CAUTION:

- This guide includes important information to use the product safely and to prevent injury or property damage. Be sure to read this manual carefully and understand the descriptions fully before using the product.
- Keep this guide with the product so that you can refer to it when needed.
- Transfer this guide with the product when transferring the product to another party.
Safety Precautions

To ensure safe use, carefully read and understand these Safety Precautions before using this unit.

Handle this unit properly, as described in this manual, to prevent injury or property damage.

Keep this guide at hand for immediate reference when needed.

The following symbols are used in this guide to make it easy to understand how to operate the unit safely and correctly. Confirm the following carefully before reading this manual.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚠️ WARNING</td>
<td>Indicates that there is a risk of death or serious injury.</td>
</tr>
<tr>
<td>⚠️ CAUTION</td>
<td>Indicates that there is a risk of injury and/or property damage.</td>
</tr>
</tbody>
</table>

Risks and necessary actions to reduce risks are indicated individually by the following symbols.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚠️</td>
<td>Indicates that smoking and/or fire may occur.</td>
</tr>
<tr>
<td>⚠️</td>
<td>Indicates that explosion and/or bursting may occur.</td>
</tr>
<tr>
<td>⚠️</td>
<td>Indicates that you may be electrically shocked.</td>
</tr>
<tr>
<td>⚠️</td>
<td>Indicates that you may be injured by poison.</td>
</tr>
<tr>
<td>⚠️</td>
<td>Indicates that your hands or fingers may be pinched and injured.</td>
</tr>
<tr>
<td>🚫</td>
<td>Indicates general prohibitions.</td>
</tr>
<tr>
<td>🚫</td>
<td>Indicates that devices are prohibited from being disassembled for safety.</td>
</tr>
<tr>
<td>🚫</td>
<td>Indicates that touching the device is prohibited.</td>
</tr>
<tr>
<td>🚫</td>
<td>Indicates general instructions.</td>
</tr>
<tr>
<td>⚠️</td>
<td>Indicates that the plug should be removed or the circuit breaker of the power distribution panel should be turned off.</td>
</tr>
</tbody>
</table>
### WARNING

| Be careful when touching or reaching inside the unit. |
| Be sure to close all the doors of the unit unless it is necessary to keep them open. When working with the unit door opened, do not unnecessarily touch or approach components. There is a possibility of electric shock or injury. |

| Do not insert foreign matter or objects. |
| Do not allow metal strips or fluid to enter the unit through gaps such as the air vent or the front and rear doors when working with the doors open. There is a possibility of fire or electric shock. |

| Do not disassemble, repair or modify the unit. |
| Never disassemble, repair or modify this device. Doing so may result in electric shock, fire, or burn injuries as well as malfunction of the device. Furthermore, electrical interference may occur and the guarantee may be void. |

| Measures against failure and damage |
| If the unit is faulty or damaged, turn off the power switch and pull out the plug from the power outlet. Note that data may be damaged if the unit is turned off during operation. Contact your local maintenance service company for repair. |

| Do not use when smoke, overheating, foul odor, or abnormal noise are detected. |
| If smoke, overheating, foul odor or abnormal noise is detected, immediately turn off the power switch and pull out the plug from the power outlet. Continuing to use the unit may cause fire. Note that data may be damaged if the unit is turned off during operation. Contact your local NEC sales representative or maintenance service company for repair. |

| Take caution when mounting unit onto rack. |
| The Autoloader weighs approximately 13 kg. Note the following precautions to ensure safety.  
  • Before using the Autoloader, read the "Cautions on Handling" on page 7.  
  • Use the supplied mounting device to carry and position the Autoloader. If the mounting device is not available, remove the cartridge to reduce the unit's weight before picking it up.  
  • Mechanical load: Make sure the load on the rack is balanced. A lopsided load may be hazardous. Consider the total weight being mounted on the rack. To avoid poor balance, load heavier units on lower racks otherwise the rack may become unstable causing it to fall over. |

- 3 -
### CAUTION

**Be careful when handling the LCD if broken.**
The unit contains an LCD. The LCD contains liquid which is harmful to the human body. In addition, the backlight of the LCD contains mercury. When touching the broken LCD, be careful not to touch the liquid inside the LCD. If the liquid leaking from the broken LCD enters the mouth, wash it out immediately and consult a doctor. If the liquid adheres to the skin or gets into the eyes, wash with water for 15 minutes or more and consult a doctor. Contact your local maintenance service company for repair of the broken LCD.

**Prevent damage caused by static electricity.**
This unit contains electronic components sensitive to static electricity. The electronic components in the library unit may be easily damaged by a small amount of static electricity. An error does not always occur immediately after the components are damaged. However, an intermittent error may occur because the damage to the unit becomes progressively more severe.
- Before reaching into or touching the library, touch an unpainted metal part of the unit. A commercial anti-static wrist strap with a clip terminal is effective for static electricity prevention.
- If the frame of the library unit is metal, touch the frame. Otherwise, touch the wall part of the library unit or a screw of the door frame.
- Stay as still as possible when touching the drive or components in the library unit.

**Handling of SAS cables**
Note the following precautions when handling SAS cables.
- When mounting, protect the connectors and contacts from buckling damage, dust, and dirt.
- Secure the locking nuts on screws to prevent loosening or poor fitting. Remove these locking nuts before removing cables.
- Avoid stretching or twisting cables when attaching or removing them.
- Do not apply excessive force to the connectors or cables when attaching cables.
### Handling the power cord

Observe the following cautions when handling the power cord.

- Do not touch the plug with wet hands as this may cause electric shock.
- When inserting the power cord into and removing it from the power outlet, be sure to hold the plug, not the cord. Failure to do so may damage the power cord, causing fire or electric shock.
- Use only the power cord supplied with the unit. Using a power cord with non-compliant input power conditions may cause smoke or fire.
- Connect the power cord to a power outlet that has an earth terminal, and that can supply the current required by the specified voltage. If the power cord is connected to an outlet with non-compliant input power conditions, it may cause smoke or fire. Using an outlet with no earth terminal may result in electric shock or electrical interference.
- Do not use single-source multi-thread wiring as this may cause smoke or fire.
- If there is dust in the plug or outlet, remove the dust only after shutting down the unit and turning off the power, in that order. Dust must be removed as it may cause degradation of the insulation, leading to smoke or fire.
- Ensure that the plug of the power cord is inserted properly into the outlet. A loose connection may cause contact failure, leading to malfunction of the unit or fire.
- The power cord should not be pulled tightly. Also, do not apply excessive force to the power cord or plug, or the power outlet. Note that if the power cord is disconnected during operation, data may be lost or the unit damaged.
- Do not use the power cord for other purposes, bend it excessively, cut or otherwise damage it, or place heavy objects on it. This may damage the power cord, causing fire or electric shock.
- If the power cord is damaged or plug becomes hot, do not use the power cord, as this may cause fire or electric shock. Contact your local maintenance service company for replacement of the damaged cord.

### Rack safety precautions

Note the following safety precautions when mounting the unit onto a rack.

- Operation in hot environment: The temperature in the rack area may exceed normal room temperature when this unit is operating in a closed rack or when several units are rack-mounted together. If the rack includes a front door and/or back door, make sure the doors do not impede the Autoloader's air circulation. Also, make sure that the rack's internal temperature does not exceed the recommended operating temperature range for mounted units.
- Check whether there is a large enough gap between the rack's door and the unit.
- Connect the Autoloader's power cord to a socket strip (table tap) or distribution board, and make sure the current capacity meets the minimum requirement for rack-mounted devices.
- Secure grounding: All rack-mounted devices must be securely grounded. Take further caution if the device is not directly connected to a distribution panel (such as when using a table tap). Since grounding of the Autoloader depends on the power cord's ground terminal, always check the grounding reliability of the table tap or distribution panel to be used.
## Maintenance precautions

Note the following safety precautions when performing maintenance tasks. Failure to follow these precautions may result in serious injury.

- Remove any electrically conductive objects being worn, such as a wristwatch or metal jewelry to help prevent electric shock.
- Be extra cautious when working near power connectors or power supply units to help prevent electric shock.
- Turn the power off before removing the field replacement unit (FRU) or other components.
- Ground all test devices and power supply tools.
- Read the "Cautions on Handling" before moving the Autoloader.
- To prevent fires and accidents, keep the immediate area around the unit clear.

## Cautions on Lifting

Back pain can be caused by lifting any object, whether it is light or heavy. The risk of back pain can be reduced by following these guidelines.

- Do not twist your torso when lifting or lowering an object. Such twisting can cause severe back pain when lifting and/or carrying an object. Instead, divide the lifting and carrying into two steps, without twisting: first lift, and then use your legs to change direction for carrying.
- Think before lifting: Look at the object and consider how to lift it and where to set it.
- Use a suitable lifting method. Consider the object’s weight, size, position, how often it will be lifted, and the direction of lifting. Avoid strenuous postures, and determine whether any kind of support device might be necessary.
- Spread your feet to shoulder width, and put one foot a bit behind the other. Keep your back straight. Leaning forward places pressure on the back, even when lifting light objects.
- Always grasp the unit with both hands if possible.
- Lift the unit to elbow height, and hold it close to your chest while carrying it. Holding it away from chest will place pressure on your back.
- Lift using your legs, not your back. Your strongest muscles are in your legs. Therefore, the safest way to lift even heavy objects is with your legs, starting from a squatting position.
- When doing a lot of lifting, reduce the amount of pressure being applied to the same set of muscles. This will give those muscles more time to recover.

## Safety precautions for shoulders, elbows, wrists, and hands

Follow these guidelines to minimize the risk of injury to your shoulders, elbows, wrists, and hands.

- Try to keep your motions within the safest range, between shoulder height and elbow height. Carrying or lifting objects in this range will minimize risk of injury.
- The amount of strength required for lifting can be reduced by keeping elbows bent and the lifted object close to your chest. Lifting this way reduces the load and the pressure on the shoulders.
- Keep your wrists straight. Do not bend and/or twist your wrists for a long time.
- Do not use a "pinch grip" (gripping an object between the thumb and index finger) when lifting or carrying large, heavy objects. Lifting in this way requires a lot of gripping strength. After lifting objects with one hand for a while, use the other hand so that the first hand can rest.
- Note with caution that the metal frame has sharp corners.
### Cautions on installing the unit

Observe the following cautions when installing the unit.

- Do not install the unit in a location where it can come into direct contact with the outside air, which may include rain, mist, corrosive gases, or salt content. Doing so may cause electric shock, smoke, fire or damage to the unit.
- Do not install the unit in a location where there are flammable gases or combustible substances, as this may cause fire or explosion.
- Do not install the unit in a dusty or extremely humid location, or a location where water is handled, as this may cause smoke, fire, electric shock or damage to the unit.
- Do not install the unit in a location where the unit or power cord will come into direct contact with sunlight or where there is a thermal appliance or other devices that generate heat in the vicinity. Doing so may cause the protective coating on the power cord to melt, leading to fire or electric shock, possibly damaging the unit.
- Install the unit so that the air vent is not obstructed. Obstructing the air vent may cause internal overheating, resulting in smoke or damage to the unit.
- Do not install the unit in an unstable location, or a location subject to excessive vibration or shock. This may lead to the unit falling over and being damaged.
- To avoid electric shock or damage to the internal components, be sure to insert and remove the power cord plug after turning off the unit’s power supply.
- Do not use other than the specified cables. Unspecified cables may have characteristics that differ from the requirements, destabilizing the unit’s operation and possibly leading to electrical interference and other problems.

### Handling during thunderstorm

In a thunderstorm when a lightning strike is imminent, do not touch the unit, including its cables, as this may cause electric shock.

### Handling when moving or relocating the unit

Contact your local maintenance service company before moving or relocating the unit.

### Cautions when loading heavy objects on top of unit

Avoid stacking the units, and do not place any other heavy objects on top of them. Stacking these units or placing heavy objects on them may result in product damage.

### Disposing of the unit

This unit contains devices that require caution when handled, such as a lithium battery and LCD. It is therefore recommended to contact your local maintenance service company before disposing of this unit.

Customers who wish to dispose of the unit themselves must observe all relevant local bylaws on product disposal. Check with your local authorities for details.

Also, follow the regulations set by your local authorities when disposing of packaging materials and optional components (such as cables).

### Cautions on product shipment

Set the accessor to (MOVE TO SHIP POSITION) before shipping this product. If this is not set, the product may be damaged during shipment.
Warning Labels

The following warning labels have been attached to this unit. Customers and maintenance service personnel are urged to keep these warnings in the forefront of their minds when operating this unit. (Do not remove or soil these labels.)

If any of these labels are missing, removed, soiled, or otherwise unreadable, contact your local maintenance service company.

<table>
<thead>
<tr>
<th>Warning Label</th>
<th>Affixing Position</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="CAUTION:" /></td>
<td>Affixing position: Rear of product</td>
</tr>
</tbody>
</table>

- CAUTION:
  - No user serviceable parts inside. For servicing see user's manual.
  - Appareil non réparable par l'utilisateur. Pour l'entretien, consulter le manuel d'utilisation.
  - Apparatet skal anstå til jordet utgang.
  - Apparatet må tilkoples jordet stikkontakt.
  - Leita os litiño de sujiniadathakamet headlines
  - INPUT
    - 100-240 V~
    - 1.2-3.5 A
    - 50-60 Hz
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PREFACE

This guide describes how to handle (mainly on hardware) the NEC LL009F Tape Autoloader (hereinafter referred to as the LL009F Autoloader, Autoloader, or Loader). For backup software commands and console messages, refer to the manual accompanying your backup software.

This guide is mainly intended for operators who handles the Autoloader, and also provides useful information for system programmers and computer system administrators. We hope this guide will be of help to your daily business.

Remarks

(1) Registered trademarks and trademarks

- Liner Tape-Open, LTO, and Ultrium are registered trademarks of Hewlett-Packard Company, IBM Corporation and Quantum Corporation.
- IBM is a registered trademark of IBM Corporation.
- HP is a registered trademark of Hewlett-Packard Company in the United States.
- Windows are registered trademarks of Microsoft Corporation in the United States or certain other countries.
- Java and all the trademarks and logos related to Java are trademarks or registered trademarks of Oracle Corporation in the U.S. and other countries.

TM and ® are omitted in this document.

(2) No part of this manual may be distributed without permission of NEC.

(3) The information in this manual is subject to change without notice.

(4) No part of this manual may be reproduced in any form without prior written consent from NEC.

(5) Though the contents of this manual are thoroughly prepared, please contact the dealer you purchased if any question, mistakes or omissions are found.
Disclaimer

(1) NEC shall not be held liable for the damages caused by the operations that do not conform to the description of this manual.
(2) NEC shall not guarantee the data stored in the storage unit (data tape: hereinafter referred to as tape) regardless of failures or obstacle.
(3) NEC shall not be held liable for the damages caused by an earthquake, fire for which NEC is not responsible, improper act of a third party, other accidents, intentional or negligent act of a user, misuse, or operations under the abnormal conditions.
(4) NEC shall not be held liable for incidental damages, such as loss of business interests and termination of business that are caused by use of this product or unserviceable state of this product.
(5) NEC shall not be held liable for damages caused by the operations that do not conform to the description of this manual.
(6) NEC shall not be held liable for damages caused by improper operation when used in combination with connection devices or software with which NEC is not engaged.

Restriction on use

(1) This product has not been developed or produced in order to use as a system including live-support units. Do not use this product for these purposes.
(2) Special attention is required for system operation, maintenance, and management in order to use this unit for systems including units that are involved with human safety and significantly affect on the maintenance of the public functionality. Before using this unit for this purpose, please contact your sales representative.
Notice

CAUTION

Risk of product damage: The cables connected to the Autoloader must be shielded and grounded. Do not use non-specified cables. If this product is operated using unshielded or non-grounded cables, it may interfere with radio and/or television reception.

Any modifications or alterations of this product that are made without express authorization will void the warranty. Such modifications or alterations may also cause radio interference.

Read the following acceptance statements and warnings before using this product.

FCC acceptance statement
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

ICES acceptance statement
Industry Canada Class A Emission Compliance Statement/Avis de conformité à la réglementation d’Industrie Canada:
CAN ICES-3(A) / NMB-3(A)
Japanese acceptance statement

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることはあります。

JIS C 61000-3-2 適合品
本装置は、高調波電流規格 JIS C 61000-3-2 に適合しています

Description of symbols

WEEE

Disposing of your used NEC product

In the European Union

EU-wide legislation as implemented in each Member State requires that used electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes tape library or electrical components, such as tape drive, AC power supply.

When you dispose of such products, please follow the guidance of your local authority or ask the shop where you purchased the product, or if applicable, follow applicable legislation or agreement you may have. The mark on electrical and electronic products may only apply to the current European Union Member States.

Outside the European Union

If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority and ask for the correct method of disposal.

Other

Under the EN ISO 7779 standard, the maximum noise level is 70 decibels.

RoHS Compliance

This product complies with the EU's "Restriction of the use of certain hazardous substances in electrical and electronic equipment" (RoHS).

Türkiye Cumhuriyeti:EEE Yönetmeliğine Uygundur

Complying with “CIRCULAR, No.30/2011/TT-BCT(Hanoi, August 10 2011), Temporary regulations on content limit for certain hazardous substances in electrical products”
Chapter 1  General Information

This chapter describes the main hardware components and the loader specifications.

The LL009F Tape Autoloader is an auto cartridge management system that includes an LTO Ultrium drive. The Autoloader can hold up to nine cartridges.

1.1 Names and Functions of Components

The locations of the Autoloader's various components are described below.

1.1.1 Front of Autoloader

Figure 1-1  Components on Front of Autoloader

<1> Magazine

<2> Operation panel
1.1.2 Rear of Autoloader

Figure 1-2 Components on Rear of Autoloader

<1> Power switch
<2> Power outlet
<3> SAS connector
<4> Exhaust aperture
<5> Ethernet access point
<6> Fastening screw for shipping
1.2 Magazine Slots
The magazine includes five columns, and two cartridges can be inserted depth wise in each column. In total, nine cartridges can be inserted into the magazine. The first slot holds the cartridge that is used as the exchange cartridge.

Caution:
When loading cartridges into the magazine, do not insert a cartridge into the exchange slot.

The slots are numbered 1 to 9, starting from the rear (farthest) slot. When one cartridge is inserted in each column, the front (closest) slot is an odd-numbered number. When another cartridge is inserted into the same column, the previously inserted cartridges are moved toward the rear, and the rear (farthest) slot becomes an odd-numbered slot, while the slot holding the cartridge inserted in front becomes an even-numbered slot. Note that slot number 9 is fixed, because of the exchange slot in the rear.

Figure 1-3 Magazine Slot Numbers (1)

1) When one cartridge is stored in each column:

Figure 1-4 Magazine Slot Numbers (2)

2) When cartridges are inserted in all slots:
1.2.1 Data slots
These slots are used to store data cartridges. Magazine slots are assigned sequentially, starting from the number that has been set via the "Origin" setting in the operation panel. The number of data slots matches the number of user slots set via the operation panel.

1.2.2 I/O STATION slot
This slot is used to insert cartridges into the Autoloader and to remove them. The I/O STATION can be set via the operation panel. For details, see “4.4.1 UNLOCK I/O STATION menu”. When the I/O STATION has been set as active, magazine slot number 9 is assigned as the I/O STATION slot.

1.2.3 Exchange slot
This slot temporarily stores cartridges to be moved in the Autoloader.

Caution:
When loading cartridges into the magazine, do not insert a cartridge into the exchange slot.

1.2.4 Unused slots
These are slots other than those described above. When auto cleaning has been set, these slots are used as cleaning slots.

1.3 Safety Functions
Whenever the magazine is removed, an electronic interlock shuts off power to the Accessor.

1.4 Transfer or Disposal of Autoloader
When disposing of this product, along with its consumables, accessories, and packaging, follow the relevant local bylaws on product disposal. When transferring this product, transfer all of the parts and accessories, including this manual.
Chapter 2  Installation

This chapter describes steps and caution points for installing the Autoloader in a rack.

2.1  Attach the Rack Mount Kit

(1) Parts

The rack mount kit includes the following parts.

Figure 2-1 Configuration of Rack Mount Kit Parts

Table 2-1  Rack Mount Kit Configuration

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Name</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1&gt;</td>
<td>Rack mount rail L</td>
<td>1</td>
</tr>
<tr>
<td>&lt;2&gt;</td>
<td>Rack mount rail R</td>
<td>1</td>
</tr>
<tr>
<td>&lt;3&gt;</td>
<td>Rack mount bracket L</td>
<td>1</td>
</tr>
<tr>
<td>&lt;4&gt;</td>
<td>Rack mount bracket R</td>
<td>1</td>
</tr>
<tr>
<td>&lt;5&gt;</td>
<td>Cable fastening band</td>
<td>1</td>
</tr>
<tr>
<td>&lt;6&gt;</td>
<td>Screws (M4)</td>
<td>6</td>
</tr>
<tr>
<td>&lt;7&gt;</td>
<td>Flat head screws (M6)</td>
<td>8</td>
</tr>
</tbody>
</table>
(2) Caution points for rack mounting

Racks that hold the Autoloader must meet the requirements described in <1> to <4> below. Confirm this by referring to the figure below and by taking measurements.

<1> According to the EIA standard, the rack must have a 19-inch universal pitch.
<2> There must be air vents in the front and rear to enable adequate cooling of the device.
<3> The rack must have bars at the front and rear for attaching the device, as illustrated below.

Figure 2-2 Illustration of Rack Bars

Caution:
The rack mount kit cannot be installed if the holes in the rack bars are not at least 6.5 mm in diameter.
The rack's internal dimensions must meet the dimension requirements shown in Figures A to C below.

**Figure 2-3  Rack Dimensions**

<table>
<thead>
<tr>
<th>Site</th>
<th>Description</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Distance from front device mounting bracket to inner side of front door</td>
<td>25 mm or above</td>
</tr>
<tr>
<td>B</td>
<td>Gap between front and rear device mounting brackets</td>
<td>680 to 1050 mm</td>
</tr>
<tr>
<td>C</td>
<td>Distance from rear of device to inner side of rear door</td>
<td>30 mm or above</td>
</tr>
</tbody>
</table>
(3) Rack mount rail attachment position

Attach four flat head screws (M6) each to the front and back of the rack to attach the rack mount rails. (See Figure 2-4.)

Figure 2-4 Rack Mount Rail Attachment Positions
(4) Attachment of rack mount rails

Perform the following steps to attach the left and right rack mount rails. (See Figure 2-5.)

1) Use four flat head screws (M6) to attach the left rack mount rail to the front and rear of the rack.

2) Use four flat head screws (M6) to attach the right rack mount rail to the front and rear of the rack.

Figure 2-5 Attachment of Rack Mount Rails
(5) **Attachment of rack mount brackets**

Perform the following steps to attach the left and right rack mount brackets to the Autoloader. (See Figure 2-6.)

1) Attach the cable fastening band to the right rack mount bracket.

2) Attach the right rack mount bracket with the attached cable fastening band, and the left rack mount bracket to the rear of the Autoloader with the two screws (M4).

![Attachment of Rack Mount Brackets](image)
(6) **Installation of Autoloader**

Perform the following steps to install the Autoloader.

1) Set the Autoloader onto the rack mount rail at the front of the rack, and then slowly slide it toward the rear.

![Figure 2-7 Mounting of Autoloader onto Rack](image1.png)

2) Use a screwdriver to fasten screws (M6) into the holes on the left and right corners of the Autoloader's front side.

![Figure 2-8 Fastening of Autoloader's Front Side](image2.png)
3) Use two screws (M4) to attach the rack mount rail to the rack mount brackets that are attached to the left and right corners of the Autoloader's rear side.

Figure 2-9  Fastening of Autoloader's Rear Side
Chapter 3 Setup
This chapter describes the steps for Autoloader setup.

3.1 Removal of Shipment Stabilizer
The Autoloader has a screw that is fastened to its rear side to stabilize the internal Accessor during shipment.

Before using the Autoloader, be sure to unfasten this screw.

Caution:
Make sure that the shipment stabilizer screw has been unfastened.
If the power is turned on while the screw is still fastened, operation faults may occur.

If the error message "***CHK*** CODE:[0084]" is displayed, turn off the power and unfasten this shipment stabilizer screw before turning the power back on.
3.2 Connection of SAS Cable

An SAS cable is used to connect the Autoloader to a server or workstation. The SAS connector is on the rear side of the Autoloader.

After connecting the SAS cable, be sure to attach the terminating resistance connector that is provided with the unit. The Autoloader will not operate correctly unless this terminating resistance connector is attached.

For instructions on how to connect to the server or workstation, see the documents provided with the server or workstation.

Caution:

After connecting the cable, make sure it is connected securely.
The SAS cable's connector includes a locking mechanism.
Make sure it is set to the locked position.

3.3 Connection of AC Power Cable

After connecting the signal cable, make sure that the power switch is in the OFF position.

After confirming that the power is OFF, insert the AC power cable's plug into the Autoloader's AC power connector. Make sure that the plug is fully inserted.

Check that the AC power cable to be connected meets the following requirements before using it.

- Must be safety certified in the country where it will be used
- Maximum voltage must match or exceed the power supply voltage to be used.
- Rated current must be at least 7 A.
- Length must be no more than 3 m.
- Triplex, double-insulated (double sheathed)
3.4 Starting and Shutting Down the System
When starting the system, first start the Autoloader (and any peripheral devices connected to the server or workstation), then turn the server or workstation's power on to start the system.

Caution:
If a cartridge is loaded into the drive before the system is started, errors may occur when reading or writing data stored in the cartridge.

When shutting down the system, first turn off the power to the server or workstation, then the power to the Autoloader (and any peripheral devices connected to the server or workstation) to shut down the system.

Caution:
- When shutting down the system, use your backup application or check for messages on the LCD to make sure that no cartridges have been loaded into the cartridge drive. If the system is shut down while a cartridge is loaded in the cartridge drive, the next time the system is started errors may occur when reading or writing data stored in the cartridge, which can lead to malfunctions in the cartridge or the Autoloader.
- Do not shut down and restart the system while the Autoloader is operating. Make sure that the Autoloader has stopped before shutting down the system or restarting it.

3.5 Power on and Power-on Sequence
When the Autoloader’s power supply is turned on, a power-on sequence is executed automatically.

1) When the power switch on the rear side of the Autoloader is set to the up (↑) position, the power supply is on.
2) When the power supply is on, “ıt” (green LED) lights up, and the power-on test starts.
3) Once the power-on test is completed normally, a "READY" screen is displayed on the operation panel.

Caution:
After turning off the power, wait at least 10 seconds before turning it back on. If the power switch is set back on immediately after being turned off, the protection circuits may prevent the power supply from being activated.
3.6 Login

Login is required before removing the Autoloader's magazine, entering settings, or using the operation panel's functions.

1) Turn on the Autoloader, and check that [READY] is displayed.
2) When [READY] is displayed, press any button to bring up a menu such as the following.

```
Push ENTER Key to Login
```

3) Enter your password.

```
Input Password
0***
```

The password to be entered must be a four-digit number (using numerals 0 to 9).

When reset, the password becomes “0000”.

If the entered password does not match the one stored in the Autoloader, the screen shown in 2) above is again displayed. Re-enter the password.

There is no limit to the number of times an incorrect password is re-entered.

4) When the correct password is entered, the following menu is displayed and the Autoloader can be operated.

```
UNLOCK
MAGAZINE
↓
```
Chapter 4  Operation Methods
This chapter describes how to use the operation panel and how to enter settings for the Autoloader and the cartridge drive.
Settings can be entered for the Accessor and the drive only after the Autoloader has been reset.

4.1 Operation panel
The operation panel is located on the right side of the Autoloader's front panel.
The following figures and sections describe the various components on the Autoloader's operation panel.
4.1.1 LCD Screen

Table 4-1 LCD Screen

| <1> | LCD screen | This screen displays menus and messages during various operations. Up to two lines of 15 characters each can be displayed. |

4.1.2 LED

The following four LEDs are included in the operation panel.

Table 4-2 Operation Panel LEDs

| <2> | Power on indicator | This green LED is on when power is being supplied to the Autoloader. |
| <3> | Drive cleaning indicator | This orange LED is on when drive cleaning is required and when the cleaning cartridge needs to be replaced. |
| <4> | Cartridge error indicator | This orange LED is on when a cartridge error has been detected. |
| <5> | Device error indicator | This orange LED lights: Drive or Accessor error has been detected and when a diagnostic fault has occurred. Always check for messages displayed on the operation panel screen. Blinking (0.8sec on, 0.8sec off): Drive or Accessor warning has been detected. Always check for messages displayed on the operation panel screen. However, depending on a state, it may be displayed as "NO SENSE". Blinking (2.7sec on, 0.5sec off): The Autoloader is in offline state. |

4.1.3 Buttons

The operation panel includes the following four buttons.

Table 4-3 Operation Panel Buttons

| <6> | Up arrow/Number select button | This button is used to move the cursor up in a menu, and to select numerical values. |
| <7> | Down arrow/Number select button | This button is used to move the cursor down in a menu, and to select numerical values. |
| <8> | Cancel button | When this button is pressed, it is used to change menus or to cancel number selection. It is also used to return from a submenu to the previous (higher-level) menu. |
| <9> | Menu select/set button | When this button is pressed, the item displayed on the menu screen is selected. It is also used to set a numerical value or character string that has been selected. |
4.2 Panel Display

The following describes what is displayed on the menu screens.

4.2.1 Menu screens

Menu screens appear when the Autoloader is operated or set.
The following is displayed on these screens.

(1) Scroll bar
A scroll bar appears when the current menu items cannot all be displayed in one screen.

![Scroll bar example]

(1) Selection mark
This mark (*) indicates the currently selected menu item.

![Selection mark example]
### 4.2.2 Display information

Text indicating the Autoloader’s status is also displayed in the operation panel.

<table>
<thead>
<tr>
<th>Panel display</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INITIALIZING...</td>
<td>Initialization is in progress.</td>
</tr>
<tr>
<td>INVENTORY...</td>
<td>Inventory is in progress.</td>
</tr>
<tr>
<td>PLEASE INSERT MAGAZINE</td>
<td>Magazine insertion is requested.</td>
</tr>
<tr>
<td>MAGAZINE UNLOCKED</td>
<td>Magazine is not locked.</td>
</tr>
<tr>
<td>I/O STATION UNLOCKED</td>
<td>I/O STATION is not locked.</td>
</tr>
<tr>
<td>PLEASE CLOSE I/O STATION</td>
<td>Close the I/O STATION.</td>
</tr>
<tr>
<td>LOADER FIRMWARE UPDATING!</td>
<td>Autoloader firmware update is in progress.</td>
</tr>
<tr>
<td>DRIVE FIRMWARE UPDATING!</td>
<td>Drive firmware update is in progress.</td>
</tr>
<tr>
<td>DRIVE DUMP DATA UPLOADING!</td>
<td>Dump data is being uploaded from drive.</td>
</tr>
<tr>
<td>READY</td>
<td>READY mode</td>
</tr>
<tr>
<td>*** CHK *** CODE:[xxxx]</td>
<td>Loader error status (xxxx is the CHK code)</td>
</tr>
<tr>
<td>DRIVE FAULT CODE:[x]</td>
<td>Drive error status (x is the drive error code)</td>
</tr>
<tr>
<td>MEDIA FAULT</td>
<td>Cartridge error status</td>
</tr>
<tr>
<td>SETTING...</td>
<td>Setting in progress</td>
</tr>
<tr>
<td>EXCHANGE SLOT FULL</td>
<td>A cartridge is stored in the exchange slot.</td>
</tr>
<tr>
<td>ENDURANCE COUNT OVER</td>
<td>The number of Accessor mechanism operations has reached the expected life (endurance) value</td>
</tr>
<tr>
<td>CARTRIDGE WRONG INSERTION</td>
<td>A cartridge has been incorrectly inserted in the drive.</td>
</tr>
<tr>
<td>OFFLINE</td>
<td>Autoloader is off-line.</td>
</tr>
<tr>
<td>REPLACE CLEANING MEDIA</td>
<td>Replacement of cleaning cartridge</td>
</tr>
<tr>
<td>CLEAN DRIVE</td>
<td>Drive cleaning is requested</td>
</tr>
<tr>
<td>CLEANING...</td>
<td>Cleaning is in progress</td>
</tr>
<tr>
<td>Please turn off the power.</td>
<td>Turn off the Autoloader</td>
</tr>
</tbody>
</table>
4.3 Menu Tree

The following illustrates the tree configuration of menus displayed on the panel screen.

Figure 4-2  Autoloader's Menu Tree

*1 Displayed when I/O STATION is active.
COMMANDS

01

- MOVE CARTRIDGE
- UNLOAD
- CLEAN DRIVE
- INVENTORY
- MOVE TO SHIP POSITION
- REBOOT DRIVE
- REBOOT LIBRARY
- CHANGE LIBRARY STATE
- WARNING OFF
* 2 Caution: Do not press SET DEFAULT. (This will reset the Autoloader to its factory settings.)
4.4 Main Menu

4.4.1 UNLOCK I/O STATION menu

This unlocks the I/O STATION's lock.
It enables a cartridge to be loaded into or removed from the Autoloader.

4.4.2 UNLOCK MAGAZINE menu

This unlocks the magazine's lock.
This menu is used when removing a magazine from the Autoloader.

4.4.3 COMMANDS menu

These submenus are used when moving cartridges stored in the Autoloader, and when using the operation panel to perform drive cleaning.

Table 4-5 Submenus of COMMANDS Menu

<table>
<thead>
<tr>
<th>Submenu</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOVE CARTRIDGE</td>
<td></td>
<td>This submenu can be used to move a cartridge stored in one of the Autoloader's slots to another slot. Set the current slot type and number and the destination slot type and number.</td>
</tr>
<tr>
<td>UNLOAD</td>
<td></td>
<td>This submenu can be used to unload the cartridge that has been loaded into the drive.</td>
</tr>
<tr>
<td>CLEAN DRIVE</td>
<td></td>
<td>This submenu can be used to clean the drive. When cleaning, the cleaning cartridge must already be stored in the Autoloader. For details, see “7.1.2 Use of operation panel to set cleaning.”</td>
</tr>
<tr>
<td>INVENTORY</td>
<td></td>
<td>This executes an inventory of cartridges.</td>
</tr>
<tr>
<td>MOVE TO SHIP POSITION</td>
<td></td>
<td>Before shipping the Autoloader, use this submenu to set the Accessor to ship position. Caution: Always execute this command before shipping the Autoloader. Executing this command unlocks the magazine so that all of the cartridges can be removed. After removing them, re-insert the empty magazine and turn off the Autoloader's power. After executing this command, be sure to fasten the Accessor using the stabilizer screw.</td>
</tr>
<tr>
<td>REBOOT DRIVE</td>
<td></td>
<td>This reboots the drive. For details, see “4.8 Rebooting the Autoloader.”</td>
</tr>
<tr>
<td>REBOOT LIBRARY</td>
<td></td>
<td>This reboots the Autoloader.</td>
</tr>
<tr>
<td>CHANGE LIBRARY STATE</td>
<td>ONLINE</td>
<td>This submenu can be used to switch the Autoloader’s library status between online and offline. For description of these settings, see “4.5.2 Switching between ONLINE and OFFLINE”.</td>
</tr>
<tr>
<td>WARNING OFF</td>
<td></td>
<td>When the LED is blinking (warning state), it can be turned off. However if a mechanical part has reached it's endurance threshold, this warning cannot be turn off. Replace the Autoloader.</td>
</tr>
</tbody>
</table>
4.4.4 CONFIGURATION menu

This menu is used to enter settings for the Autoloader and the drive.

Table 4-6 CONFIGURATION Submenus

<table>
<thead>
<tr>
<th>Submenu</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONFIGURE LIBRARY</td>
<td>This submenu can be used to enter various Autoloader settings.</td>
</tr>
<tr>
<td>CONFIGURE AUTO CLEANING</td>
<td>This submenu can be used to enter auto cleaning settings.</td>
</tr>
<tr>
<td>CONFIGURE NETWORK SETTING</td>
<td>This submenu can be used to enter various network-related settings.</td>
</tr>
<tr>
<td>CONFIGURE OP PANEL SETTING</td>
<td>This submenu can be used to enter various settings on the operation panel.</td>
</tr>
<tr>
<td>VIEW SETTINGS</td>
<td>This submenu can be used to check Autoloader settings.</td>
</tr>
<tr>
<td>SET DEFAULT</td>
<td>This submenu can be used to reset Autoloader settings to their factory presets. Do not use this submenu unless initializing the Autoloader's settings.</td>
</tr>
</tbody>
</table>
### Table 4-7  CONFIGURE LIBRARY Submenus

<table>
<thead>
<tr>
<th>Submenu</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONFIGURE SAS LINK SPEED</td>
<td>3GBIT/SEC</td>
<td>This submenu can be used to switch SAS I/F Link Speed.</td>
</tr>
</tbody>
</table>
| SET ACTIVE SLOTS COUNT   | 9 ACTIVE + 0 I/O | Sets the number of data slots and the active/inactive setting for the I/O STATION.  
|                           |                | The following settings can be selected.                                  |
|                           |                | 9 ACTIVE + 0 I/O: DATA SLOT 9, I/O STATION inactive                        |
|                           |                | 8 ACTIVE + 1 I/O: DATA SLOT 8, I/O STATION active                         |
|                           |                | 8 ACTIVE + 0 I/O: DATA SLOT 8, I/O STATION inactive                        |
|                           |                | 6 ACTIVE + 1 I/O: DATA SLOT 6, I/O STATION active                         |
|                           |                | 6 ACTIVE + 0 I/O: DATA SLOT 6, I/O STATION inactive                        |
|                           |                | 4 ACTIVE + 1 I/O: DATA SLOT 4, I/O STATION active                         |
|                           |                | 4 ACTIVE + 0 I/O: DATA SLOT 4, I/O STATION inactive                        |
| CONFIGURE LIBRARY MODE   | SET RANDOM MODE | This submenu can be used to switch between random and sequential mode.     |
|                           |                | Sequential mode should be set when used in environments in which the Accessor cannot be controlled.   |
|                           |                | - SET RANDOM MODE                                                         |
|                           |                | Random mode should be set when using backup software.                     |
|                           |                | - CONFIGURE SEQUENTIAL MODE                                               |
|                           |                | - LOOP mode                                                               |
|                           |                | Operation does not stop after the cartridge has been unloaded by the host from the last slot. |
|                           |                | Instead, the first slot's cartridge is loaded, and then operation continues.|
|                           |                | - AUTO LOAD mode                                                          |
|                           |                | When the magazine is set to the Autoloader, the cartridge is automatically mounted in the drive. |
| CONFIGURE DRIVE POWER SAVE MODE | ENABLE | This submenu can be used for setting up effective and the invalidity of the energy-saving function of a drive. When effective, the time to energy-saving mode shift can be set up. |
| CONFIGURE DATE/TIME      | --            | - SET DATE                                                                |
|                           |                | This sets the date. (Format: YYYY/MM/DD)                                  |
|                           |                | - SET TIME                                                                |
|                           |                | This sets the time. (Format: HH/MM/SS)                                   |
(2) CONFIGURE AUTO CLEANING menu

Table 4-8 CONFIGURE AUTO CLEANING Submenus

<table>
<thead>
<tr>
<th>Submenu</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENABLE AUTO CLEANING</td>
<td>This enables auto cleaning. For auto cleaning to be executed, an unused slot must be set in advance.</td>
</tr>
<tr>
<td>DISABLE AUTO CLEANING</td>
<td>This disables auto cleaning.</td>
</tr>
</tbody>
</table>

AUTO CLEANING function

Caution:
Always check whether the backup software supports the AUTO CLEANING function.
If the backup software does not support the AUTO CLEANING function, set the AUTO CLEANING as disabled. Problems may occur if it set as enabled.

(3) CONFIGURE NETWORK SETTINGS menu

Table 4-9 CONFIGURE NETWORK SETTINGS Submenus

<table>
<thead>
<tr>
<th>Submenu</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONFIGURE LINK SPEED</td>
<td>AUTO</td>
<td>This sets the network's communications mode. To use the auto setting, select &quot;AUTO&quot;.</td>
</tr>
<tr>
<td>CONFIGURE DHCP</td>
<td>OFF</td>
<td>This submenu can be used to configure the DHCP server.</td>
</tr>
<tr>
<td>CHANGE IP ADDRESS</td>
<td>192.168.001.001</td>
<td>This sets the IP address for access via a network.</td>
</tr>
<tr>
<td>CHANGE SUBNET MASK</td>
<td>255.255.255.000</td>
<td>This enables the Autoloader to be accessed from a subnet.</td>
</tr>
<tr>
<td>CHANGE GATEWAY</td>
<td>192.168.001.254</td>
<td>This indicates a gateway connection between subnets.</td>
</tr>
</tbody>
</table>

(4) CONFIGURE OP PANEL SETTINGS menu

Table 4-10 CONFIGURE OP PANEL SETTINGS Submenus

<table>
<thead>
<tr>
<th>Submenu</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONFIGURE LCD BACK LIGHT</td>
<td>ENABLE AUTO BACK LIGHT</td>
<td>This sets the panel's contrast. This sets the time until the LCD back light is automatically shut off.</td>
</tr>
<tr>
<td>CHANGE LOGIN PASSWORD</td>
<td>0000</td>
<td>This submenu can be used to change the login password.</td>
</tr>
</tbody>
</table>
(5) **VIEW SETTINGS menu**

This menu is used to check various Autoloader settings.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAS LINK SPEED</td>
<td>SAS LINK SPEED</td>
</tr>
<tr>
<td>SYSTEM</td>
<td>I/O STATION / AUTO CLEANING / BACK LIGHT</td>
</tr>
<tr>
<td>NETWORK</td>
<td>LINK SPEED</td>
</tr>
<tr>
<td></td>
<td>USER PROTOCOL</td>
</tr>
<tr>
<td></td>
<td>-IPv4 : IP ADDRESS / SUBNET MASK / GATEWAY / DHCP</td>
</tr>
<tr>
<td></td>
<td>-IPv6 : IP ADDRESS / GATEWAY / PREFIX LNGH / DHCP / STATIC</td>
</tr>
<tr>
<td>DRIVE</td>
<td>MODEL</td>
</tr>
</tbody>
</table>

(6) **SET DEFAULT menu**

This menu can be used to reset the Autoloader's settings to its factory presets.

4.4.5 **VIEW CURRENT INFORMATION menu**

This menu is used to check the WWNN, IP address, and information on cartridges stored in the Autoloader.

<table>
<thead>
<tr>
<th>Submenu</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SETTING INFORMATION</td>
<td>This submenu can be used to check the WWNN and IP address.</td>
</tr>
<tr>
<td>SLOT INFORMATION</td>
<td>This submenu can be used to check information on specific slots (cartridge in/out).</td>
</tr>
</tbody>
</table>

4.4.6 **SERVICE menu**

This menu is used to check or test errors in the Autoloader or drive.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
</table>
| VIEW ERROR STATUS           | ・VIEW LIBRARY ERROR STATUS  
                              |   This checks the errors in Autoloader.  
                              | ・VIEW DRIVE ERROR STATUS  
                              |   This checks the errors in the drive.  |
| DIAGNOSTICS                | This diagnoses Autoloader.  
                              | At least one data cartridge is needed to diagnose Autoloader.              |
| VIEW Firmware Revision     | This checks the firmware revision information.                               |
| TELNET Service Port        | This enables and disables the TELNET service port.                           |

4.4.7 **LOGOUT menu**

This returns to the Login menu.
4.5 Autoloader Settings

4.5.1 Change password

The following describes how to change the password used during login.

1) Log in.
2) Select [CONFIGURATION].
3) Select [CONFIGURE OP PANEL SETTINGS] from [CONFIGURATION].
4) Select [CHANGE LOGIN PASSWORD] from [CONFIGURE OP PANEL SETTINGS].

5) The following password input menu will appear.
   Enter a new four-digit password.

6) Next, retype the password that you entered at step 5).

7) If the password entered in step 5) and 6) match, the following message will appear.
   Once the above message is displayed, the new password is valid.

   If the entered passwords do not match, the following message will appear.
   If the above message is displayed, start again from step 4).
Caution:
If no action is taken for 10 seconds while the above message is displayed, the screen automatically returns to step 4).
It is recommended that you set a new password again.
4.5.2 Switching between ONLINE and OFFLINE

The Autoloader usually starts in online mode. When operating the Autoloader by itself, switch to offline mode.

The following describes how to switch from online to offline mode.

1) Log in.
2) Select [COMMANDS].
3) Select [CHANGE LIBRARY STATE] from [COMMANDS].
4) Select [SET LIBRARY OFFLINE] from [CHANGE LIBRARY STATE].

```
SET LIBRARY ↑
OFFLINE
```

5) Once this is selected, the following two messages will appear in alternation.

Press the button.

```
Set Library
Offline
```
```
Are you sure ?
Y:Enter N:Cancel
```

6) When this completed normally, the screen returns to step 4).

Similar steps are used to switch from offline to online mode.
4.5.3 Changing the number of user slots

The Autoloader settings can be used to logically change the number of slots. This setting method is described below.

<table>
<thead>
<tr>
<th>Data slots</th>
<th>I/O Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of cartridges</td>
<td>Valid slot numbers</td>
</tr>
<tr>
<td>9 ACTIVE + 0 I/O</td>
<td>9</td>
</tr>
<tr>
<td>8 ACTIVE + 1 I/O</td>
<td>8</td>
</tr>
<tr>
<td>8 ACTIVE + 0 I/O</td>
<td>8</td>
</tr>
<tr>
<td>6 ACTIVE + 1 I/O</td>
<td>6</td>
</tr>
<tr>
<td>6 ACTIVE + 0 I/O</td>
<td>6</td>
</tr>
<tr>
<td>4 ACTIVE + 1 I/O</td>
<td>4</td>
</tr>
<tr>
<td>4 ACTIVE + 0 I/O</td>
<td>4</td>
</tr>
</tbody>
</table>

The following describes the setting for six cartridges in the Autoloader's data slot, with one valid I/O Station.
1) Log in.
2) Select [CONFIGURATION].
3) Select [CONFIGURE LIBRARY] from [CONFIGURATION].
4) Select [SET ACTIVE SLOTS COUNT] from [CONFIGURE LIBRARY].
5) Select the number of slots.

6) Once this is selected, the following confirmation screen will appear.

7) When this is completed, the screen returns to step 4).
4.6 Magazine Operations

4.6.1 Using the operation panel to remove the magazine

Caution:
Do not insert your fingers into the Autoloader.
This may cause electric shock or abnormal operation.

The following describes the steps for removing the magazine from the Autoloader.
1) Log in.
2) Select [UNLOCK MAGAZINE].

3) Once this is selected, the following two messages will appear in alternation.
Press the button.

4) Once the following message appears, remove the magazine.
Caution:
To minimize the risk of dropping the magazine, check the "countdown" number on the attached label before removing the magazine.

Caution:
Hold the magazine with both hands to prevent from dropping it.
4.6.2 Insertion of cartridges into magazine

When inserting cartridges into the slots of the magazine, note the direction of each cartridge. If a cartridge is inserted in the wrong direction, malfunctions may occur. Refer to the photo below before inserting.

For description of magazine slot numbers, see “1.2 Magazine Slots”.

Caution:
Insert the cartridges correctly. If a cartridge is inserted in the wrong direction or it is not fully inserted into the slot, the Autoloader may not start, an error message may be displayed, and the Accessor or cartridge may be damaged.

4.6.3 Removal of cartridges from magazine

To remove a cartridge, slide the locking mechanism to the left located next to the slot's opening.
4.6.4 Emergency removal of magazine

Caution:
This removal method should be used only during an emergency.

The steps for removing the magazine from the Autoloader are described below.

1) Insert a pointed object (such as a small Philips screwdriver) into the round hole shown above.
2) Keep the object inserted while pulling out the magazine.
   The pointed object should be at least 2 cm long.
4.7 Using the operation panel to move cartridges

4.7.1 Load cartridge into drive

The following describes how to use the operation panel to move a cartridge from a specified magazine slot into the drive.

In this example, the cartridge in slot 5 will be loaded into the drive.

1) Log in.

2) Select [MOVE CARTRIDGE] from [COMMANDS].

   Once [MOVE CARTRIDGE] is selected, the SOURCE slot setting screen will appear.
   Move the cursor to select “SLOT5”.

3) Move the cursor to select DESTINATION and set it as the drive.

4) Once this is selected, the following two messages will appear in alternation.

   Press the button.

5) The cartridge now moves to the drive. Once this is completed, the screen returns to step 4).
4.7.2 Unloading from the drive

Caution:
This operation should be performed only during emergencies, such as when the operation cannot be controlled from a host device.

The following describes the steps for unloading a cartridge from the drive.

1) Log in.
2) If the Autoloader is in online mode, switch it to offline mode. For details, see “4.5.2 Switching between ONLINE and OFFLINE.”
3) Select [UNLOAD] from [COMMANDS] to unload the cartridge from the drive.
   When it is unloaded, the cartridge will move to the front of the drive.
4) Select [MOVE CARTRIDGE] to move the cartridge to the front of the drive.
   Once MOVE CARTRIDGE is selected, the SOURCE slot setting screen will appear. Select the SOURCE slot.

```
SOURCE:
DRIVE:02C456L3 ↓
```

5) Set the DESTINATION slot.
```
DESTINATION:
SLOT5
```

6) Once this is selected, the following two messages will appear in alternation.
   Press the button.
```
Move to SLOT5
Are you sure ? Y:Enter N:Cancel
```

To unload the cartridge from the slot, select [UNLOCK MAGAZINE].
4.8 Rebooting the Autoloader

The drive and Autoloader can be rebooted using the following menus.

Caution:
If a reset is executed without first executing the following steps, the device and/or cartridge may be damaged, and data may be lost.

A reboot (initialization) is required in the following cases.
- When a system administrator or maintenance engineer has ordered a reboot of the Autoloader
- When errors have occurred in the Accessor and/or drive.

The following describes the steps for rebooting the drive. Similar steps can be performed to reboot the Autoloader as well.

1) Make sure that all jobs have been completed.
2) Log in.
3) Select [COMMANDS].
4) Select [REBOOT DRIVE] from [COMMANDS].
5) Once this is selected, the following two messages will appear in alternation. Press the button.

   Execute
   Reboot Drive

   Are you sure ?
   Y:Enter N:Cancel

6) You will be asked to set the Autoloader's mode after rebooting to online or offline mode. Select online to set online mode, or select offline to set offline mode.
Chapter 5  Remote Manager Interface (LTO4/5/6)

This chapter describes how to use the Autoloader's Ethernet functions ((Remote Manager interface), SNMP Agent, and email notification).

5.1 Connection Configuration

The following configuration is required when using Ethernet functions.

(1) General

10BASE-T or 100BASE-TX LAN (full duplex or half duplex is OK, Gateway is accessible)

(2) Remote Manager interface

Web browser: Internet Explorer 9 (IE 9) or later version is recommended

Java: Java Plug-in 1.8.0 or later version is required (LTO4/5/6)

Check whether Java Plug-in has already been installed and, if so, note its version. If a Java Plug-in in the above-noted version or a later version has not been installed, go to one of the following websites to download and install it.

http://www.java.com/ or http://java.sun.com/

*Java Plug-in is unnecessary by LTO7 model.

(3) SNMP function

SNMP Manager: WebSAM Netvisor or OpenView NetworkNodeManager is recommended

Trap reception and MIB extraction by an MIB browser are enabled.

Various settings are required to enable monitoring. (See the relevant software manual for description of these settings.)

*SNMP: Simple Network Management Protocol

(4) Email notification

Mail server does not require SMTP authentication (mail servers that do require SMTP authentication are not supported)

*SMTP : Simple Mail Transfer Protocol
5.2 Connection Settings

When using the Autoloader's Ethernet function, the following items must be set appropriately. These items can be set and checked via the operation panel. For description of how to change these settings, see “4.4.4(3) CONFIGURE NETWORK SETTINGS menu”. Consult with a network manager concerning the settings for these items.

<table>
<thead>
<tr>
<th>Item</th>
<th>Default value</th>
<th>Description of setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP ADDRESS</td>
<td>192.168.1.1</td>
<td>Autoloader device's IP address. When using an Ethernet function, the appropriate IP address must be set. This can also be set automatically by DHCP.</td>
</tr>
<tr>
<td>IP SUBNET MASK</td>
<td>255.255.255.0</td>
<td>Network's subnet mask. When using an Ethernet function, the appropriate subnet mask must be set. This can also be set automatically by DHCP.</td>
</tr>
<tr>
<td>IP GATEWAY</td>
<td>0.0.0.0</td>
<td>The gateway is specified for access from a different subnet mask. This setting is not necessary when access is always within the same network. This can also be set automatically by DHCP.</td>
</tr>
<tr>
<td>DHCP</td>
<td>OFF</td>
<td>This sets whether or not DHCP will be used to dynamically assign IP addresses, etc. Set this to ON to have DHCP dynamically assign IP addresses, etc. Set it to off when a fixed IP address is used. The IP addresses that are assigned by DHCP, can be checked by selecting [CONFIGURATION] - [VIEW SETTINGS] on the operation panel.</td>
</tr>
<tr>
<td>LINK SPEED</td>
<td>AUTO</td>
<td>This sets the network's communication mode. &quot;AUTO&quot; is normally selected. During manual setup, &quot;10 BASE-T FULL&quot;, &quot;10 BASE-T HALF&quot;, &quot;100 BASE-T FULL&quot;, or &quot;100 BASE-T HALF&quot; can be selected.</td>
</tr>
</tbody>
</table>
5.3 Startup of Remote Manager Interface

Open a Web browser from any network-connected terminal, and enter the IP address that was set for the Autoloader as the URL.

Initial Web Window

If a Java Plug-in version has been correctly installed in the terminal and if Autoloader and the terminal both have good network connections, the login window will appear as the initial window after a moment. (It may take about one minute for the login window to appear when first connected, depending on the network environment.) If a security warning window appears first, click “Run”. Depending on the version of Java, you may not be able to successfully use the remote management interface security settings. In that case, you can either review the security level, please Exceptions setting in Java.

Warning - Security

The application's digital signature cannot be verified.
Do you want to run the application?

Name:   WebAdmin
Publisher: NEC
From:    file://

Always trust content from this publisher.

Run   Cancel

The digital signature cannot be verified by a trusted source. Only run if you trust the origin of the application.

If the login window does not appear after a moment, it may be because the Java Plug-in has not been installed or has not been set up correctly.
Make sure Java has been installed correctly.
If Java has been installed but the login window does not appear, Java may have been disabled.
If using Internet Explorer, go to the Tools menu and select Internet Options to open the
Internet Options window, then double-click the "Advanced" tab and check the setting encircled below.

**Java Settings in Internet Explorer**
5.4 Login Formats

1) Registered users
   Up to six users can be freely set.
   The administrator is already registered as the reserved user, so the total number of users, including the reserved user and the freely selectable users, is seven.

(Reserved user)

<table>
<thead>
<tr>
<th>User type</th>
<th>Username</th>
<th>Password (default value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator</td>
<td>admin</td>
<td>secure</td>
</tr>
<tr>
<td>No. of characters</td>
<td>Up to 8</td>
<td>Up to 16</td>
</tr>
</tbody>
</table>

* Both the username and password are case sensitive.

2) Simultaneous login
   Up to four users can log in at the same time. A communication error will occur if a fifth user also attempts to log in simultaneously.
   When multiple users are logged in, the response becomes slow, and a communication error or timeout may occur, so it is recommended that users log in individually.

3) Access privileges
   Web administrators have the following three levels of access privileges.
   - Administrator (user)
   - Super user
   - General (user)

   The access level is distinguished by the user name used when the Web administrator logs in.
   A password is required during login to prevent unauthorized access.
   Below, users that can access the current page are indicated along the side of each page’s description.
5.5 Web Page Configuration (LTO4, 5, 6 model)

The page configuration shown by the browser can be divided into a banner section and a section of specific information for each page. The banner section shows information such as the manufacturer’s logo.

Although the web page can be viewed on an 800 × 600-dot monitor, at least 1280 × 1024 dots is recommended. The basic menu varies according to the access level of the logged in user. For further description, see "5.6 Web Page Details below".

Banner section
Page-specific information section
Menu section
Screen refresh section
5.6 Web Page Details (LTO4,5,6 model)

All windows (except for the login window) display the following menus. Therefore, the user can easily jump to any of these menus from any window.

5.6.1 Menu windows

The following are the menus displayed in each window after login. When any of these menus is selected, it changes to a color different from the color of the other menus. Menus that are not available for the current user access level are not displayed.

See the following table for details.

<table>
<thead>
<tr>
<th>Menu</th>
<th>Meaning</th>
<th>User</th>
<th>Super user</th>
<th>Administrator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor Loader</td>
<td>Menu used to check the Autoloader's status</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Manage Loader</td>
<td>Menu used to manage the Autoloader</td>
<td>×</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Configure Loader</td>
<td>Menu used to enter Autoloader settings</td>
<td>×</td>
<td>×</td>
<td>✓</td>
</tr>
<tr>
<td>Service Loader</td>
<td>Menu used to download log information</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Help</td>
<td>Help information can be accessed for each menu.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Logoff</td>
<td>Closes the Remote Manager Interface, and goes to the login window.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
5.6.2 Autoloader information viewing menus (Monitor Loader)

(1) Autoloader Basic Information (System Summary)

[Monitor Loader] - [System Summary]  

Function

This menu shows the image and basic information of the Autoloader.

Information

<1> Device image
A photo of the device is shown.

<2> System Summary

  Loader name: Autoloader's name
  Loader: Autoloader's status (OK, Not Ready, etc.)
  Drive: Drive's status (OK, Empty, Loading, etc.)
  I/O station: I/O station's status (Open, Closed, etc.)

<3> Front panel indicators:
These indicate the status of the LEDs on the front of the Autoloader.
For further description of front panel indicators, see "4.1.2 LED".

<4> Configuration and cartridge counts:
These indicate the slot settings and the number of cartridges.

a) Drive:
When the "Cartridge" value is "0", it means there are no cartridges in the drive.
When it is "1", it means a cartridge is in the drive. The Slots displays "N/A".

b) Storage:
This indicates the number of storage slot cartridges and the number of slot-loaded cartridges.

c) Cleaning/Inactive:
This indicates the number of cartridges in cleaning slots or inactive slots.

d) I/O station:
This indicates the number of cartridges in the I/O Station and the number of loaded cartridges.

e) Reserved:
This indicates the number of slots reserved for exchanging cartridges. "N/A" is shown for "Cartridges".

f) Total:
This indicates the total number of cartridges loaded in the Autoloader and the total number of slot-stored cartridges.

<5> Loader firmware version:
This indicates the Autoloader's firmware version.

<6> Loader serial number:
This indicates the Autoloader's serial number.
<7> Drive firmware version:
This indicates the drive's firmware version.

Autoloader Basic Information Window
(2) Autoloader Detailed Information Window (Loader Map)

[Monitor Loader] - [Loader Map]  All users

**Function**

This menu describes the cartridges loaded in various slots and the Autoloader's various parts.

**Information**

This window includes detailed information along the right side, which varies according to the selected Accessor, drive, etc.

<1> Loader map

This shows the physical positions of cartridges stored in the Autoloader, as well as images of the Autoloader's various components such as the Accessor and drive.

<2> Details

**Loader**

To display this information, click on the word "Loader" that appears in the upper right part of the device configuration image.

[Loader Information]

- **Accessor Status:** Indicates the Accessor's status. (OK, Degraded, Failed)
- **Drive Status:** Indicates the drive's status. (OK, Degraded, Failed)
- **I/O Station:** Indicates the I/O Station's setup status. (Enabled, Disabled)
- **Auto cleaning:** Indicates the auto cleaning settings.
- **Magazine:** Indicates the magazine's status. (Inserted, Unlocked)
- **Loader mode:** Indicates the Autoloader's operation mode. (Random, Sequential)
Slot or cartridge

[Slot N]
This section shows detailed information about the selected slot.

Slot type: Indicates the type of slot.
(Storage, I/O station, Cleaning, Inactive)

Element address: Indicates the slot’s address for reporting to the host.

[Cartridge]
Detailed information on the cartridge is displayed when a slot with a cartridge is selected.

Cartridge label: Shows the cartridge’s bar code label. “Unknown” is displayed when there is no barcode label.

Remain: Indicates the number of cleaning cartridges remaining.
This is shown only when the cartridge type is “cleaning cartridge”.

Caution:
The correct remaining number cannot be shown unless a cleaning cartridge has been loaded to the drive. Note that cartridge cleaning starts automatically when a cleaning cartridge is loaded. Users are expected to monitor the number of times such cleaning has been used.

Media Status: This indicates the cartridge’s status. (OK, Expired, Bad media, etc.)

Caution:
Note that the displayed slot number and the locations that can be picked may vary greatly according to the cartridge storage status.
When column contains no cartridges

Only the front slot can be selected. In this case, if the rear slot shown on the screen is selected, a lost number will not be allocated, so the slot’s detailed information will not be displayed.

When column contains one cartridge (1)

When one cartridge has been set in this column and the magazine has been set, that cartridge is shown above as Slot 1. In this case, even when the rear slot in the diagram is selected, the details on the slot are not displayed because a slot number has not been assigned.
When column contains one cartridge (2)

When the rear cartridge is moved in a column where two cartridges have been set, the front slot is allocated as Slot 2 and the rear one as Slot 1. Either can be selected to view its slot information.

When column contains two cartridges

When selected, Slot 1's information is displayed

Slot 2's information

When selected, Slot 1's information is displayed

Slot 2's information
Drive

[Drive Information]

This section shows drive information.

Status: Indicates the drive’s status. (OK, Degraded, Failed)
Vendor ID: Indicates the LTO drive manufacturer.
Product ID: Indicates the drive’s product name.
F/W version: Indicates the drive’s firmware version.
Serial number: Indicates the drive’s serial number.
World Wide ID: Indicates the drive’s WWN.

Data Compression: Indicates the drive’s compression mode

[Event]

Events such as drive errors and consumable replacement notices are indicated here.
(When there are no events, "No Data" is displayed.)

[Cartridge]

When there is a cartridge in the drive, the cartridge's detailed information is shown.

Cartridge label: Indicates the cartridge's bar code label. If there is no bar code label, "unknown" is displayed.
Write protect: Indicates the cartridge's write protection status.
Media Status: Indicates the cartridge's status. (OK, Expired, Bad Media, etc.)
Total: Indicates the cartridge's total capacity
Used: Indicates the cartridge's used capacity
Remain: Indicates the cartridges remain capacity
Accessor

[Accessor Information]
This section shows the Accessor's information.

Status: Indicates the Accessor's status. (OK, Degraded, Failed)

[Cartridge]
When a cartridge is loaded in the Accessor, the cartridge's detailed information is displayed.

Cartridge label: Indicates the cartridge's bar code label. If there is no bar code label, "unknown" is displayed.

Media Status: Indicates the cartridge's status. (OK, Expired, Bad Media, etc.)

[Event]
Indicates events such as Accessor errors, consumables needing replacement, etc. (If there are no events, "No Data" is displayed.)
Ethernet

Ethernet Information

This section shows Ethernet information.

Status: Indicates the Ethernet status. (OK, Degraded, Failed)

Protocol: Indicates the currently set protocol.

(IPv4, IPv6, IPv4/IPv6 Dual)

IPv6 address: Indicates the Autoloader’s IPv6 address.

DHCPv6: Indicates the DHCPv6’s setup status. (Enabled, Disabled)

Stateless IPv6 Address: Indicates the current setting. (Enabled, Disabled)

Static IPv6 Address: Indicates the current setting. (Enabled, Disabled)

IPv4 address: Indicates the Autoloader’s IPv4 address.

Subnet mask: Indicates the IPv4’s subnet mask.

Gateway Address: Indicates the IPv4’s gateway address.

DHCPv4: Indicates the DHCPv4’s setup status. (Enabled, Disabled)

Loader WWNN: Indicates the Autoloader’s World Wide Node Name.

MAC address: Indicates the Autoloader’s MAC address.

Link Speed: Indicates the Ethernet link speed.

NTP server: Indicates the address of the NTP server used by the Autoloader.

SNMP Trap: Indicates the recipient of SNMP trap notification.

E-Mail address: Indicates the recipient of email notification.
5.6.3 Autoloader management menu (Manage Loader)

(1) Move Cartridges window

[Manage Loader] - [Move Cartridges]  
Administrator/Super user

Function

This window's functions are similar to those of the operation panel's [MOVE CARTRIDGE] menu, which moves the cartridges by specifying the source and destination of each cartridge to be moved.

Use method

The following are the two ways this window can be used to move cartridges.

1) Drag and drop
   Select the cartridge to be moved and then drop it at the destination slot or the drive.

2) Specifying the destination slot number
   Right-click on the source cartridge's icon, then select the displayed slot number or the drive.

Information

<1> Slot map
   As with the Loader Map, this map shows slot information. Use this map to select the source and destination slots.

<2> Source information
   This section displays information on the slot that was selected as the source.

<3> Destination information
   This section displays information on the slot that was selected as the destination.

<4> Loader Motion information
   This section indicates the loader's current use status ("Operation in Progress", "Idle", etc.).

Window image
Move cartridges by dragging and dropping

Drag the target cartridge and drop it to move the cartridge.

Move the cursor to the cartridge icon on the target slot or drive to display the slot's information.

Operation display example

Move cartridges by specifying destination slot number

Right-click on the slot to view move destination.
(2) Unload Drive window

[Manage Loader] - [Unload Drive]  Administrator/Super user

Function
This window's functions are similar to those of the operation panel's [UNLOAD] menu, which enables a cartridge that has been inserted in the drive to be unloaded, and displays an unload completion dialog box when this operation is completed.

The "Unload Drive" function cannot be executed unless there is a cartridge in the drive.

Use method
1) Click the Unload button to view the confirmation screen.
2) Select "Yes" to start unloading.

Information

<1> Unload Drive button
This starts the unload operation.

Window image

![Unload Drive Window](image)
(3) **Clean Drive window**

[Manage Loader] - [Clean Drive]  
Administrator/Super user

**Function**

This window's functions are similar to those of the operation panel's [Clean Drive] menu, which inserts a cleaning cartridge into the drive specified by the selected slot, and then cleans the drive. When drive cleaning is finished, the cleaning cartridge is returned to the original slot, and the cleaning complete dialog box is displayed.

If the cleaning operation cannot be performed, this operation is grayed out.

**Use method**

1) Select the cleaning cartridge to be used.
   (If there are several, select from the pull-down menu.)
2) Click the Clean button to view the confirmation menu.
3) Select “Yes” to start the cleaning operation.

**Information**

<1> “Use cartridge” setting
   Select the cartridge to be used for cleaning.

<2> Clean button
   This executes the cleaning operation.

**Window image**

![Drive Cleaning Window](image-url)

**Drive Cleaning Window**
During cleaning operation (Loader Map window)

Cleaning error (when expired cartridge is inserted)

"Cleaning" is displayed when operating normally.
(4) Loader State (OFFLINE/ONLINE) switching window

[Manage Loader] - [Loader State]  Administrator/Super user

Function
This function is similar to the operation panel's [CHANGE LIBRARY STATE] menu's function that switches the Autoloader's setting for the Accessor between online and offline.

Information
<1> Current state:
Indicate the Autoloader's online/offline status. (Online/Offline)

<2> Bring Online/Offline button
Click this button to switch the Accessor's status between online and offline. When the Autoloader is online, the [Bring Offline] button is displayed. When the Autoloader is offline, the [Bring Online] button is displayed. After clicking this button, if the operation is successful, the operation completed dialog box will appear.

Window image

ONLINE/OFFLINE switching window (when online)

Confirmation window
Normal end
(5) Inventory

[Manage Loader] - [Inventory]  Administrator/Super user

Function
This function is similar to the function in the operation panel's [INVENTORY] menu that executes the inventory of cartridges.

Information
<1> Start button
Start inventory.
Click the [Start] button to start the inventory operation. When this operation is completed, the operation completed dialog box will appear.

Window image

Inventory window
Example when inventory is in progress

Normal end
5.6.4 Autoloader settings

(1) Account settings (User Access) window

This window is used to add, modify, or remove users with login access.

To add a user, use the Select Action scroll box to select "Add", and to modify or remove a user, first select the current user to be modified or removed, then use the Select Action scroll box to select "Modify" or "Remove".

Information

<1> Refresh button
Click the Refresh button to display a list of currently registered users.

<2> Current users:
This lists the currently registered users.

Window image

Account Settings Window
(1) Adding a new user
When "Add" is selected under Selection Action, users can be newly registered.
After entering items in the Add a User window, click "Submit" to register a new user.

**Information**

<1> User name:
   Enter the user name to be registered.

<2> New password:
   Enter a password for the user to be registered.

<3> Confirm password:
   Enter the password again for confirmation. (Enter the same new password.)

<4> Role:
   Select a user level (User, Super user, Administrator) from the list.
   Administrator
   Super User
   User

<5> Clear button
   This clears the information from the "Add a User" form.

<6> Submit button
   This saves the information in the "Add a User" form.

<7> Cancel button
   This closes the form without saving the "Add a User" information.
(2) Modifying a current user
To modify a current (registered) user, select “Modify” in the Selection Action scroll box. After entering the items in the user registration window, click “Submit” to change the information for the specified current user.

Information

<1> User name:
The registered user name is displayed.

<2> New password:
Enter the password of the user to be modified.

<3> Confirm password:
Enter the password again for confirmation. (Enter the same password.)

<4> Role:
Select a user level (User, Super user, Administrator) from the list to be modified.
   Administrator
   Super User
   User

<5> Clear button
This clears the information from the "Modify a User" form.

<6> Submit button
This saves the information in the "Modify a User" form.

<7> Cancel button
This closes the "Modify a User" form without saving any new information.

Modify a User Form
(3) Removing a current user
If “Remove” is selected in the Selection Action scroll box, the registered user can be removed.
When “Remove” is selected, the following dialog box is displayed. Select "Yes" to remove the user.

Remove a User confirmation dialog box

When the user is removed, the following dialog box will appear.

Completion dialog box
(2) Auto Cleaning setup window

Configure Loader - [Auto Cleaning]

Administrator

Function
This window is used to set auto cleaning, the Autoloader name, and the bar code label length to be reported to the host.

Information
<1> Refresh button
This displays the current settings of this page.

<2> Loader
The following Autoloader settings can be entered.
Loader name: The Autoloader's name can be registered.
Auto cleaning: Sets auto cleaning.
   Enable
   Disable
Bar code label length: Selects the bar code label length to be reported to the host.
   (Default value is 8.)

<3> Submit button
Click this button to confirm the settings. When complete, a Normal End message will appear.

Windows image

Auto Cleaning setup window
(3) **Loader Mode setup window**

[Configure Loader] - [Loader Mode]  

**Function**

This window is used to set the Autoloader's operation mode, I/O slot, and number of active slots.

**Information**

<1> Refresh button

This displays the current setup information of this page.

<2> Loader

This sets the following Autoloader settings.

- **Loader mode:**
  
  For the Loader mode setting, select “Random” or “Sequential”.

- **Loop:**
  
  This setting is enabled when in “Sequential” mode. When the last cartridges is used while in “Sequential” mode, this sets “Automatic looping” mode so that the first cartridge will be used next.

  - **Enable:** Operation is in Automatic looping mode.
  - **Disable:** Operation is not in Automatic looping mode.

- **Auto load:**
  
  This setting is enabled when in “Sequential” mode. When the magazine is locked, the cartridge in the lowest-numbered slot is automatically loaded to the drive.

  - **Enable:** Auto load is performed.
  - **Disable:** Auto load is not performed.

- **Number of active slots:**
  
  This can be used to set the loader’s active slots. If “+1” is selected, slot 9 is assigned to the I/O Station.

- **Drive power save mode:**
  
  This can be used to set the drive power save mode.

  - **Enable:** Enable the drive power save mode.
  - **Disable:** Disable the drive power save mode.

- **Power save time(1-99mins):**
  
  This can be used to set the time until a drive shifts to power save mode.

  (default:20min)

- **SAS Link Speed:**
  
  This can be used to set the SAS I/F Link Speed. (default:3Gbps)

<3> Submit button

This button is used to confirm settings. When the settings are completed, a normal end message will appear.
Loader Mode setup window
(4) Network setup window

[Configure Loader] - [Network]  Administrator

Function
This window is used to set up network connections.

Information
<1> Refresh button
This indicates the current setup information of this page.

<2> Ethernet setting
Link speed:
The network's link speed can be set as "Auto", "10Base-T Full", "10Base-T Half", "100Base-TX Full", or "100Base-TX Half".

<3> TCP/IP Settings
Set time updating from the Time Server (NTP server) as enabled or disabled, and specify information related to time settings.
Security:
When "Enable SSL for Web" is checked, SSL is used between the Autoloader and the Applet to set encrypted communications.
IPv4 setting:
When "Use IPv4" is checked, the IPv4 protocol is used for communications.
- Obtain an IP address automatically (DHCP)
The IPv4 address, subnet mask, and gateway are retrieved from the DHCP server and set automatically.
- Use static IP address
The IPv4 address, subnet mask, and gateway are set manually.
IPv6 setting:
When "Use IPv6" is checked, the IPv6 protocol is used for communications.
- Obtain an IP address automatically (DHCP)
Information is retrieved by DHCP, and the IPv6 address, prefix length, and gateway are set automatically.
- Obtain an IP address automatically (Stateless Auto Config)
Information is retrieved from a router advertisement, and the IPv6 address, prefix length, and gateway are set automatically.
- Use static IP address
The IPv6 address, prefix length, and gateway are set manually.
DNS Settings:
"Use DNS" is checked when using DNS settings.

<4> Submit button
This button is used to confirm settings. When the settings are completed, a normal end message will appear.
Window image

Network setup window
(5) Date and Time setup window

[Configure Loader] - [Date and Time] Administrator

Function
This window is used to set the Autoloader's calendar/clock function.

Information

<1> Refresh button
This indicates the current setup information of this page.

<2> Date and Time setting
Set time updating from the Time Server (NTP server) as enabled or disabled, and specify information related to time settings.
NTP server:
This sets time updating from the Time Server (NTP server) as enabled or disabled.
Enable: Time information is retrieved from the NTP server.
Disable: Time information is not retrieved from the NTP server.
NTP server address:
Specify the NTP server's address here.
Time Zone (GMT): Select the local time zone from the drop-down list. (GMT -12:00 to GMT +13:00)
For example, Japan time is +09:00
Date (MM/DD/YYYY): This sets the current date in MM/DD/YYYY format.
Time (HH:MM:SS): This sets the current time in HH:MM:SS (24-hour display) format.

<3> Submit button
This button is used to confirm settings.
Date and Time setup window
(6) Event Notifications setup window


Function

An administrator can use this window to set the destination to notify the Autoloader information via email and SNMP.

(1) email notification

Select the "SMTP (Mail) Settings" tab to set email notification.

Information

<1> Tabs
The tabs are used to switch between SMTP (email) Settings and SNMP Settings.

<2> Refresh button
This indicates the current setup information of this page.

<3> Mail server and mail header settings
SMTP server address
Specify the mail server's IP address or domain name.

Sender address:
A string of up to 64 characters can be used to specify this Autoloader's email address.
(Default value if omitted: blank)

Subject:
A string of up to 64 characters can be used to specify the subject of email sent from the Autoloader.
(Default value if omitted: blank)

<4> (Mail to:) setting
Specify the destination email addresses for Autoloader information.
(Up to four strings of 64 characters each can be specified.)

<5> Mail event:
Select one type of event for email notification.
[Event types]
"Error Events"
"Error and Warning Events"
"Error, Warning, and Information Events"

<6> Test button
Click this button to send test email to a registered "Mail to:" address to confirm email notification.

<7> Submit button
This button is used to confirm each setting.
Event Notifications setup window (email)
(2) SNMP notification

Select the "SNMP Settings" tab to set SNMP notifications.

Information

<1> Tabs
The tabs are used to switch between SMTP (email) Settings and SNMP Settings.

<2> SNMP Enable button
This button is used to switch between SNMP disable and enable Settings.

<3> Refresh button
This indicates the current setup information of this page.

<4> SNMP Settings
These are general settings for SNMP.
Community:
Sets the SNMP's community name. (Up to 32 characters) (Default value: Public)
Name:
Sets the device name. (Up to 32 characters) (Default value: NULL (blank))
Location:
Sets the device's physical location. (Up to 32 characters) (Default value: NULL (blank))
Contact:
Sets contact information. (Up to 64 characters) (Default value: NULL (blank))
SNMPv3 engine ID:
The SNMPv3 Agent's Engine ID may have to be set for the manager.

<5> Submit button
This button is used to confirm settings. When the Submit button is clicked, the entered values are checked and are set when normal.

<6> Trap event:
This sets the type of event to be notified via the SNMP trap. Select "Error Events", "Error and Warning Events", or "Error, Warning and Information Events".

<7> Test button
Click this button to send a test trap for confirmation of SNMP notification, to the addresses registered under "Trap List".

<8> Trap List
Enter the addresses to be notified via SNMP trap when the specified event occurs in the Autoloader.

<9> SNMPv3 User List
Enter the user information that is required to monitor the MIB data on devices accessed by the Manager using the SNMPv3 protocol. The user names registered here are used to enable execution of snmpget and snmpwalk commands from the SNMPv3 Manager.
Event Notifications setup window (SNMP)
5.6.5 Log Extracting (Service Loader)

1) Autoloader Event Log (Operator Interventions) Window

| Service Loader | Operator Interventions |

**Function**
Display the log of autoloader event.

**Display contents**

1> Refresh Button
Will read the current information of this page.

2> Index List
In the auto log event the 000 is the newest log in the datewise log entry. To refer to the details of the log clicked, go to “Detail” area page.

3> Filter
You can filter the log event depending upon “Unit type:” and “Event level:”.

The information that is displayed in the WEB user interface page is refreshed at intervals set by the operator “Refresh Interval”. The “Refresh Interval” can be set by clicking the “Display Refresh Interval” slide located at the bottom left of this page.

**Window image**
(2) Autoloader Error Log (View Loader Logs) Window

[Service Loader] - [View Loader Logs]  CE/Administrator

Function
Display the error log of autoloader.

Display contents
<1> Refresh Button
Will read the current information of this page.

<2> Index list
In the auto log event the 000 is the newest log in the datewise log entry. To refer to the details of the log clicked, go to "Detail" area page.

<3> Filter
You can filter the log event depending upon "Code" and "Key Sense".

The information that is displayed in the WEB user interface page is refreshed at intervals set by the operator “Refresh Interval”. The “Refresh Interval” can be set by clicking the "Display Refresh Interval" slide located at the bottom left of this page.

Window image

View Loader Logs Window
(3) Trace Data of the Autoloader (Traces) Window

Function
This summarizes 4 logs, namely; “Command Log”, “Error Log”, “Retry Log”, “Mechanical Motion Log”.

Display contents
<1> Refresh Button
Will read the current information of this page.

<2> System Trace Data
Displays the log of 4 logs, namely; “Command Log”, “Error Log”, “Retry Log”, and “Mechanical Motion Log”.

<3> Filter
You can filter the log event depending upon “Trace type” and “Number of minutes”.

Window image

Traces Window
(4) Download Drive Logs Window

[Service Loader] - [Download Drive Logs]  All users

Function

This downloads the drive’s logs. Specify the output file names for "Normal data filename" and "Force data filename", then click the [Download] button to download these logs.

Files can also be specified by clicking the Browse button.

Information

<1> Normal data filename:
   Specify the file name for saving the drive’s Normal data log.
   Or click the Browse button to select the file name from a file list.

<2> Force data filename:
   Specify the file name for saving the drive’s Force data log.
   Or click the Browse button to select the file name from a file list.

<3> Download button
   Click this button to start downloading the logs. When downloading is completed, a dialog box will appear.

Window image

Download Drive Logs window (default settings)
(5) Download Loader Logs

[Service Loader] - [Download Loader Logs]  All users

Function
This downloads the Autoloader's logs. Specify the output file names for "Data filename", then click the [Download] button to download the Autoloader's logs. (This function may be used by maintenance staff when a fault has occurred.)

Information

<1> Data filename:
Specify the file name for saving the Autoloader's logs.
Or click the Browse button to select the file name from a file list.

<2> Download button
Click this button to start downloading the logs. When downloading is completed, a dialog box will appear.

Window image

Download Loader Logs window (default settings)
(6) Firmware Refresh Screen (Firmware Update) Window

Function

The firmware update of autoloader or drive is done.

Display contents

<1> Loader Firmware Update
Select "Loader firmware file".
The file designation is only possible by clicking the "Browse" Button.

<2> Update Button
Clicking "Update" Button will start the firmware update process.

<3> Drive Firmware Update
Select "Drive firmware file".
The file designation is only possible by clicking the "Browse" Button.

<4> Update Button
Clicking "Update" Button will start the firmware update process.

Window image
5.7 Web Page Configuration (LTO7 model)

The page configuration shown by the browser can be divided into a banner section and a section of specific information for each page. The banner section shows information such as the manufacturer’s logo.

Although the web page can be viewed on an 800 × 600-dot monitor, at least 1280 × 1024 dots is recommended. The basic menu varies according to the access level of the logged in user.

For further description, see “5.8 Web Page Details (LTO7 model) below”.

Banner section

Page-specific information section

Menu section
5.8 Web Page Details (LTO7 model)

All windows (except for the login window) display the following menus. Therefore, the user can easily jump to any of these menus from any window.

5.8.1 Menu windows

The following are the menus displayed in each window after login. When any of these menus is selected, it changes to a color different from the color of the other menus.

Menus that are not available for the current user access level are not displayed.

See the following table for details.

<table>
<thead>
<tr>
<th>Menu</th>
<th>Meaning</th>
<th>User</th>
<th>Super user</th>
<th>Administrator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor Loader</td>
<td>Menu used to check the Autoloader's status</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Manage Loader</td>
<td>Menu used to manage the Autoloader</td>
<td>×</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Configure Loader</td>
<td>Menu used to enter Autoloader settings</td>
<td>×</td>
<td>×</td>
<td>✓</td>
</tr>
<tr>
<td>Service Loader</td>
<td>Menu used to download log information</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Logoff</td>
<td>Closes the Remote Manager Interface, and goes to the login window.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Menus available at various user access levels
5.8.2 Autoloader information viewing menus (Monitor Loader)

(1) Autoloader Basic Information (System Summary)

[Monitor Loader] - [System Summary]  All users

Function
This menu shows the image and basic information of the Autoloader.

Information

<1> Device image
   A photo of the device is shown.

<2> System Summary
   Loader name:  Autoloader's name
   Loader:  Autoloader's status (OK, Not Ready, etc.)
   Drive:  Drive's status (OK, Empty, Loading, etc.)
   I/O station:  I/O station's status (Open, Closed, etc.)

<3> Front panel indicators:
   These indicate the status of the LEDs on the front of the Autoloader.
   For further description of front panel indicators, see “4.1.2 LED”.

<4> Configuration and cartridge counts:
   These indicate the slot settings and the number of cartridges.
   a) Drive:
      When the "Cartridge" value is "0", it means there are no cartridges in the drive.
      When it is "1", it means a cartridge is in the drive. The Slots displays "N/A".
   b) Storage:
      This indicates the number of storage slot cartridges and the number of slot-loaded cartridges.
   c) Cleaning/Inactive:
      This indicates the number of cartridges in cleaning slots or inactive slots.
   d) I/O station:
      This indicates the number of cartridges in the I/O Station and the number of loaded cartridges.
   e) Reserved:
      This indicates the number of slots reserved for exchanging cartridges. "N/A" is shown for "Cartridges".
   f) Total:
      This indicates the total number of cartridges loaded in the Autoloader and the total number of slot-stored cartridges.

<5> Loader firmware version:
   This indicates the Autoloader's firmware version.

<6> Loader serial number:
   This indicates the Autoloader's serial number.
Drive firmware version:
This indicates the drive’s firmware version.

**Window image**

**System Summary**

**Status**
- Loader name: Ready
- Drive: Empty
- Magazine: Closed

**Front Panel Indicators**

**Configuration and Cartridge Counts**

<table>
<thead>
<tr>
<th>Cartridges</th>
<th>Slots</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>N/A</td>
</tr>
<tr>
<td>Storage</td>
<td>4</td>
</tr>
<tr>
<td>Cleaning / Inactive</td>
<td>0</td>
</tr>
<tr>
<td>I/O station</td>
<td>0</td>
</tr>
<tr>
<td>Reserved</td>
<td>N/A</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
</tr>
</tbody>
</table>

**Version**
- Loader firmware version: 0006
- Loader serial number: 0Y16FF9001
- Drive firmware version: G585

**Autoloader Basic Information Window**
(2) Autoloader Detailed Information Window (Loader Map)

Function
This menu describes the cartridges loaded in various slots and the Autoloader's various parts.

Information
This window includes detailed information along the right side, which varies according to the selected Accessor, drive, etc.

<1> Loader map
This shows the physical positions of cartridges stored in the Autoloader, as well as images of the Autoloader's various components such as the Accessor and drive.

<2> Details
Loader
To display this information, click on the word "Loader" that appears in the upper right part of the device configuration image.

[Unit Status]
Loader Status: Indicates the Loader's status. (OK, Degraded, Failed)
Accessor Status: Indicates the Accessor's status. (OK, Degraded, Failed)
Drive Status: Indicates the drive's status. (OK, Degraded, Failed)
Magazine: Indicates the magazine's status. (Closed, Unlocked)

[Loader Setting]
Loader mode: Indicates the Autoloader's operation mode.
(Random, Sequential)
I/O Station: Indicates the I/O Station's setup status. (Enabled, Disabled)
Auto cleaning: Indicates the auto cleaning settings.
Bar code label length: Indicates the bar code label length settings.
Drive power save mode: Indicates the Drive power save mode settings.
Slot or cartridge

[Slot N]

This section shows detailed information about the selected slot.

Slot type: Indicates the type of slot.
(Storage, I/O station, Cleaning, Inactive)

Slot Status: This indicates the slot's status. (OK, Failed, etc.)

Element address: Indicates the slot's address for reporting to the host.

[Cartridge]

Detailed information on the cartridge is displayed when a slot with a cartridge is selected.

Media Status: This indicates the cartridge's status. (OK, Expired, Bad media, etc.)

Cartridge label: Shows the cartridge's bar code label. "Unknown" is displayed when there is no barcode label.

Encryptions Indicates the encryption status. (Encrypted, Not encrypted, unknown)

Total Capacity Indicates the total capacity of tape cartridge.

Used Capacity Indicates the used capacity of tape cartridge.

Remain: Indicates the number of cleaning cartridges remaining.
This is shown only when the cartridge type is "cleaning cartridge".

Caution:
The correct remaining number cannot be shown unless a cleaning cartridge has been loaded to the drive. Note that cartridge cleaning starts automatically when a cleaning cartridge is loaded. Users are expected to monitor the number of times such cleaning has been used.

Caution:

Note that the displayed slot number and the locations that can be picked may vary greatly according to the cartridge storage status.
When column contains no cartridges

Only the front slot can be selected. In this case, if the rear slot shown on the screen is selected, a lost number will not be allocated, so the slot's detailed information will not be displayed.

When column contains one cartridge (1)

When one cartridge has been set in this column and the magazine has been set, that cartridge is shown above as Slot 1. In this case, even when the rear slot in the diagram is selected, the details on the slot are not displayed because a slot number has not been assigned.
When column contains one cartridge (2)

When the rear cartridge is moved in a column where two cartridges have been set, the front slot is allocated as Slot 2 and the rear one as Slot 1. Either can be selected to view its slot information.

When column contains two cartridges

When selected, Slot 1’s information is displayed

Slot 2’s information
Drive

[Drive Information]
This section shows drive information.

Status: Indicates the drive's status. (OK, Degraded, Failed)
Element address: Indicates the drive's address for reporting to the host.
Vendor ID: Indicates the LTO drive manufacturer.
Product ID: Indicates the drive's product name.
Serial number: Indicates the drive's serial number.
F/W version: Indicates the drive's firmware version.
Host I/F: Indicates the Host I/F (SAS)
Data Compression: Indicates the drive's compression mode
Link speed: Indicates the I/F Link Speed.
World Wide ID: Indicates the drive's WWN.

[Cartridge]
When there is a cartridge in the drive, the cartridge's detailed information is shown.

Media Status: Indicates the cartridge's status. (OK, Expired, Bad Media, etc.)
Cartridge label: Indicates the cartridge's bar code label. If there is no bar code label, "unknown" is displayed.
Home Slot: Indicates the cartridge's home slot.
Encryptions: Indicates the encryption status. (Encrypted, Not encrypted, unknown)
Write protect: Indicates the cartridge's write protection status.
Total Capacity: Indicates the total capacity of tape cartridge.
Used Capacity: Indicates the used capacity of tape cartridge.
**Access or [Accessor Information]**

This section shows the Accessor’s information.

**Status:** Indicates the Accessor’s status. (OK, Degraded, Failed)

**Cartridge**

When a cartridge is loaded in the Accessor, the cartridge’s detailed information is displayed.

**Cartridge label:** Indicates the cartridge's bar code label. If there is no bar code label, "unknown" is displayed.

**Media Status:** Indicates the cartridge's status. (OK, Expired, Bad Media, etc.)
Ethernet

[ Ethernet Information ]
This section shows Ethernet information.

**Status:** Indicates the Ethernet status. (OK, Degraded, Failed)

**Link Speed:** Indicates the Ethernet link speed.

**MAC address:** Indicates the Autoloader’s MAC address.

**Loader WWNN:** Indicates the Autoloader’s World Wide Node Name.

**[TCP/IP Setting]**

**Protocol:** Indicates the currently set protocol.

- (IPv4, IPv6, IPv4/IPv6 Dual)

**SSL for web:** Indicates the SSL setting. (Enable, Disable)

**[IPv6 Setting]**

**IPv6 address:** Indicates the Autoloader’s IPv6 address.

**DHCPv6:** Indicates the DHCPv6’s setup status. (Enabled, Disabled)

**Stateless IPv6 Address:** Indicates the current setting. (Enabled, Disabled)

**Static IPv6 Address:** Indicates the current setting. (Enabled, Disabled)

**[IPv4 Setting]**

**IPv4 address:** Indicates the Autoloader’s IPv4 address.

**Subnet mask:** Indicates the IPv4’s subnet mask.

**Gateway:** Indicates the IPv4’s gateway address.

**DHCPv4:** Indicates the DHCPv4’s setup status. (Enabled, Disabled)

**[SMTP Setting]**

**SMTP server address:** Indicates the address of the SMTP server.

**Sender address:** Indicates the sender address of SMTP.

**Subject:** Indicates the Subject of Mail (SMTP).

**Mail To:** Indicates the destination email addresses (SMTP).

**[SNMP Setting]**

**Community:** Indicates the SNMP’s community name.

**SNMPv3 engine ID:** Indicates the SNMPv3 Agent’s Engine ID.

**Trap To:** Indicates the addresses to be notified via SNMP trap.
**Loader Map**

- **Slots**
  - Slot 9
  - Slot 8
  - Slot 5/6
  - Slot 3/4
  - Slot 1/2

- **Ethernet Information**
  - Status: OK
  - Link speed: Auto
  - MAC address: 00:30:13:D3:EA:2C
  - Loader WWNN: 50:03:01:3D:3E:A2:C0:10

- **TCP/IP Setting**
  - Protocol: IPv4/v6 Dual
  - SSL for web: Disable

- **IPv6 Setting**
  - IPv6 address: 2001:db8:1:1
  - DHCPv6: Disable
  - Stateless IPv6 address: Disable
  - Static IPv6 address: Disable

- **IPv4 Setting**
  - IPv4 address: 192.168.1.2
  - Subnet mask: 255.255.255.0
  - Gateway: 192.168.1.254
  - DHCPv4: Disable

- **SMTP Setting**
  - SMTP server address:
  - Sender address:
  - Subject:
  - Mail To:
    - No settings

- **SNMP Setting**
  - Community: public
  - SNMPv3 engine ID: 00 00 00 77 03 00 10 13 D5
  - Trap To:
    - No settings
5.8.3 Autoloader management menu (Manage Loader)

(1) Move Cartridges window

[Manage Loader] - [Move Cartridges]  Administrator/Super user

Function

This window's functions are similar to those of the operation panel's [MOVE CARTRIDGE] menu, which moves the cartridges by specifying the source and destination of each cartridge to be moved.

Use method

The following are the two ways this window can be used to move cartridges.

1) Drag and drop
   Select the cartridge to be moved and then drop it at the destination slot or the drive.

2) Specifying the destination slot number
   Click on the source cartridge's icon, then select the displayed slot number or the drive.

Information

<1> Slot map
   As with the Loader Map, this map shows slot information. Use this map to select the source and destination slots.

<2> Source information
   This section displays information on the slot that was selected as the source.

<3> Destination information
   This section displays information on the slot that was selected as the destination.

<4> Move button
   After specifying the source slot and the destination slot, move cartridge starts by clicking the move button.

Window image
Move cartridges by dragging and dropping

Operation display example

Drag the target cartridge

Move the cursor to the cartridge icon on the target slot or drive to display the slot's information.
(2) Unload Drive window

[Manage Loader] - [Unload Drive]  Administrator/Super user

Function

This window's functions are similar to those of the operation panel's [UNLOAD] menu, which enables a cartridge that has been inserted in the drive to be unloaded, and displays an unload completion dialog box when this operation is completed. The "Unload Drive" function cannot be executed unless there is a cartridge in the drive.

Use method

1) Click the Unload button.

Information

<1> Unload Drive button

This starts the unload operation.

Window image

```
<table>
<thead>
<tr>
<th>Unload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
</tr>
<tr>
<td>state:</td>
</tr>
<tr>
<td>Ready (G70075L7)</td>
</tr>
<tr>
<td>Unload</td>
</tr>
</tbody>
</table>
```

Unload Drive Window
(3) Clean Drive window

Function

This window's functions are similar to those of the operation panel's [Clean Drive] menu, which inserts a cleaning cartridge into the drive specified by the selected slot, and then cleans the drive. When drive cleaning is finished, the cleaning cartridge is returned to the original slot, and the cleaning complete dialog box is displayed.

If the cleaning operation cannot be performed, this operation is grayed out.

Use method

1) Select the cleaning cartridge to be used.
   (If there are several, select from the pull-down menu.)
2) Click the Clean button to view the confirmation menu.
3) Select “Yes” to start the cleaning operation.

Information

<1> “Use cartridge” setting
   Select the cartridge to be used for cleaning.
<2> Clean button
   This executes the cleaning operation.

Window image

Drive Cleaning Window
(4) Loader State (OFFLINE/ONLINE) switching window

[Manage Loader] - [Loader State] Administrator/Super user

Function
This function is similar to the operation panel's [CHANGE LIBRARY STATE] menu's function that switches the Autoloader's setting for the Accessor between online and offline.

Information
<1> Current state:
Indicate the Autoloader's online/offline status. (Online/Offline)

<2> Bring Online/Offline button
Click this button to switch the Accessor's status between online and offline.
When the Autoloader is online, the [Bring Offline] button is displayed.
When the Autoloader is offline, the [Bring Online] button is displayed.
After clicking this button, if the operation is successful, the operation completed dialog box will appear.

Window image

[Image of ONLINE/OFFLINE switching window (when online)]
(5) Inventory

[Manage Loader] - [Inventory]  Administrator/Super user

Function

This function is similar to the function in the operation panel's [INVENTORY] menu that executes the inventory of cartridges.

Information

<1> Start button

Start inventory.

Click the [Start] button to start the inventory operation. When this operation is completed, the operation completed dialog box will appear.

Window image

<table>
<thead>
<tr>
<th>Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Inventory</td>
</tr>
</tbody>
</table>

<1>

**Inventory window**

![Inventory window]

**Example when inventory is in progress**
5.8.4 Autoloader settings

(1) Account settings (User Access) window

[Configure Loader] - [User Access]

**Function**

This window is used to add, modify, or remove users with login access. To add a user, use the Select Action scroll box to select "Add", and to modify or remove a user, first select the current user to be modified or removed, then use the Select Action scroll box to select "Modify" or "Remove".

**Information**

- **<1> Add User button**
  When "Add User" button is clicked, users can be newly registered.
- **<2> Current users:**
  This lists the currently registered users.
- **<3> Remove User Button**
  When "Remove" button is clicked, users can be removed.
- **<4> Modify User Button**
  When "Modify" button is clicked, users can be modified.

**Window image**

<table>
<thead>
<tr>
<th>User Access</th>
<th>Current Users</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="User Access" /></td>
<td><img src="image2.png" alt="Current Users" /></td>
</tr>
</tbody>
</table>

**Account Settings Window**
(1) Adding a new user
When "Add User" button is clicked, users can be newly registered. After entering items in the Add a User window, click "Submit" to register a new user.

Information
<1> User name:
   Enter the user name to be registered.
<2> New password:
   Enter a password for the user to be registered.
<3> Confirm password:
   Enter the password again for confirmation. (Enter the same new password.)
<4> Role:
   Select a user level (User, Super user, Administrator) from the list.
   Administrator
   Super User
   User
<5> Cancel button
   This closes the form without saving the "Add a User" information.
<6> Submit button
   This saves the information in the "Add a User" form.

Add a User

<1> User Name: [blank]
<2> Password: [blank] (0/16)
<3> Confirm: [blank]
<4> Role: [list of options]

[Cancel] [Submit]

Add a User Form
(2) Modifying a current user
To modify a current (registered) user, select “Modify”.
After entering the items in the user registration window, click "Submit" to change the information for the specified current user.

Information
<1> User name:
The registered user name is displayed.
<2> New password:
Enter the password of the user to be modified.
<3> Confirm password:
Enter the password again for confirmation. (Enter the same password.)
<4> Role:
Select a user level (User, Super user, Administrator) from the list to be modified.
   Administrator
   Super User
   User
<5> Cancel button
This closes the "Modify a User" form without saving any new information.
<6> Submit button
This saves the information in the "Modify a User" form.
(3) Removing a current user

If "Remove" is selected, the registered user can be removed. When "Remove" is selected, the following dialog box is displayed. Select "Yes" to remove the user.

Remove a User confirmation dialog box

When the user is removed, the following dialog box will appear.

Completion dialog box

The user himself cannot be deleted. Service cannot be displayed the user of the Admin authority, be changed, and be encrypting set deleted effectively.
(2) Loader setup window

[Configure Loader] - [Loader]  

Function

This window is used to set the Autoloader's operation mode, I/O slot, and number of active slots.

Information

<1> Loader Setting:

Loader name:
The Autoloader's name can be registered.

Loader mode:
For the Loader mode setting, select "Random" or "Sequential".

Loop:
This setting is enabled when in "Sequential" mode. When the last cartridges is used while in "Sequential" mode, this sets "Automatic looping" mode so that the first cartridge will be used next.

Enable: Operation is in Automatic looping mode.
Disable: Operation is not in Automatic looping mode.

Auto load:
This setting is enabled when in "Sequential" mode. When the magazine is locked, the cartridge in the lowest-numbered slot is automatically loaded to the drive.

Enable: Auto load is performed.
Disable: Auto load is not performed.

Bar code label length:
Selects the bar code label length to be reported to the host. (Default value is 8.)

Number of active slots:
This can be used to set the loader's active slots.

I/O station:
This can be used to set the I/O station.(Enable,Disable)

Auto cleaning:
This can be used to set Auto cleaning.(Enable,Disable)
Drive Setting:

Link Speed:
This can be used to set the I/F Link Speed. (default: 6Gb/sec)

Drive power save mode:
This can be used to set the drive power save mode.
Enable: Enable the drive power save mode.
Disable: Disable the drive power save mode.

Power save time (1-99 mins):
This can be used to set the time until a drive shifts to power save mode.
(default: 20 min)

Submit button
This button is used to confirm settings. When the settings are completed, a normal end message will appear.

Window image
(3) Network setup window

[Configure Loader] - [Network]  Administrator

Function
This window is used to set up network connections.

Information

<1> Ethernet setting
  Link speed:
  The network's link speed can be set as "Auto", "10Base-T Full", "10Base-T Half",
  "100Base-TX Full", or "100Base-TX Half".

<2> Security Settings
When "Enable SSL for Web" is checked, SSL is used between the Autoloader and the Applet to set encrypted communications.

<3> IPv4 setting:
When "Use IPv4" is checked, the IPv4 protocol is used for communications.
  - Obtain an IP address automatically (DHCP)
    The IPv4 address, subnet mask, and gateway are retrieved from the DHCP server and set automatically.
  - Use static IP address
    The IPv4 address, subnet mask, and gateway are set manually.

<4> IPv6 setting:
When "Use IPv6" is checked, the IPv6 protocol is used for communications.
  - Obtain an IP address automatically (DHCP)
    Information is retrieved by DHCP, and the IPv6 address, prefix length, and gateway are set automatically.
  - Obtain an IP address automatically (Stateless Auto Config)
    Information is retrieved from a router advertisement, and the IPv6 address, prefix length, and gateway are set automatically.
  - Use static IP address
    The IPv6 address, prefix length, and gateway are set manually.

<5> DNS setting:
"Use DNS" is checked when using DNS settings.

<6> Submit button
This button is used to confirm settings. When the settings are completed, a normal end message will appear.
### Network setup window

#### Ethernet
- **Link speed:** Auto

#### Security
- **Enable SSL for Web**

#### IPv4 Setting
- **IPv4 address:** 192.168.1.2
- **Subnet mask:** 255.255.255.0
- **Gateway:** 192.168.1.254

#### IPv6 Setting
- **IPv6 address:** 2001:db8:1:1
- **Prefix length (0-128):** 64
- **Gateway:**

#### DNS Setting
- **Use DNS**
- **DNS IP address:**

---

**Submit**
(4) Date and Time setup window

[Configure Loader] - [Date and Time]

Administrator

Function
This window is used to set the Autoloader's calendar/clock function.

Information
<1> Date and Time setting
Set time updating from the Time Server (NTP server) as enabled or disabled, and specify information related to time settings.

NTP server:
This sets time updating from the Time Server (NTP server) as enabled or disabled.
Enable: Time information is retrieved from the NTP server.
Disable: Time information is not retrieved from the NTP server.

NTP server address:
Specify the NTP server's address here.

Time Zone (GMT):
Select the local time zone from the drop-down list. (GMT -12:00 to GMT +13:00)
For example, Japan time is +09:00

Date (MM/DD/YYYY):
This sets the current date in MM/DD/YYYY format.

Time (HH:MM:SS):
This sets the current time in HH:MM:SS (24-hour display) format.

Load PC date time button
The time set to PC is loaded.

<2> Submit button
This button is used to confirm settings.

Window image

Date and Time setup window
(5) Event Notification setup window(SMTP)

Function
An administrator can use this window to set the destination to notify the Autoloader information via email.

Information
<1> Mail server and mail header settings
   SMTP server address
   Specify the mail server's IP address or domain name.
   Sender address:
   A string of up to 64 characters can be used to specify this Autoloader's email address.
   (Default value if omitted: blank)
   Subject:
   A string of up to 64 characters can be used to specify the subject of email sent from the Autoloader.
   (Default value if omitted: blank)

<2> (Mail to:) setting
   Specify the destination email addresses for Autoloader information.
   (Up to four strings of 64 characters each can be specified.)

<3> Notice Level:
   Select one type of event for email notification.
   [Level types]
   "Emergency Only","Over Error","Over Warning","Over Information","Disable"

<4> Send Test mail button
   Click this button to send test email to a registered "Mail to:" address to confirm email notification.

<5> Submit button
   This button is used to confirm each setting.
### Event Notifications setup window (email)

#### Window image

<table>
<thead>
<tr>
<th>SMTP</th>
<th>&lt;1&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Send Setting</strong></td>
<td></td>
</tr>
<tr>
<td>SMTP server address:</td>
<td></td>
</tr>
<tr>
<td>Sender address:</td>
<td></td>
</tr>
<tr>
<td>Subject:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mail To</th>
<th>&lt;2&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notice Level</td>
<td>Address</td>
</tr>
<tr>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>Disable</td>
<td></td>
</tr>
</tbody>
</table>

**Submit**

<table>
<thead>
<tr>
<th>Mail Test</th>
<th>&lt;4&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notice level:</td>
<td></td>
</tr>
</tbody>
</table>

**Send test mail**
(6) Event Notification setup window (SNMP)

[Configure Loader] - [SNMP]  

Administrator

Function

An administrator can use this window to set the destination to notify the Autoloader information via SNMP.

Information

<1> SNMP Enable button

This button is used to switch between SNMP disable and enable Settings.

<2> Agent Setting

These are general settings for SNMP.

Community:
Sets the SNMP's community name. (Up to 32 characters) (Default value: Public)

Name:
Sets the device name. (Up to 32 characters) (Default value: NULL (blank))

Location:
Sets the device's physical location. (Up to 32 characters) (Default value: NULL (blank))

Contact:
Sets contact information. (Up to 64 characters) (Default value: NULL (blank))

SNMPv3 engine ID:

The SNMPv3 Agent's Engine ID may have to be set for the manager.

<3> Submit button

This button is used to confirm settings. When the Submit button is clicked, the entered values are checked and are set when normal.

<4> SNMPv3 User List

Enter the user information that is required to monitor the MIB data on devices accessed by the Manager using the SNMPv3 protocol. The user names registered here are used to enable execution of snmpget and snmpwalk commands from the SNMPv3 Manager.

<5> Trap to

Enter the addresses to be notified via SNMP trap when the specified event occurs in the Autoloader.

<6> Trap Test button

Click this button to send a test trap for confirmation of SNMP notification, to the addresses registered under “Trap To”. 
Window image

**SNMP**

**SNMP Setting**

- SNMP Enabled

**Agent Setting**

- Community: public
- Name:
- Location:
- Contact:
- SNMPv3 engine ID: 80 00 00 77 03 00 30 13 D3 EA 2C

**Submit**

**SNMPv3 User List**

<table>
<thead>
<tr>
<th>Validity</th>
<th>User name</th>
<th>Authentication</th>
<th>Privacy</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>disable</td>
<td>disable</td>
<td>disable</td>
<td></td>
<td>modify</td>
</tr>
<tr>
<td>disable</td>
<td>disable</td>
<td>disable</td>
<td></td>
<td>modify</td>
</tr>
<tr>
<td>disable</td>
<td>disable</td>
<td>disable</td>
<td></td>
<td>modify</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Trap To**

<table>
<thead>
<tr>
<th>Notice level</th>
<th>Address</th>
<th>Version</th>
<th>Type</th>
<th>Community</th>
<th>User name</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>disable</td>
<td></td>
<td>v1</td>
<td>trap</td>
<td></td>
<td>modify</td>
<td></td>
</tr>
<tr>
<td>disable</td>
<td></td>
<td>v1</td>
<td>trap</td>
<td></td>
<td>modify</td>
<td></td>
</tr>
<tr>
<td>disable</td>
<td></td>
<td>v1</td>
<td>trap</td>
<td></td>
<td>modify</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Trap Test**

Notice level: Emergency

Send test trap

**Event Notifications setup window (SNMP)**

When clicking modify button (SNMPv3 User List), following screen is displayed. After setting “User name”, “Authentication” and “Privacy”, click "Submit" to register a new user. In setting Authentication or Privacy, a password is needed. Set Validity to Enable to make the user who registered effective.
When clicking modify button (Trap To), following screen is displayed. After setting “Address”, “User name”, “Authentication” and “Privacy”, click “Submit” to register a trap list. In setting Authentication or Privacy, a password is needed. Set Notice level at the levels other than Disable to enable to make the trap list who registered effective. Moreover, Version of SNMP can be set. It corresponds in Version: V2c/V3 and it is possible to correspond to inform by checking the check box on the side of the item of Version at the setting.

![Modify a SNMP Trap 1](image)

<table>
<thead>
<tr>
<th>Notice level:</th>
<th>Disable ▼</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>▼</td>
</tr>
<tr>
<td>Version:</td>
<td>V1 □</td>
</tr>
<tr>
<td>Community:</td>
<td>□</td>
</tr>
<tr>
<td>User name:</td>
<td>□</td>
</tr>
<tr>
<td>Authentication:</td>
<td>□</td>
</tr>
<tr>
<td>Authentication password:</td>
<td>□</td>
</tr>
<tr>
<td>Confirm:</td>
<td>□</td>
</tr>
<tr>
<td>Privacy:</td>
<td>□</td>
</tr>
<tr>
<td>Privacy password:</td>
<td>□</td>
</tr>
<tr>
<td>Confirm:</td>
<td>□</td>
</tr>
</tbody>
</table>
(7) Save the File Setting / Restore window

[Configure Loader] - [Save/Restore]

Function
This window is used to save a present setting value and restore the saved set value.
The setting of the device can be succeeded by restoring the data saved when the device is exchanged to a new device.

Information

<1> Download button
Save a present set value of the autoloader.

<2> Refer button
Select the setting file.

<3> Restore button:
Restore the selected file.
5.8.5 Autoloader Maintenance (Service Loader)

(1) Autoloader Event Log (View Loader Logs) Window

[Service Loader] - [View Loader Logs]  Administrator

Function
Display the log of autoloader event.

Display contents
<1> Select view Log
Select the displayed log.
(Command log / Error log / Retry log / Mechanical Motion log / Event log)

<2> Refresh Button
Will read the current information of this page.

<3> Filter
You can filter the log event depending upon "Index", "Date Time" and "CDB:".

<4> Index List
The auto log event the 000 is the newest log in the datewise log entry.

Window image

View Loader Logs Window
(2) Download Loader Logs

[Service Loader] - [Download Loader Logs]

Function

This downloads the autoloader’s logs and the drive’s logs. Click the [Download] button to download these logs.

In the case of download of the drive’s log, the drive becomes offline.

Information

<1> Download button

Click this button to start downloading the logs. When downloading is completed, a dialog box will appear.

Window image

![Download Logs window](image_url)
(3) Reset Loader / Drive Window

[Service Loader] - [Reset Loader / Drive] Administrator

Function
Reset the library or drive.

Display contents
<1> Select Reset Device
Select "Loader" or "Drive".

<2> Execute Reset
After selecting the "Target device", clicking this button will reset the device.
Complete dialogue is displayed after the completion of reset command.

Window image
<1> Reset Loader / Drive

Select Reset Device
Target device: Not selected  Execute Reset <2>

Device Status
Loader:  Ready
Drive:  Empty
(4) Firmware Refresh Screen (Firmware Update) Window

Function
The firmware update of autoloader or drive is done.

Display contents
<1> Loader Firmware Update
   Select "Loader firmware file".
   The file designation is only possible by clicking the "Browse" Button.

<2> Update Button
   Clicking "Update" Button will start the firmware update process.

<3> Drive Firmware Update
   Select "Drive firmware file".
   The file designation is only possible by clicking the "Browse" Button.

<4> Update Button
   Clicking "Update" Button will start the firmware update process.

Window image

```
<table>
<thead>
<tr>
<th>Function</th>
<th>Current version: 0006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firmware file</td>
<td></td>
</tr>
<tr>
<td>Update Button</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Function</th>
<th>Current drive: IBM ULTRIUM-H17 (8AS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current version:</td>
<td>G055</td>
</tr>
<tr>
<td>Drive firmware file (*) vs:</td>
<td></td>
</tr>
<tr>
<td>Update Button</td>
<td></td>
</tr>
</tbody>
</table>
```
5.9 Event List

A list of events reported by SNMP and email is provided for reference.
The text strings displayed may vary slightly according to the Firmware Revision.

Table 5-1  Event List

<table>
<thead>
<tr>
<th>Event</th>
<th>Event level</th>
<th>Description of message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto loader error</td>
<td>Fatal error</td>
<td>ACCESSOR Broken CHK=XXXX *1</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>ACCESSOR Warning CHK=XXXX *1</td>
</tr>
<tr>
<td>Drive error</td>
<td>Fatal error</td>
<td>DRIVE01 Broken CHK=XXXX *2</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>DRIVE01 Warning CHK=XXXX *2</td>
</tr>
<tr>
<td>Cleaning cartridge exchange request</td>
<td>Warning, 4</td>
<td>ACCESSOR Exchange Cleaning Cartridge</td>
</tr>
<tr>
<td>Autoloader maintenance request</td>
<td>Warning, 4</td>
<td>ACCESSOR Library Maintenance</td>
</tr>
<tr>
<td>Cleaning request received from drive</td>
<td>Warning, 4</td>
<td>DRIVE01 Cleaning Request</td>
</tr>
<tr>
<td>Start inventory</td>
<td>Info, 5</td>
<td>ACCESSOR Inventory</td>
</tr>
<tr>
<td>Change Autoloader operation mode</td>
<td>Info, 5</td>
<td>ACCESSOR Mode Change to RANDOM or ACCESSOR Mode Change to SEQUENTIAL</td>
</tr>
<tr>
<td>Start cartridge move</td>
<td>Info, 5</td>
<td>ACCESSOR Move Start XXXX to YYYY *3 *4</td>
</tr>
<tr>
<td>End cartridge move</td>
<td>Info, 5</td>
<td>ACCESSOR Move Complete XXXX to YYYY *3 *4</td>
</tr>
<tr>
<td>Set Autoloader to Not Ready status</td>
<td>Info, 5</td>
<td>ACCESSOR Not Ready</td>
</tr>
<tr>
<td>Set drive to Not Ready status</td>
<td>Info, 5</td>
<td>DRIVE01 Not Ready</td>
</tr>
<tr>
<td>Set Autoloader to online status</td>
<td>Info, 5</td>
<td>ACCESSOR Online</td>
</tr>
<tr>
<td>Set drive to online status</td>
<td>Info, 5</td>
<td>DRIVE01 Online</td>
</tr>
<tr>
<td>Execute magazine unlock</td>
<td>Info, 5</td>
<td>ACCESSOR Magazine Unlock</td>
</tr>
<tr>
<td>Execute I/O Station unlock</td>
<td>Info, 5</td>
<td>ACCESSOR I/O Station Unlock</td>
</tr>
<tr>
<td>Start auto cleaning</td>
<td>Info, 5</td>
<td>Auto Cleaning Start</td>
</tr>
<tr>
<td>End auto cleaning</td>
<td>Info, 5</td>
<td>Auto Cleaning Complete</td>
</tr>
</tbody>
</table>

Notes:
*1  XXXX: Accessor error code
*2  XXXX: Drive error code
*3  XXXX: Source element, YYYY: Destination element
*4  Element name is stored as “Slot??” (magazine slot), “Drive?” (drive), or “Accessor” (Accessor).
Chapter 6  Cartridges

This chapter describes handling of the cartridges used by the Autoloader, and how they are used.

6.1 Cartridges

The various parts of the data cartridge are outlined below.

Figure 6-1  Names of Cartridge Parts

- Insertion guide
- Insertion direction mark
- Leader pin
- Cartridge door (shown here as open)
- Write protection switch
- Label attachment area
6.1.1 Data cartridges

For the LTO Ultrium 5 drive, Ultrium 3, 4, or 5 cartridges with uncompressed capacities of 400, 800, and 1500 GB can be used respectively.

For the LTO Ultrium 6 drive, Ultrium 4, 5, or 6 cartridges with uncompressed capacities of 800, 1500, and 2500 GB can be used respectively.

For the LTO Ultrium 7 drive, Ultrium 5, 6, or 7 cartridges with uncompressed capacities of 1500, 2500, and 6000 GB can be used respectively.

Caution:

Note that the cartridges that can be used with the LTO Ultrium 5, LTO Ultrium 6 and LTO Ultrium 7 drives vary according to the product generation. See the table below for details.

Table 6-1 Drive/Cartridge Compatibility

<table>
<thead>
<tr>
<th>Drive</th>
<th>LTO Ultrium2</th>
<th>LTO Ultrium3</th>
<th>LTO Ultrium4</th>
<th>LTO Ultrium5</th>
<th>LTO Ultrium6</th>
<th>LTO Ultrium7</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTO Ultrium5</td>
<td>x</td>
<td>✓*</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>LTO Ultrium6</td>
<td>x</td>
<td>x</td>
<td>✓*</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>LTO Ultrium7</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>✓*</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

✓: Can be used  ✓*: Not writeable (read only)  ×: Cannot be used

The cartridge door helps keep the cartridge clean when it is removed from the drive.

The write protection switch prevents data from being written onto a data cartridge.

The label attachment area is where the labels are attached. Attach the label within the recessed attachment area. If the label protrudes beyond this area, problems may occur when loading the cartridge into the internal drive.

6.1.2 WORM cartridges

WORM (Write Once Read Many) type data cartridges are recordable but non-rewritable. As opposed to ordinary data cartridges that can be written to and read from multiple times, it is not possible to overwrite or erase data that has been recorded onto a WORM cartridge.

6.1.3 Cleaning cartridges

These are cartridges that are used to clean within a drive.

Cleaning cartridges can be used up to 50 times.

Keep track of how many times the cleaning cartridge is used, and replace it after 50 times.

For description of cleaning methods, see “7.1 Cleaning”.

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6.2 Cartridge label

If a bar code label is not attached, it is recommended that a label be attached, such as shown in Figure 6-2 below, so that descriptions and dates of files backed up to the data cartridge can be recorded for easy reference.

![Label Attachment Area](image)

Note the following precautions concerning labels to be attached.

- The labels used for descriptions of data cartridge contents should be easy to peel off and should not leave any adhesive residue on the label attachment area after being removed.
- When changing descriptions on labels, do not use an eraser. Instead, replace the label (Index labels are included in the data cartridges).
- When attaching labels, attach them precisely and firmly in the attachment area. When replacing a label, remove the old label before attaching a new one.
- When using labels other than the supplied index labels, select labels that do not leave any adhesive residue and are the correct size.
6.3 Write Protection

The following describes how to set the write protection switch on cartridges.

The write protection switch can be used to protect data stored in cartridges by preventing overwrites. Set the switch after writing data that should not be erased, so that it cannot be overwritten. The position of the write protection switch is the same on all cartridges, but the mark displayed on the switch may vary among different cartridges. For details, see the user's manual for the particular cartridge.

Figure 6-3 Cartridge Write Protection

![Write protection switch](image)

Write prohibited

Write enabled

Write prohibited

Write enabled
6.4 Handling Precautions

The following are caution points to be noted when handling data cartridges.

6.4.1 Use Precautions

- Before using cartridges
  - Open the cartridge door and make sure that the leader pin is affixed.
  - Check the data cartridge to be used, making sure that it has not been dented, bent, or otherwise damaged. Do not use damaged cartridges.
  - Before using a data cartridge that has been stored in a temperature and humidity condition outside the device's recommended range of use, wait until the use temperature/humidity conditions meet (up to 24 hours) the use environment before using the cartridge. If there is a large temperature difference between the storage site and the use site, do not move the cartridge immediately into the use site. Instead, keep the rate of temperature change within about 10°C per hour, so that the data cartridge can gradually become accustomed to the temperature in the use environment.

- Insertion of cartridge into magazine and fixed slots
  Insert the data cartridge firmly. Close the protective case of the inserted data cartridge, and store them in a relatively dust-free environment.

- After use
  Always keep used cartridges in their protective cases and store them in a relatively dust-free environment. When stored, they can be positioned either vertically or horizontally.

- Disposal
  When disposing of cartridges, observe all relevant local bylaws on product disposal.

6.4.2 General precautions

- Do not touch the tape (magnetic surface) in the cartridge.
- Do not place cartridges near magnetic objects.
- Do not leave cartridges in direct sunlight or near air conditioners or heaters.
- Do not apply strong impact to cartridges.
- Do not handle cartridges while eating, drinking, or smoking. Also, do not expose them to paint thinner, alcohol, etc.
- Always keep individual cartridges in their cases when storing them.
- Insert cartridges into the magazine gently and precisely.
- Data cartridges are sensitive to dirt and dust, so always keep them in their protective cases and store them in a relatively dust-free environment. When stored, they can be positioned either vertically or horizontally.
- If a cartridge has become dirty or dusty, wipe it off gently using a soft cloth. Errors may occur if a dirty or dusty cartridge is used.
6.4.3 Endurance

The endurance of a data cartridge depends in part on its use environment. Please refer to the following (since product life may be shortened depending on use environment factors such as temperature, humidity, and dust).

- Make a record of data cartridge control numbers, recording each data cartridge’s usage dates in order to estimate the number of years and the number of times that the cartridge has been used.
- Periodically check the data cartridge records and the cartridge labels, and if they indicate that the data cartridge at hand has been used for so long that write or read errors may occur due to degraded reliability, dispose of the data cartridge.

6.4.4 Cartridge storage

- Maintain the proper storage conditions, and keep the storage area clean.
- Write protection should be set for cartridges put into storage.
- If a cartridge is being stored for a long time, the cartridge should be read periodically to confirm that the backup data remains recoverable.
- To help ensure safe storage, store cartridges in a location that is far removed from the system in which the cartridges are used.
Chapter 7  Maintenance

7.1  Cleaning

Cleaning should be performed about once a month.
However, for Autoloaders that are used frequently, cleaning should be performed about once every 100 hours of backup time.

7.1.1  Auto cleaning

Caution:
Before using the auto cleaning function, make sure that the backup software supports auto cleaning.
If the backup software does not support the function, turn OFF the auto cleaning function.

The auto cleaning function enables the Autoloader to automatically clean drives that require cleaning.
Be sure to insert the cleaning cartridge into an unused slot.
When the auto cleaning function is on and the drive requests cleaning, the Accessor removes the cleaning cartridge from the unused slot and loads it into the drive. When cleaning is finished, it returns the cartridge to the same unused slot.

7.1.2  Use of operation panel to set cleaning

Before using the operation panel to set cleaning, make sure that the backup software will not be executing any jobs during the cleaning process. (If necessary, take measures such as turning off the backup software service.)

Caution:
- Use a special cleaning cartridge with a bar code label that supports the drive to be cleaned.
- Each cleaning cartridge can be used up to 50 times.
  Record the number of use, and when 50 times is reached, replace the cleaning cartridge.
  The drive will not be cleaned even if the cleaning cartridge being used has exceeded its service life.
- Manual cleaning should be performed only when there are no backup software jobs being executed.
- Before cleaning, make sure there is no cartridge in the drive.

1) Make sure that the cleaning cartridge is the right kind for the drive to be cleaned, and check the number of times it has been used.
2) Remove the magazine, and set the cleaning cartridge into the slot.

3) From [COMMANDS], select [CLEAN DRIVE].

4) Once [CLEAN DRIVE] is selected, a cleaning confirmation message will appear. Press the button. The light will blink as cleaning starts.

After cleaning is completed, the cleaning cartridge is returned to its slot.

5) Remove the magazine, and then remove the cleaning cartridge.

7.2 Cleaning of Magazine Filter
The Autoloader magazine includes a filter that helps keep dirt and dust from entering the Autoloader. This filter should be cleaned about once a year to prevent clogging.

Use a vacuum cleaner or a similar tool to remove dirt and dust from the bezel section of the magazine. Lightly press the vacuum hose's nozzle against the holes in the magazine's bezel section. Slide the vacuum hose's nozzle in the directions shown by the arrows below. Repeat three times for each direction shown by the arrows.

Figure 7-1 Magazine Filter Cleaning

Magazine's bezel holes
Chapter 8  Troubleshooting

Caution:
In the unlikely event that smoke, strange odors or strange sounds are emitted from this device, turn its power switch off immediately, then pull the power plug from the socket. Continued use under such conditions may cause fire. If this device breaks down or becomes damaged, use the power switch to turn off the Autoloader, then pull the power plug from the socket.
Note that turning off the Autoloader’s power while it is operating may result in loss of data.

Refer to the brief troubleshooting guidelines listed in Table 8-1 to check parts of the Autoloader as described below.

Table 8-1  Troubleshooting Table

<table>
<thead>
<tr>
<th>Problem</th>
<th>Response</th>
</tr>
</thead>
</table>
| Autoloader’s power will not turn on. Nothing is displayed on the operation panel. | 1. Make sure all of the Autoloader’s power switches are set to the on position ( | ).  
2. Check all of the power cord connections.  
3. Make sure power is flowing to the outlet. |
| Drive cleaning has been repeatedly requested or indicated.   | 1. Replace the cleaning cartridge with a new one, and then perform cleaning. |
| A cartridge is caught in the drive or Accessor.              | 1. Check the error code.  
2. Contact NEC’s maintenance staff. |
| Cartridge does not eject from the drive.                     | 1. Refer to “4.7.2 Unloading from the drive” while removing the cartridge from the drive. |
| Autoloader’s slot cannot be used.                            | 1. Refer to “4.4.4(1) CONFIGURE LIBRARY menu” while checking the number of slots. |
| Error LED is lit.                                            | 1. Check which error code is shown on the operation panel.  
2. Contact NEC’s maintenance staff. |

8.1 When to ask for maintenance

Before calling maintenance to ask for repair or replacement of parts, write down the information shown on the LCD screen. Such information may be useful when performing maintenance.
Appendix A Specifications

A.1 Autoloader

Maximum data storage capacity:
- 13.5TB (27.0 TB *1) When using Ultrium 5
- 22.5TB (56.25 TB *1) When using Ultrium 6
- 54.0TB (135.0 TB *1) When using Ultrium 7

Drive:
- 1 (equipped)

No. of mounted cartridges:
- Up to 9

Interface:
- 6Gbps SAS

External dimensions:
- 483 (W) × 43.65 (H) × 850 (D) mm (rack mount type)

Weight:
- 13 kg (rack mount type)

Data transfer rate:
- 140 MB/s (uncompressed),
- 280 MB/s (compressed)
  When using Ultrium 5
- 160 MB/s (uncompressed),
- 400 MB/s (compressed)
  When using Ultrium 6
- 300 MB/s (uncompressed),
- 600 MB/s (compressed)
  When using Ultrium 7

Supply voltage:
- AC 100-240 V

Frequency:
- 50/60 Hz

Power consumption (max):
- 110 W

Noise:
- When idle: 57 dBA
- When operating: 59 dBA

Environmental conditions

[When operating]
- Ambient temperature: 10°C to 40°C
- Relative humidity: 20% to 80%
- Maximum wet-bulb temperature: 26°C

[When not operating *2]
- Ambient temperature: -30°C to 60°C
- Relative humidity: 10% to 90%
- Maximum wet-bulb temperature: 26°C

[During shipment *3]
- Ambient temperature: -23°C to 49°C
- Relative humidity: 20% to 80%
- Maximum wet-bulb temperature: 26°C
*1 During 2x compression, 2.5x compression(LTO6/LTO7)
*2 Not including cartridge
*3 Including cartridge

A.2 Data Cartridge

Maximum data storage capacity
- When using Ultrium5: 1500 GB (compressed: 3000 GB)
- When using Ultrium6: 2500 GB (compressed: 6250 GB)
- When using Ultrium7: 6000 GB (compressed: 15000 GB)

Environmental conditions
[When operating]
- Ambient temperature: 10°C to 45°C
- Relative humidity: 20% to 80%
- Maximum wet-bulb temperature: 26°C

[During storage]
- Ambient temperature: 16°C to 32°C
- Relative humidity: 20% to 80%
- Maximum wet-bulb temperature: 26°C

A.3 Cleaning Cartridge

Cleaning cartridges can be used up to 50 times.
Keep track of how many times each cleaning cartridge is used, and replace it after 50 times.

Environmental conditions
Same as data cartridge.
Appendix B Error Codes

B.1 Autoloader Error Code List

If the following responses to errors are not effective, contact the NEC maintenance staff.
An error LED lights when an error has occurred.

<table>
<thead>
<tr>
<th>Code</th>
<th>Meaning</th>
<th>Response to error</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000 to 0008</td>
<td>Initial diagnostic error following power-on</td>
<td>&lt;1&gt; Turn the power off and on again.</td>
</tr>
<tr>
<td>0009</td>
<td>The accessor locking screw is not removed.</td>
<td>&lt;1&gt; Remove the accessor locking screw.</td>
</tr>
</tbody>
</table>
| 000A      | The drive's temperature limits are exceeded.     | <1> Check the environment temperature.  
|           |                                                   | <2> Check the condition of air filter and exhaust aperture. |
| 0010      | Failure to obtain information from DHCP server.  | <1> Check the server.  
|           |                                                   | <2> Check the DHCP settings.  
|           |                                                   | <3> Check the LAN cable connections.  
|           |                                                   | <4> Turn the power off and on again.                    |
| 0011      | Failed to obtain time from time server.          | <1> Check the server.  
|           |                                                   | <2> Check the NTP settings.  
|           |                                                   | <3> Check the LAN cable connections.  
|           |                                                   | <4> Turn the power off and on again.                    |
| 0020 to 002F | Communication error between the drive  
|           | and controller board                             | <1> Turn the power off and on again.                    |
| 0040      | Media error was detected when loading cartridge in drive | <1> Check the cartridge.                              |
| 0041      | Hardware error was detected when loading cartridge in drive | <1> Check the cartridge.  
|           |                                                   | <2> Turn the power off and on again.                    |
| 0042      | Load timeout occurred when loading cartridge in drive | <1> Check the cartridge.  
|           |                                                   | <2> Turn the power off and on again.                    |
| 0044      | An expired medium was loaded in the drive.       | <1> Exchange cleaning medium.                          |
| 0053 to 005F | Barcode-related error                            | <1> Turn the power off and on again.                    |
| 0071      | Cannot execute calibration because magazine is not inserted. | <1> Insert magazine.                                  
|           |                                                   | <2> Turn the power off and on again.                    |
| 0072      | Defect in calibration data.                      | <1> Turn the power off and on again.                    |
| 0074 to 00C0 | Accessor-related error                           | <1> Check the cartridge.  
|           |                                                   | <2> Check the magazine.  
|           |                                                   | <3> Turn the power off and on again.                    |
| 00D0 to 00FB | Controller board-related error                   | <1> Turn the power off and on again.                    |
| 0200 to 020F | Drive access error                              | <1> Check the cartridge in drive.  
|           |                                                   | <2> Turn the power off and on again.                    |
| 0222      | Cartridge cannot be removed because the drive status is Prevent Medium Removal. | <1> From the host, clear the Prevent Medium Removal setting.  
|           |                                                   | <2> Turn the power off and on again.                    |


### B.2 Drive Error Codes

The ERROR LED is lit when a drive error has occurred.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No errors</td>
</tr>
<tr>
<td></td>
<td>This code is displayed in the following cases.</td>
</tr>
<tr>
<td></td>
<td>When cartridge drive’s power supply status goes from off to on</td>
</tr>
<tr>
<td></td>
<td>When diagnostics ends normally</td>
</tr>
<tr>
<td></td>
<td><strong>Caution: The single character blinks when the cartridge drive is operating normally.</strong></td>
</tr>
<tr>
<td>1</td>
<td>Cooling problem</td>
</tr>
<tr>
<td></td>
<td>The cartridge drive has been detected as exceeding the recommended temperature range.</td>
</tr>
<tr>
<td>2</td>
<td>Power supply problem</td>
</tr>
<tr>
<td></td>
<td>External power supply has been detected as either approaching the recommended voltage limit (while drive is operating) or exceeding the recommended voltage limit (while drive is not operating).</td>
</tr>
<tr>
<td>3</td>
<td>Firmware problem</td>
</tr>
<tr>
<td></td>
<td>Check whether the cartridge drive has detected a firmware error.</td>
</tr>
<tr>
<td>4</td>
<td>Firmware or cartridge drive problem</td>
</tr>
<tr>
<td></td>
<td>Check whether the cartridge drive has detected a firmware or cartridge drive hardware fault.</td>
</tr>
<tr>
<td>5</td>
<td>Cartridge drive hardware problem</td>
</tr>
<tr>
<td></td>
<td>Check whether the cartridge drive has detected a cartridge drive hardware error, cartridge pass error, or read/write error.</td>
</tr>
<tr>
<td></td>
<td>To protect the drive and/or cartridge from damage, once the cartridge is ejected, do not insert a new cartridge.</td>
</tr>
<tr>
<td>6</td>
<td>Cartridge drive/media error</td>
</tr>
<tr>
<td></td>
<td>It has been confirmed that the drive has detected an error, but it is impossible to tell whether the cause is in the hardware or the cartridge.</td>
</tr>
<tr>
<td>7</td>
<td>Media error (occurs often)</td>
</tr>
<tr>
<td></td>
<td>Check whether the cartridge drive has detected an error caused by a cartridge defect.</td>
</tr>
<tr>
<td>8</td>
<td>Cartridge drive /SCSI bus error</td>
</tr>
<tr>
<td></td>
<td>Check whether the cartridge drive has detected an error in the cartridge drive hardware or the SCSI bus.</td>
</tr>
<tr>
<td>9</td>
<td>Cartridge drive/RS-422 error</td>
</tr>
<tr>
<td></td>
<td>Check whether the cartridge drive has detected an error in the cartridge drive hardware or the RS-422 connection.</td>
</tr>
<tr>
<td>A</td>
<td>Cartridge drive hardware problem</td>
</tr>
<tr>
<td></td>
<td>It has been confirmed that the cartridge drive's operation has been degraded, but the drive can be continuously used.</td>
</tr>
<tr>
<td>C</td>
<td>Cleaning required</td>
</tr>
<tr>
<td>E</td>
<td>Information message</td>
</tr>
<tr>
<td></td>
<td>The cartridge drive's SAS port is offline.</td>
</tr>
<tr>
<td>F</td>
<td>Drive of Fiber Channel Error – NO LIGHT</td>
</tr>
<tr>
<td>J</td>
<td>Media that the drive cannot execute commands on has been loaded</td>
</tr>
<tr>
<td>P</td>
<td>Write operation to a write protected cartridge has been attempted</td>
</tr>
<tr>
<td>e</td>
<td>The drive detected a configuration or set-up error prior to an encryption operation. A problem may exist with the key manager communication path.</td>
</tr>
<tr>
<td></td>
<td>If this error appears immediately after power-on, there is a hardware failure or the necessary cryptographic certificate is missing or corrupted – drive replacement is required for this case only.</td>
</tr>
<tr>
<td>u</td>
<td>The drive is in the process of uploading and flashing new Firmware</td>
</tr>
</tbody>
</table>
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