the Roller.

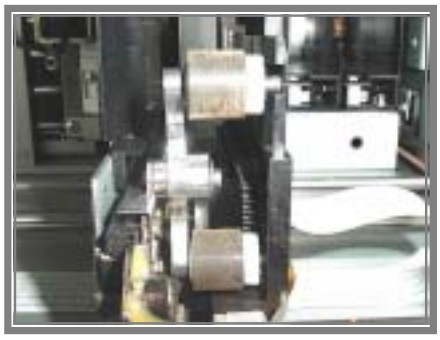


Figure 5-2
(The Roller is contaminated intentionally for the explanation.)

Operation 2

Slightly moisten with water on cotton tip.
Use the submitted bottle to reserve water in the Roller Cleaner Set.

Operation 3

Then clean the surface of the upper Roller as shown in figure 5-4.
(Figure 5-3 shows the upper Roller before cleaning.)

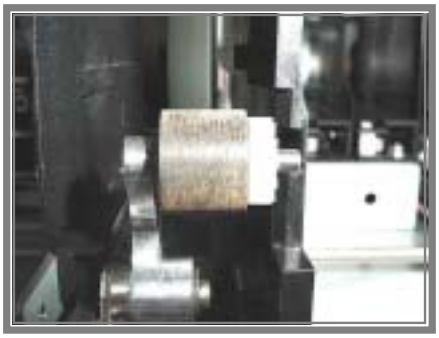


Figure 5-3

Figure 5-4

Operation 4

If you finished cleaning the front side of the upper Roller, rotate it as shown in figure 5-5 and clean all over the surface.
(Figure 5-6 shows the upper Roller after cleaning.)

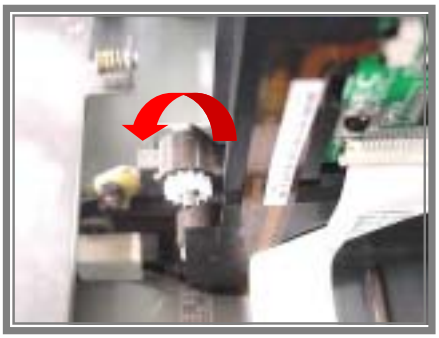


Figure 5-5

Figure 5-6

Operation 5

Wipe off remaining water on the Roller with a dry swab.

Operation 6

If you have finished cleaning of the upper Roller, press the arrow key (→) and define the command. Then the Roller moves backwards a little as shown in figure 5-7.

Display (line 1): **CLEAN ROLL**
Display (line 2): **Step 2 >>**

Figure 5-7

CAUTION	
	Do not insert your hands during displaying **Caution** message as fingers may be pinched in the Roller.

Tip

If you press the **arrow** key (←) in this position of the Roller, the Roller moves to previous position as shown in figure 5-6.

Operation 7

Then clean about three quarters of the Roller's surface as shown in figure 5-8. (Figure 5-9 shows it after cleaning.)

Figure 5-8

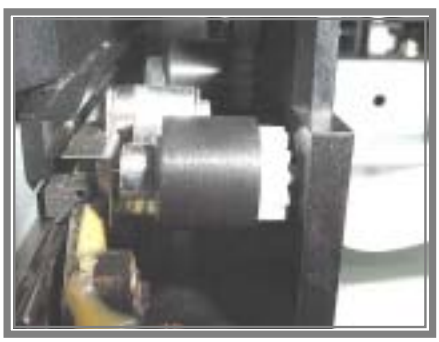


Figure 5-9

Operation 8

Wipe off remaining water on the Roller by dry swab.

Operation 9

If you have finished cleaning of the upper Roller, press the **arrow** key (→) and define the command. Then the Roller moves further backwards a little as shown in figure 5-10.

Display (line 1): **CLEAN ROLL**
Display (line 2): **Step 3 >>**

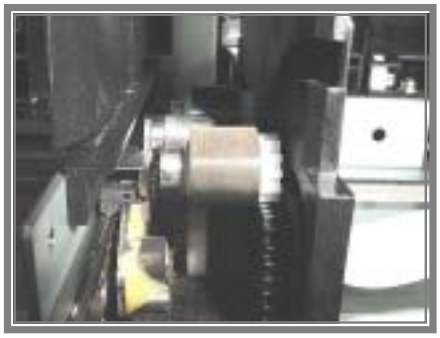


Figure 5-10

CAUTION	
	Do not insert your hands during displaying **Caution** message as fingers may be pinched in the Roller.

Tip

If you press the **arrow** key (←) in this position of the Roller, the Roller moves to previous position as shown in figure 5-9.

Operation 10

Then clean the remaining surface of Roller as shown in figure 5-11. (Figure 5-12 shows the upper Roller after cleaning.)

Figure 5-11

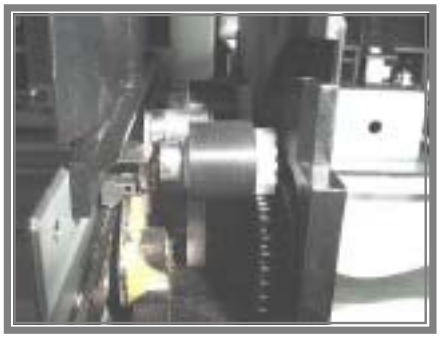


Figure 5-12

Operation 11

Wipe off remaining water on the Roller with a dry swab.

Operation 12

If you have finished Operation11, press the **arrow** key (→) and define the command. Then the Roller moves the final position as shown in figure 5-13.

Display (line 1): **CLEAN ROLL**
Display (line 2): **Finish >>**

CAUTION	
	Do not insert your hands during displaying **Caution** message as fingers may be pinched in the Roller.

Figure 5-13

Operation 13

You have finished cleaning the Roller.
Autoloader is ready to operate. Wait 30 minutes for becoming dry.

Important

Do not touch the Roller and dry the Roller completely.

5.1.3 Cleaning of the Main Unit

5.1.3.1 Cleaning of the exterior

Slightly moisten a soft cloth with water or detergent and wipe gently to clean the outside of the unit.

Important

You must NOT use benzene, thinners, insecticides and other volatile chemicals, because the shape and the color of the surface might be changed.

5.1.3.2 Cleaning of the fixed slots

Wipe the inside of the fixed slots gently with a dry swab.

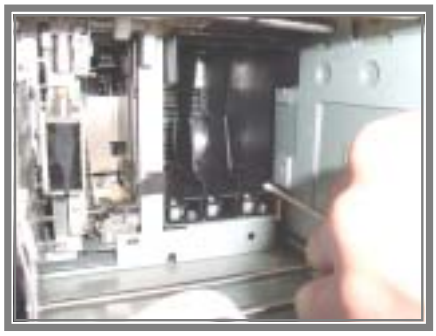


Figure 5-14

Important

Do not raise dust at cleaning the inside.To protect breaking of the FFC, do not use a vacuum cleaner.Be careful of breaking FFC.

5.1.3.3 Cleaning of the interior

Wipe the floor of inside softly by dry swab.

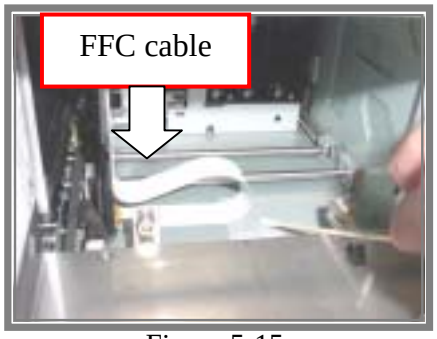


Figure 5-15

5.1.4 Cleaning of the magazine

Wipe the inside of the magazine gently with a dry swab.

Figure 5-16

5.1.5 Cleaning of the cartridge

Wipe the surface of the cartridge gently with a dry swab.

Important

Do not open the shutter, otherwise dust may enter the inside of the cartridge.

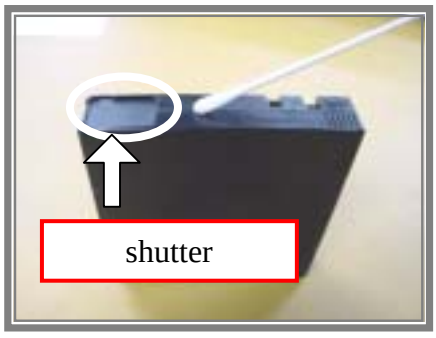


Figure 5-17

5.2 Movement and Shipping of the Autoloader

Follow the procedure described below when moving or shipping the Autoloader.

Important

When shutting the System, see "2.7 Start and Shut Down of the System".

1. Check that the drive does not contain any cartridges.

2. If there are any cartridges in the drive, eject them. Refer to the manual for the backup software or use the front panel keys. (See "3.5 Operation of Panel Keys" for details.)

3. Remove all cartridges from the Autoloader.

Important

Do not switch off the power of the Autoloader until the interface is in an inactive condition. If the power of a SCSI peripheral device is switched off while the bus is in an active condition, data may be lost or the condition of the bus could become unstable. When the computer is connected to a LAN, be certain to contact the system administrator before switching off the power.

4. Switch off the power of the Autoloader.

5. Disconnect the AC power cable, the SCSI cable, and the terminating resistance connector.

6. House the magazine, and lock the door.

Tip

When shipping this device, please pack it using the original packaging materials and box. If these packaging materials are not available, pack the device using cushioning material so that the device is not subjected to shock at time of shipping.

Chapter 6 Troubleshooting

The following table describes the method of troubleshooting the Autoloader.

Should the Autoloader fail to operate properly, please check the details of the table for information. If the problem is not covered in the table or if it persists even though the various restoration measures have been tried, please contact your nearest TD Customer Support Center company. Please refer to the manual of the server/workstation or application software for any associated problems.

> Inquire with the system administrator before switching off the power. If the power is switched off while an active device is connected to the SCSI bus, don't switch the power back on again. If this is done while the bus is in an active condition, data may be lost or the host system could stop.

Phenomenon	Recovery Procedure
Power Supply	
Autoloader does not switch on.	・Check the connection of the power cable. ・Check whether the power switch is ON. ・Check whether power is being supplied to the power outlet. Try using another available power outlet. ・Replace the power cable. ・Check whether the fan at the rear panel of the Autoloader is rotating.
The power-on test failed. An error message appears on the front panel LCD.	・Check whether all of the cartridges are completely inserted into the magazine and fixed slots, and whether the magazine is properly installed in the Autoloader. ・Check whether the internal packaging materials have been removed. ・Check whether the front door is properly closed.
The cartridge that was inserted in the drive at the time of the Autoloader power-on failure does not return to an operational condition even after the power is switched on.	・Check whether the fan at the rear panel of the Autoloader is rotating. ・Switch off the power of the Autoloader and then switch it back on right away.
Messages don't appear on the display	・Check whether the power cable is connected to a live power outlet. ・Check whether the power switch is ON. ・Check whether the fan at the rear panel of the Autoloader is rotating. ・Switch off the power of the Autoloader and then switch it back on right away.

Phenomenon	Recovery Procedure
Cartridge Operation	
Cartridge is entwined in the transporter.	・Execute cleaning of the Roller.See”Section 5.1.2” ・If the phenomenon has a relapse,contact your nearest Customer Support Center.
Transporter does not load/unload the cartridge.	・Execute cleaning of the Roller.See”Section 5.1.2” ・If the phenomenon has a relapse,contact your nearest Customer Support Center.
The cartridge could not be taken out from the drive.	・Execute cleaning of the Roller.See”Section 5.1.2” ・If the phenomenon has a relapse,contact your nearest Customer Support Center.
Connections	
Host does not detect Autoloader.	・Check whether the terminating connector is mounted to the Autoloader and whether the cables are properly connected. ・Check whether the Autoloader is recognized by the operating system.
Backup software application of the host does not detect Autoloader.	・When the backup software detects the drive but does not detect the Autoloader, check whether the Autoloader module or the changer option accompanies the backup software. Most software packages require an Autoloader "robotic" and an additional module for communications. ・When the backup software detects the Autoloader but does not detect the drive, check whether the correct backup software driver has been installed.
Changed SCSI ID of the drive is not recognized by the host computer.	・Check whether different ID numbers have been assigned to the SCSI devices on the same bus. ・Restart the host.
After connection to the Autoloader, the response speed slows down, or the system stops.	・Check that there are no conflicts of the SCSI ID among all the devices connected to the host. ・There is no need to put the SCSI ID in a specific order on the backup software.

Phenomenon	Recovery Procedure
Autoloader Performance	
Data backup efficiency of the Autoloader is poor.	Check whether the Autoloader drive is connected to an exclusive SCSI device and whether it is part of a daisy chain connection with another tape drive or hard drive.
Operation	
Cannot write to data cartridge.	・Check the access rights of the host device against the file system. ・Check whether the data cartridge being used is the proper type. ・Check the write protect tab of the tape and ascertain whether the tape is in a condition that can accept writing. ・Replace with a new data cartridge.
Cleaning	
The cleaning message is displayed repeatedly.	・Replace the current cleaning cartridge with a new one. ・When a message to the effect that cleaning is required appears on the LCD even after cleaning of the drive, replace the cleaning cartridge.
Alarm LED is brinking. “REQ CLNROL” message is displayed repeatedlly.	・Execute cleaning of the Roller.See”Section 5.1.2”
Others	
The cartridge remains in the drive.	・Check the setting of the application software(change setting , removing the cartridge after backup job). ・Eject from operation panel. ・Execute cleaning of the Roller.See”Section 5.1.2” ・If the phenomenon has a relapse,contact your nearest Customer Support Center.

Error code	Cause	Recovery Procedure
CMer****21～ CMer****27	The Autoloader detected an error during ejection of the cartridge from the drive.	・Execute cleaning of the Roller.See"Section 5.1.2" ・If the phenomenon has a relapse,contact your nearest Customer Support Center.
CMer****2B CMer****2C CMer****2E	The Autoloader detected a communicating error with the drive.	・Switch off the power of the Autoloader and then switch the power back on.
CMer****31～ CMer****39 CMer****3A～ CMer****3F	The Autoloader detected an error during loading of the cartridge to the drive.	・Execute cleaning of the Roller.See"Section 5.1.2" ・If the phenomenon has a relapse,contact your nearest Customer Support Center.
CMer****51～ CMer****55	The Autoloader detected an error during ejection of the cartridge from the fixed slots.	
CMer****5A～ CMer****5F	The Autoloader detected an error during ejection of the cartridge from the magazine.	
CMer****61～ CMer****69	The Autoloader detected an error during loading of the cartridge to the fixed slots.	
CMer****6F		
CMer****71～ CMer****79	The Autoloader detected an error during loading of the cartridge to the magazine (i.e. putting operation).	
CMer****B0～ CMer****BE	An error that occurred during the operation of the (optional) bar code reader.	・Check whether there is a cartridge in slot 10. ・Check whether there is any foreign matter in the magazine or transporter. ・Switch off the power of the Autoloader and then switch the power back on.
CMer****C0 CMer****C1	The Autoloader detected an error during error restoration.	・Switch off the power of the Autoloader and then switch the power back on.
CMer****D0～ CMer****D4	The Autoloader detected an error during the Y move system initialization.	・Check whether there is any foreign matter in the transporter. ・Switch off the power of the Autoloader and then switch the power back on.
CMer****D7～ CMer****D9	The Autoloader detected an error during Initialize Element Status command execution from SCSI.	・Check whether there is any foreign matter in the transporter. ・Switch off the power of the Autoloader and then switch the power back on.
CMer****DA～ CMer****DC	The Autoloader detected an error during the Y move of the transporter.	・Check whether there is any foreign matter in the transporter. ・Switch off the power of the Autoloader and then switch the power back on.

Error code	Cause	Recovery Procedure
CMer****E0	The Autoloader detected internal hardware error.	・Replace the Autoloader (not including the Drive Sled Assembly).
CMer****E1～ CMer****E3	The Autoloader detected an error during the P move system initialization.	・Remove the cartridge from the transporter. ・Switch off the power of the Autoloader and then switch the power back on.
CMer****E4～ CMer****E6	The Autoloader detected an error during the P move system initialization.	・Check whether there is any foreign matter in the transporter. ・Switch off the power of the Autoloader and then switch the power back on.
CMer****E7～ CMer****E8	An error that occurred during the operation of the bar code reader.	・Switch off the power of the Autoloader and then switch the power back on.
CMer****ED～ CMer****EF CMer****F0～ CMer****F9 CMer****FA～ CMer****FE	The Autoloader detected an error during error restoration.	・Execute cleaning of the Roller.See"Section 5.1.2" ・If the phenomenon has a relapse,contact your nearest Customer Support Center.
D.err 0101	The Autoloader detected timeout error on the communication with the drive.	・Switch off the power of the Autoloader and then switch the power back on. ・If the phenomenon has a relapse,contact your nearest Customer Support Center.
D.err 0110	The Autoloader detected parity error on the communication with the drive.	
D.err 0111	The Autoloader detected framing error on the communication with the drive.	
D.err 0112	The Autoloader detected overrun error on the communication with the drive.	
D.err 0140	The Autoloader detected a error on the Load/Unload command.	
D.err 0170	The Autoloader detected a error on the communication with the drive.	
D.err 0180	The Autoloader detected a error on the communication with the drive.(NAK retry over)	
D.err 0181	The Autoloader detected a error on the communication with the drive.(SNAK retry over)	
D.err 0102～ D.err 010F D.err 0113～ D.err 013F	The Autoloader detected cartridge position or timeout error before issuinig Load/Unload/Unthread command.	
D.err 0190	The Autoloader detected timeout error before issuing Unload command.	
D.err 0191	The Autoloader detected timeout error before finishing Unload command.	
D.err 0192	The Autoloader detected state error on the communication with the drive .	

Error code	Cause	Recovery Procedure
DRV Err 1	There has been detection of the drive exceeding the recommended operation temperature.	Improve the enviroment temperature.See Appendix A
DRV Err 2	There has been detection of the drive input voltage reaching the limit of or exceeding the permissible range.	Contact your nearest Customer Support Center.
DRV Err 3	A drive firmware error has occurred.	Contact your nearest Customer Support Center.
DRV Err 4	A fault has occurred in the drive firmware or hardware.	
DRV Err 5	A fault has occurred in the drive hardware.	
DRV Err 6	A drive hardware or a media error has occurred.	Replace the cartridge.
DRV Err 7	A fault of the media has occurred.	Replace the cartridge.
DRV Err 8	An error has occurred in the drive hardware or SCSI bus.	Contact your nearest Customer Support Center.
DRV Err 9	An error has occurred in the drive hardware or RS-422 connection.	
DRV Err A	An error has occurred in the drive hardware.	
COMM.ERROR	The Autoloader detected communication error with the drive.	･Switch off the power of the Autoloader and then switch the power back on. ･If the phenomenon has a relapse,contact your nearest Customer Support Center.
REQ CLNROL	The Autoloader is requesting the cleaning of the Roller.	･Execute cleaning of the Roller.See"Section 5.1.2"
FATEL ERR.	The door has been forced open during the transporter operation and the magazine has been removed.	･Switch off the power of the Autoloader and then switch the power back on.
MOVE ERROR	The Autoloader detected transporter error during Load or Unload cartridge.	･Execute cleaning of the Roller.See"Section 5.1.2" ･If the phenomenon has a relapse,contact your nearest Customer Support Center.
SCSI P Err	The Autoloader detected SCSI parity error.	･Check the conection of SCSI cable and SCSI terminator.

6.1 Other Matters to Check

In addition to the aforementioned check items, also check the installation condition of this device and the cable connections. If any switch settings have been changed that are not described in this manual, or if any connections that have not been described have been made to the connectors, please return these changes to the original condition at time of purchase.

Also check any connected devices. Please refer to the instruction manual that was supplied with the device for details.

6.2 When Requesting Maintenance

When requesting maintenance for repair or parts replacement, make a note of the indicator display condition and the details of the LCD indications. This information will be useful at maintenance time.
We also ask that you submit the contents that are entered on the Operation Conditions and Customer's Sheet located at the end of the manual.

The warranty card may be required at the time of maintenance. Please have it ready.

Appendix A Specifications

Autoloader Main Unit

Maximum data storage capacity	200GB×10[*1] (400GB[*2]×10[*1])
	*1 9 for Tandberg LTO2 Autoloader w/BCR[*3] *2 2:1 compressed *3 with Bar Code Reader
Number of cartridges	Max. 10[*1]
SCSI Interface	Ultra160 LVD
Dimensions(including filter)	223(W)696(D)×178(H) mm[*4] [8.8(w)×27.4(D)×7.0(H) in.]
Rackmount kit optional	*4 A vacant space of 5U is required when mounting this Autoloader into a rack.
Weight	Less than 18kg (39.7lbs.)
Maximum data transfer rate	35MB/s (native) 70MB/s (at 2:1 compressed)
Line voltage	AC100-127/200-240V (auto voltage select)
Line frequency	50/60Hz
Power consumption	1.3 - 0.5A
Environmental conditions	
[Operating]	
Temperature	10ºC - 35ºC (50ºF - 95ºF)
Relative humidity	20% - 80%RH (non-condensing)
Wet bulb temperature	26ºC maximum (79ºF)
[Non-operating[*5]]	
Temperature	–40ºC - 60ºC (-40ºF - 140ºF)
Relative humidity	10% - 90%RH (non-condensing)
Wet bulb temperature	26ºC maximum (79ºF)
[Storage[*6]]	
Temperature	16ºC - 32ºC (61ºF - 90ºF)
Relative humidity	20% - 80%RH (non-condensing)
Wet bulb temperature	26ºC maximum (79ºF)

*5 without cartridge tapes
*6 with cartridge tapes (non-operational cartridge)

LTO2 Data Cartridge (TD P/N: 432744)
LTO1 Data Cartridge (TD P/N: 432630-1)

Before you use a data cartridge, acclimatize it to the operating environment for a time equal to the time that it was out of the operating environment, up to a maximum of 24 hours.

The best storage container for the data cartridge is the original shipping container.

When you ship a data cartridge, place it in a sealed, moisture-proof bag to protect it from moisture, contaminants, and physical damage. Ship the cartridge in a shipping container that has enough packing material to cushion the data cartridge and prevent it from moving within the container.

Capacity per cartridge	200 GB (with 2:1 compression：400 GB)
	100 GB (with 2:1 compression：200 GB)

Environmental conditions

[Operating]

Temperature	: 10 - 45ºC (50ºF - 113ºF)
Relative humidity	: 10 - 80%RH (non-condensing)
Wet bulb temperature	: 26ºC maximum (79ºF)

[Storage*8]

Temperature	: 16 - 32ºC (60ºF - 90ºF)
Relative humidity	: 20 - 80%RH (non-condensing)
Wet bulb temperature	: 26ºC maximum (79ºF)

*7 with Bar Code Label
*8 Operational storage

Universal cleaning cartridge (TD P/N: 432631)

This cleaning cartridge is valid for 50 uses.

Environmental conditions are the same as for the data cartridge

Appendix B Optional Items and Supplies

Optional Items

The items listed below are available for the Autoloader. Please advise your dealer of the product name and part number at the time of purchase.

Table-B1 Optional Items

Product Name	TD P/N	Specification
LTO1 Data cartridge	432630-1	See Appendix A.
LTO2 Data cartridge	432744	See Appendix A.
Magazine, LTO media (7 slots)	432664	Same as the magazine supplied with the Autoloader.
LTO Bar Code Label	432665	100

Supplies

The items listed below are available for the Autoloader. Please advise your dealer of the product name and part number at the time of purchase.

Table-B2 Supplies

Product Name	P/N	Specification
Cleaning cartridge	432631	Used to clean the heads of the Autoloader .
Roller cleaner set	432669	
Filter Element	432697	Replace the Filter Element every 6 months.

Appendix C Error Code

When an error occurs with the Autoloader, a 4-to-6 digit error code is displayed on the LCD on the front panel of the Autoloader. Various messages may also be displayed as required.

Error codes are roughly classified according to the leading character string as described below.

Leading character string

CMer : Error related to the transporter
D.err : Error related to the derive interface
Err. : Error related to the panel operation

CMer Error

The 6-digit error codes that are displayed comprise Code 1 (large classification), Code 2 (intermediate classification), and Code 3 (small classification), and the "**CMer**" character string is configured at the leading position as described in the examples below.

Examples of error code displays : **CMer** ○○ □□ △△

○○ : Code 1 (large classification)
□□ : Code 2 (intermediate classification)
△△ : Code 3 (small classification)

CMer Error Code 1

Table-D1 sorts the contents of **CMer** error code 1 errors.
Displayed here is the large classification of operations at the time of error occurrence.

Table-D1 **CMer** Error Code 1 Table

○○	Description
20	An error occurring during the Move Medium command execution from SCSI.
30	An error occurring during the Initialize Element Status command execution from SCSI.
40	An error occurring during transporter P move system initialization.
70	An error occurring during transporter Y move system initialization.

CMer Error Code 2

Table-D2 sorts the contents of **CMer** error code 2 errors.
Displayed here is a further classification of the operation of **CMer** error code 1.

Table-D2 **CMer** Error Code 2 Table

□□	Description
00	This error code is conforms to the upper "**CMer** Error Code 1".
20	An error occurring during ejection of the cartridge from the drive.
30	An error occurring during loading of the cartridge to the drive.
40	An error occurring during transporter P drive system initialization-error restoration.
50	An error occurring during ejection of the cartridge from the magazine slot.
60	An error occurring during loading of the cartridge to the magazine slot.
70	An error occurring during transporter Y move.
80	An error occurring during inventory check of the cartridges.
81	An error occurring during reading the bar code label.
9X	An error occurring during accessing the drive.

CMer Error Code 3

These error codes show an essential factor of CMer error.See Capter6(code with cause and Recovery Procedure).

D.err

The displayed error codes are 4 digits and configured as described below.

Examples of error code displays : **D.err** ○○○○

Table-D4 sorts the **D.err** error codes and their contents.

Table-D4 **D.err** Error Code Table

○○○○	Description
0101	The Autoloader detected timeout error on the communication with the drive.
0110	The Autoloader detected parity error on the communication with the drive.
0111	The Autoloader detected framing error on the communication with the drive.
0112	The Autoloader detected overrun error on the communication with the drive.
0140	The Autoloader detected an error on the Load/Unload command.
0170	The Autoloader detected an error on the communication with the drive.
0180	The Autoloader detected an error on the communication with the drive.(NAK retry over)
0181	The Autoloader detected an error on the communication with the drive.(SNAK retry over)
0102～010F, 0113～013F	The Autoloader detected cartridge position or timeout error before issuing Load/Unload/Unthread command.
0190	The Autoloader detected timeout error before issuing Unload command.
0191	The Autoloader detected timeout error before finishing Unload command.
0192	The Autoloader detected state error on the communication with the drive .

Err.

The displayed error codes are 4 digits and configured as described below.

Example of error code display : **Err.** ××××

Table-D5 sorts the **Err** error codes and their contents.

Table-D5 **Err** Error Code Table

××××	Description
0101	The Autoloader detected timeout error on communication with the drive.
0110	The Autoloader detected parity error on communication with the drive.
0111	The Autoloader detected framing error on communication with the drive.
0112	The Autoloader detected overrun error on communication with the drive.
0140	The Autoloader detected an error on the Load/Unload command.
0170	The Autoloader detected an error on the communication with the drive.
0180	The Autoloader detected an error on the communication with the drive.(NAK retry over)
0181	The Autoloader detected an error on the communication with the drive.(SNAK retry over)
0102～010F, 0113～013F	The Autoloader detected cartridge position or timeout error before issuing Load/Unload/Unthread command.
0190	The Autoloader detected timeout error before issuing Unload command.
0191	The Autoloader detected timeout error before finishing Unload command.
0192	The Autoloader detected state error on communication with the drive.
4005～4007	The Autoloader detected an error during Eject from slot.
4008～400A	The Autoloader detected an error during Load to slot.
4011	Operating mistake.
4051～4053	The Autoloader detected an error during self- test(maintenace mode).

Messages

Messages such as the following are displayed as required.

Messages Related to the Drive Interface

Table-D6 Table of Messages Related to the Drive Interface

Message	Description
Drive status	
Calibrate	The drive is being calibrated.
Cleaning	The drive is being cleaned.
Erasing	The drive is erasing.
Loading	The drive is loading.
Locating	The drive is locating.
Reading	The drive is reading.
Rewinding	The drive is rewinding.
REQ clean	The drive is requesting a cleaning.
Unloading	The drive is unloading.
Wait load	**W**aiting for loading completion following execution of the Load command.
Wait unload	Waiting for unloading completion following execution of the Unload command.
Writing	The drive is writing.
DRV full	There is a cartridge in the drive.
DRV empty	There isn't a cartridge in the drive.
Autoloader and Drive	
COMM.ERROR	The Autoloader detected a communication error with the drive.
Drive error and caution	
DRV Err 1	There has been detection of the drive exceeding the recommended operation temperature.
DRV Err 2	There has been detection of the drive input voltage reaching the limit of or exceeding the permissible range.
DRV Err 3	A drive firmware error has occurred.
DRV Err 4	A fault has occurred in the drive firmware or hardware.
DRV Err 5	A fault has occurred in the drive hardware.
DRV Err 6	A drive hardware or a media error has occurred.
DRV Err 7	A fault of the media has occurred.
DRV Err 8	An error has occurred in the drive hardware or SCSI bus.
DRV Err 9	An error has occurred in the drive hardware or RS-422 connection.
DRV Err A	An error has occurred in the drive hardware.

Panel Operation and Other Messages

Table-D7 Table of Panel Operation and Other Messages

Message	Description
BUSY	The transporter is operating.
Complete	The executed command has normally completed.
door open	The front door is open.
Dst.full	There is (isn't) a cartridge in the loading (ejection) destination slot.
err.BCR ini	An error occurred during the initial inventory scan.
FATAL ERR.	The door has been forced open during the transporter operation and the magazine has been removed.
ILLEGAL MODE	Dip switch settings are not appropriate.
key unlock	The door lock key is unlocked.
no magazine	The magazine is not loaded.
NOT READY	The Autoloader is engaged in the initial operation or an error has occurred.
Not Support	An unsupported command has been received.
open ok	Opening of the door is permitted.
OutOfRange	The Autoloader detected an error during the Y axis operation.
READY	The Autoloader is ready to operate.
REQ CLNROL	Execute cleaning of the Roller.See"Section 5.1.2"
REQ. drv ID	Resetting has been requested because the ID data of the drive in memory is abnormal.
REQ.RESET	Resetting has been requested because the error restoration has been finished.
Reselect	The same ID is set for the loader and drive SCSI ID settings.
SCSI P Err	The Autoloader detected SCSI parity error.
SCSI Reset	The Autoloader detected SCSI reset.
SRC.empty	There is (isn't) a cartridge in the loading (ejection) destination drive.
S10 forBCR	Remove the cartridge from slot 7. Slot 10 is a free slot for the TD LTO2 Autoloader w/BCR.
wait. .	Waiting for authorization to open the door.

Tandberg LTO2 Autoloader
Installation and User's Manual

Revision 1 (August 13, 2003)

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