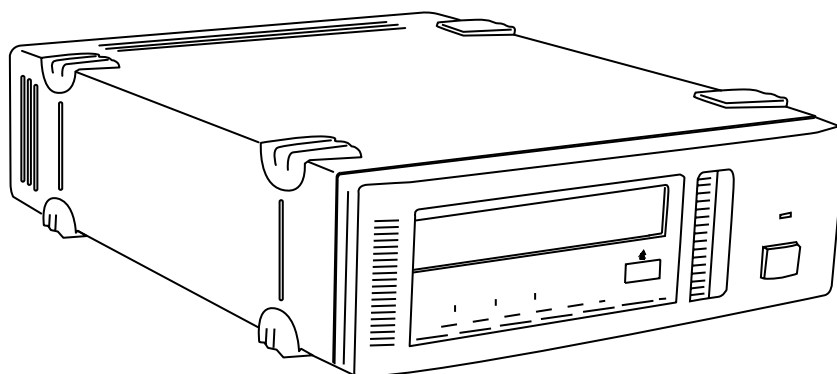


SDX-D700C/D500C/D400C

AIT Drive Unit



Operator's Guide

Safety Regulations

Owner's Record

The model and serial numbers are located on the bottom. Record the serial number in the space provided below.

Refer to them whenever you call upon your dealer regarding this product.

Model No.

Serial No.

Information

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

For the customers in the USA

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

WARNING

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

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

This device requires shielded interface cables to comply with FCC emission limits.

CAUTION

The mains plug on this equipment must be used to disconnect mains power. Please ensure that the socket outlet is installed near the equipment and shall be easily accessible.

ACHTUNG

Zur Trennung vom Netz ist der Netzseker aus der Steckdose zu ziehen, welche sich in der Nähe des Gerätes befinden muß und leicht zugänglich sein soll.

Hinweis: Der höchste Schalldruckpegel beträgt 70 db (A) oder weniger gemäß ISO 7779

NOTICE

Use the power cord set approved by the appropriate testing organization for the specific countries where this unit is to be used.

HINWEIS

Ausserhalb den USA und Kanada das Netzkabel verwenden, das von der dafür anerkannten testorganisation oder zuständigen Behörde des Landes, in das Gerät betrieben wird, zugelassen ist.

If you have any questions about this product, call the Sony Technical Support at 1-800- 352-7669 or write to: Sony Technical Support, 3300 Zanker Road, San Jose, CA 95134.

DECLARATION OF CONFORMITY

Trade Name: SONY
Model: SDX-D700C/D500C/D400C
Responsible Party: Sony Electronics Inc.
Address: 680 Kinderkamack Road, Oradell NJ
07649 USA
Telephone number: 201-930-6972

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

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

Diese Ausrüstung erfüllt die Europäischen EMC-Bestimmungen für die Verwendung in folgender/folgenden Umgebung(en):

- Wohngegenden
- Gewerbegebiete
- Leichtindustrialgebiete

(Diese Ausrüstung erfüllt die Bestimmungen der Norm EN 55022, Klasse B.)

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B情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に接近して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。

이 기기는 가정용으로 전자파 적합등록을 한 기기로서
주거지역에서는 물론 모든 지역에서 사용할 수 있습니다.

Table of Contents

	How to Use this Guide	5
Part 1. Introduction	About AIT Drives	6
	Features	6
	Useable Cartridges	7
	System Components	7
	Part Names and Functions	8
	Front Panel (SDX-D500C/D400C)	8
	Front Panel (SDX-D700C)	9
	Rear Panel	10
Part 2. Preparation	Supplied Items	11
	Interconnections	11
	SCSI ID Setting	12
	Option Switches (DIP Switch)	12
Part 3. Operation	How to use the AIT Drive	14
	Cartridge Removal	15
Part 4. Care and Maintenance	Taking Care of the Drive	16
	Safety Considerations	16
	Avoiding Damage	16
	Taking Care of Cartridges	18
	Use Precautions	18
	Storage Precautions	18
	Head Cleaning	19
	How to Clean	19
Appendix	Specifications (SDX-D700C)	20
	Specifications (SDX-D500C)	21
	Specifications (SDX-D400C)	22

How to Use this Guide

This Guide describes the AIT Drive Unit SDX-D700C/D500C/D400C, and how to take care of it. Please read it carefully before using the unit, and keep it handy for future reference.

The Guide consists of four parts, plus the specifications. Refer to the parts that relate to your use of the drive.

Part 1 describes the features of the drive, its system components, and the name and function of each part.

Part 2 describes the necessary connections between the drive and the host computer. If other SCSI devices are being used, you may need to change the SCSI ID setting. Read this part if you are installing the drive.

Part 3 describes how to use the drive, including how to turn it on, and how to insert and remove cartridges. Read this part if you are going to operate the drive.

Part 4 describes how to take care of the drive and cartridges, and how to clean the drive heads. Read this part before using the drive.

The Specifications Appendix provides the major specifications of the SDX-D700C/D500C/D400C.

Part 1. Introduction

About AIT Drives

The SDX-D700C is an external AIT drive unit that uses data cartridges conforming to the AIT-3 format. The SDX-D500C is an external AIT drive unit that uses data cartridges conforming to the AIT-2 format. The SDX-D400C is an external AIT drive unit that uses data cartridges conforming to the AIT-1 format. The SDX-D700C supports AIT-1, AIT-2, and AIT-3 formats. The SDX-D500C supports AIT-1 and AIT-2 formats. The SDX-D400C supports only AIT-1 format.

Features

The AIT Drive Unit SDX-D700C has the following features:

- The Advanced Intelligent Tape format provides a huge data storage capacity on AIT-1/AIT-2/AIT-3 data cartridges.
- Read After Write Function and third-level error code guarantee high data reliability.
- Data compression provides 260 gigabytes of storage on 230 m tape-length cartridge.^{*1}
The native capacity is 100 gigabytes of storage on 230 m tape-length cartridge.
- Stored data are automatically checked for compression.
- Ultra 160 SCSI LVD/SE interface is fully supported for host computer access.
- Read/Write operation is available with AIT-1, AIT-2, and AIT-3 formats.

The AIT Drive Unit SDX-D500C has the following features:

- The Advanced Intelligent Tape format provides a huge data storage capacity on AIT-1/AIT-2 data cartridges.
- Read After Write Function and third-level error correction code guarantee high data reliability.
- Data compression provides 130 gigabytes of storage on 230 m tape-length cartridge.^{*1}
The native capacity is 50 gigabytes of storage on 230 m tape-length cartridge.
- Stored data are automatically checked for compression.
- Ultra Wide LVD/SE SCSI interface is fully supported for host computer access.
- Read/Write operation is available with AIT-1 and AIT-2 formats.

^{*1} This is assuming 2.6 : 1 compression ratio.

The degree of data compression attained while recording data varies according to system environment and data type.

The AIT Drive Unit SDX-D400C has the following features:

- The Advanced Intelligent Tape format provides a huge data storage capacity on AIT-1 data cartridges.
- Read After Write Function and third-level error correction code guarantee high data reliability.
- Data compression provides 91 gigabytes of storage on 230 m tape-length cartridge.^{*1}
The native capacity is 35 gigabytes of storage on 230 m tape-length cartridge.
- Stored data are automatically checked for compression.
- Ultra Wide LVD/SE SCSI interface is fully supported for host computer access.
- Read/Write operation is available with AIT-1 format.

^{*1} This is assuming 2.6 : 1 compression ratio.

The degree of data compression attained while recording data varies according to system environment and data type.

Useable Cartridges

Data cartridges used with the SDX-D400C must be marked with the AIT-1, logo. The SDX-D500C can be used with data cartridges marked with AIT-1 or AIT-2 logo. The SDX-D700C can be used with data cartridges marked with the AIT-1, AIT-2, or AIT-3 logo.



Caution

Be sure to use only the cartridges designed specifically for AIT (do not use 8 mm cartridges for video).

System Components

The SDX-D700C/D500C/D400C connects to the host computer via on Ultra Wide LVD/SE SCSI interface.

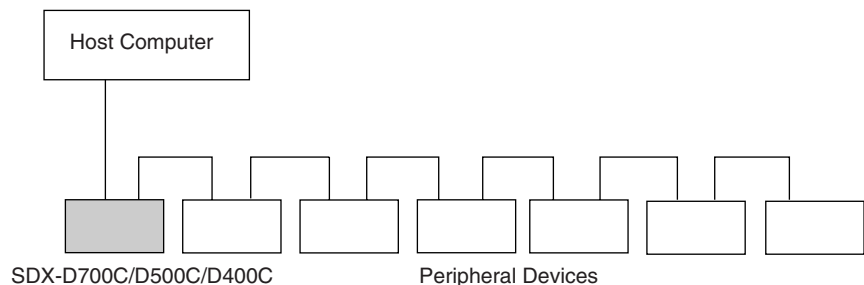


Figure 1-1. Example of System Components

The SDX-D700C can connects to the host computer via a Ultra 160 SCSI interface.

Part Names and Functions

Front Panel (SDX-D500C/D400C)

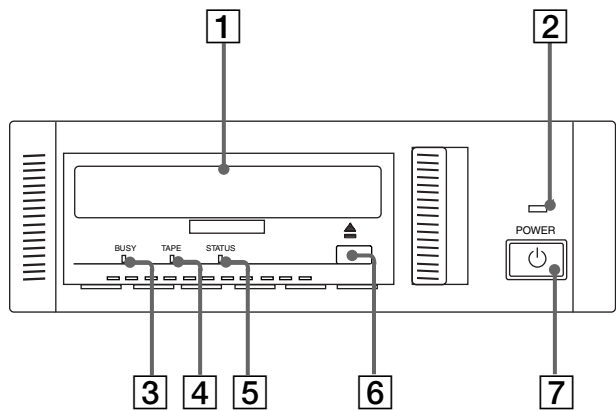


Figure 1-2. Front panel

1 AIT Data Cartridge Receptacle

See page 14 for information on inserting and removing a AIT data cartridge.

2 POWER Indicator

Lights while the drive is on.

3 BUSY Indicator

Lights when data is being transferred through the SCSI interface. This indicator also lights under the following conditions:

Drive is reading or writing normally:	repeated blinking (same on-off interval).
---------------------------------------	---

4 TAPE Indicator

When a AIT cartridge is installed, this indicator lights. This also lights under the following conditions:

Inserting and removing a cartridge:	repeated blinking (same on-off interval).
Cartridge deteriorated:	alternating long-short blinking.

5 STATUS Indicator

Lights when an inserted cartridge is write-protected. This indicator also lights under the following conditions:

Drive needs cleaning:	repeating long-on, short-off blinking.
End of Tape during cleaning:	repeating blinking (same on-off interval).
Drive Malfunctioning:	repeating short-on (once or twice), long-off blinking.

6 EJECT Button

Push to remove a data cartridge from the drive.

7 POWER Switch

Press to turn the drive on or off.

Front Panel (SDX-D700C)

Refer to SDX-D500C/D400C front panel for unmarked parts.

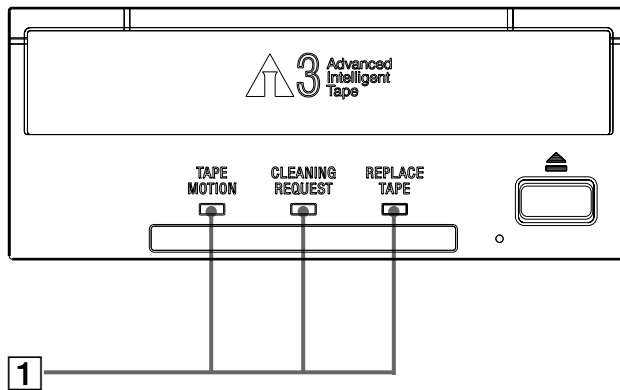


Figure 1-3. Front panel

1 LED

The LED indicate the status of the SDX-D700C as follows.

TAPE MOTION	CLEANING REQUEST	REPLACE TAPE	Meaning
On	-	-	Tape loaded
Slow flash (0.9 sec on/0.3 sec off)	-	-	Read/Write in progress
Fast flash (0.3 sec on/0.3 sec off)	-	-	Other tape access in progress
-	On	-	Cleaning necessary
-	Slow flash (0.9 sec on/0.3 sec off)	-	Cleaning not complete
-	-	On	Media error
Fast flash (0.3 sec on/0.3 sec off)	Fast flash (0.3 sec on/0.3 sec off)	Fast flash (0.3 sec on/0.3 sec off)	Hardware error

Rear Panel

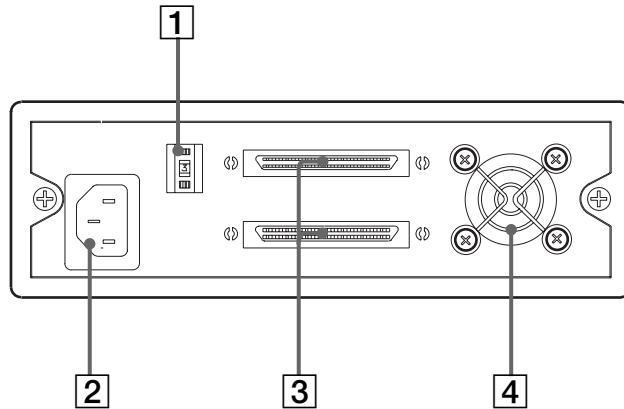


Figure 1-4. Rear Panel

- 1 Rotary Selector Switch**
SCSI ID selector.
- 2 AC IN Connector**
Connect the supplied power cable here.
- 3 SCSI Connector**
Connects to the SCSI bus connector of the host computer or another SCSI peripheral.
- 4 Cooling Fan**

Part 2. Preparation

After you confirm that you have all of the required accessories for your installation, connect the drive to the host computer, and select the SCSI ID with the rotary switch on the rear panel.

Supplied Items

When you first open the box, make sure it contains the following items. Contact your supplier if anything is missing or broken.

- AIT Drive Unit
- Power Cable
- Operator's Guide

Interconnections

The SCSI bus allows connection of up to fifteen peripherals to the host computer. Use a SCSI cable with a half pitch 68 pin connector.

Precautions

- Switch off the host computer and peripherals before connecting the SCSI cable.
- Make sure the SCSI connectors are pressed tightly together.
- If this unit is the last (or only) device on the SCSI bus, make sure to connect a SCSI bus terminator to the open connector.
- The total length of the SCSI cable(s) between the host computer and the last device should be less than 12 meters.*¹

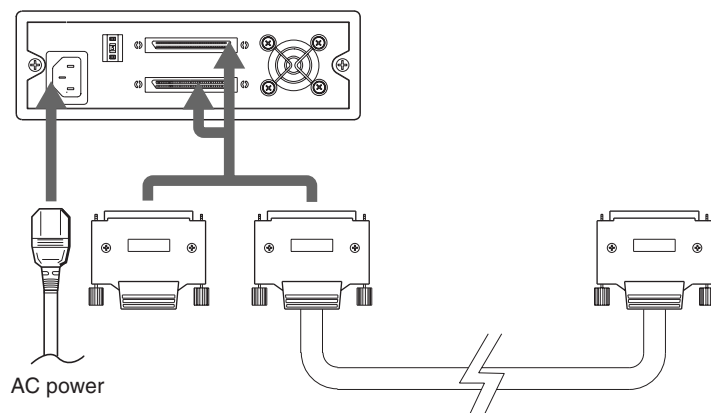


Figure 2-1 Interconnections

*¹ It should be less than 1.5 meters, if connected to single-ended SCSI host adaptor.

SCSI ID Setting

The SCSI ID is set by the rotary switch on the rear panel. Press the + or - buttons to move the number up or down, respectively. As shipped from the factory, the SCSI ID is set to 0. Press the switch buttons, if necessary, to select the SCSI ID number you require.

Precautions

- The SCSI ID must be different from IDs of the other peripherals on the SCSI bus.
- As shipped from the factory, Term power is ON. **A SCSI bus terminator must be connected to the SCSI bus before use.**
- Before changing the SCSI ID setting, be sure to turn off the power with the POWER switch on the front panel.

Option Switches (DIP Switch)

Remove the two slotted screws by using a slotted screwdriver. Remove the access cover to change the DIP switch settings. (Refer to the following figure for details changing the DIP switch settings.)

After changing the DIP switch settings, replace access cover and tighten the two slotted screws using a slotted screwdriver.

CAUTION

Before removing the access cover to change DIP switch settings on the drive, turn off the computer and disconnect the power cord from the unit. Once the DIP switch settings have been changed, replace the access cover using the two original slotted screws provided.

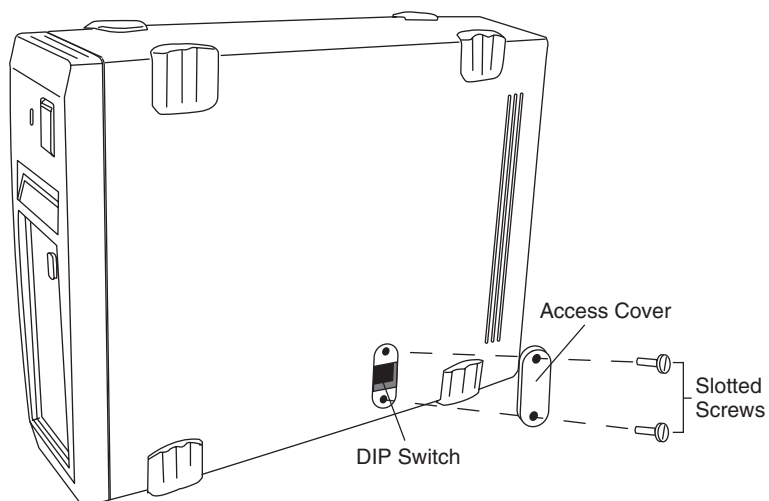


Figure 2-2. DIP Switch Access

DIP Switch Positions

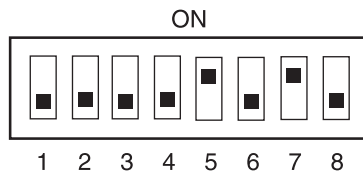


Figure 2-3. DIP Switch Settings

- 1 Reserved (OFF)
- 2 Reserved (OFF)
- 3 Reserved (OFF)
- 4 Reserved (OFF)
- 5 Terminator Power (ON)
- 6 Reserved (OFF)
- 7 DC Control (1) (ON)
- 8 DC Control (2) (OFF)

Data Compression Control DIP Switch

Data compression can be selected by DIP switches. Data compression is enabled while position 7 [DC Control (1)] is ON. Control by host can be disabled when position 8 [DC Control (2)] is ON.

Part 3. Operation

This section describes how to use the AIT drive, and how to handle data cartridges.

How to use the AIT Drive

- 1** Press the POWER switch on the front panel.
The POWER indicator should light, and the STATUS, BUSY and TAPE indicators (with the SDX-D700C, the TAPE MOTION, CLEANING REQUEST, and REPLACE TAPE indicators) should blink as the self-test is performed.
- 2** When the three indicators stop blinking, you can insert a data cartridge as shown below. The TAPE indicator will blink, and if the cartridge is write-protected, the STATUS indicator will light. (With the SDX-D700C, even if the cartridge is write-protected, only the TAPE MOTION indicator lights.)

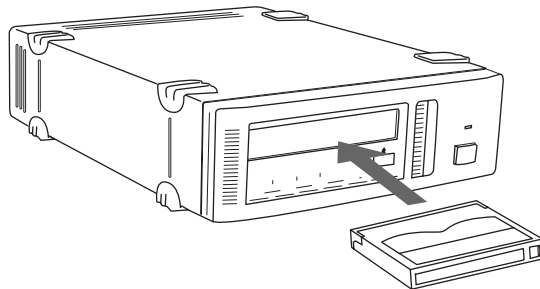


Figure 3-1. Inserting a data cartridge

- 3** Computer software controls the reading and writing of tapes. While reading or writing, the BUSY indicator blinks. (With the SDX-D700C, the TAPE MOTION indicator blinks.)

Cartridge Removal

Press the EJECT button.
The cartridge ejects automatically.

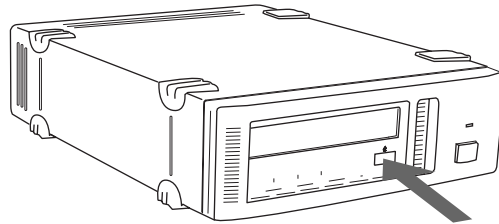


Figure 3-2. Press the EJECT button

Caution

Do not push the EJECT button while the BUSY indicator is blinking (with the SDX-D700C, when the TAPE MOTION indicator is blinking) : to do so may destroy data on the tape.

Part 4. Care and Maintenance

Taking Care of the Drive

Safety Considerations

■ Power

- Be sure to use only 100-240 V AC.
- Avoid plugging into the same outlet as high-current equipment like copiers or shredders.

■ Power Cable Precautions

- Do not crush the cable or place heavy items on it. If the cable insulation appears worn or broken, do not use the cable.
- Always unplug the cable by holding the plug; never pull the cable itself, as it will break.
- If the drive is not being used for a long time, unplug the cable from the outlet.

Avoiding Damage

■ Avoid shock and vibration

Intense shock, such as from dropping the drive, will damage it.

■ Environmental considerations

Do not store or use the drive in locations subject to:

- | | |
|--------------------|---------------------------------|
| • high humidity | • excessive dust |
| • high temperature | • intense vibration |
| • direct sunlight | • sudden changes in temperature |

■ Proper ventilation

To avoid overheating, install the drive where it will have free air circulation around the case, and do not cover it during operation. The drive can malfunction if the internal temperature rises too high.

■ Avoid sudden changes in temperature

If the drive is moved from a cool place to a warm place, or if the room temperature suddenly rises, moisture may condense inside the case. After a sudden change in temperature, wait at least one hour before turning the drive on. If the drive is turned on with condensation inside, and a cartridge is installed, the drive or the tape can be damaged.

■ Abnormal occurrences

If the drive behaves abnormally, or if it begins to smell or smoke, immediately unplug it from the wall outlet and contact your supplier for assistance.

■ Cabinet cleaning

Wipe the cabinet with a soft dry cloth. For heavy dirt, wipe with a soft cloth moistened with a gentle liquid soap, then wipe again with a soft dry cloth. Do not use alcohol, paint thinner, bug sprays or other volatile solvents, as they can damage the finish.

Taking Care of Cartridges

Use Precautions

- Avoid heavy vibration and dropping.
- The shutter on the face of the cartridge is opened automatically when it is inserted into the drive. Do not open the shutter by hand, as touching the tape may damage it.
- The cartridge was carefully aligned during assembly at the factory. Please do not try to open it or take it apart.
- The write-protect switch on the face of the cartridge prevents the tape from being written to or accidentally erased. If you do not need to write to the tape, move this switch to the write-protect position (in the direction of the arrow).

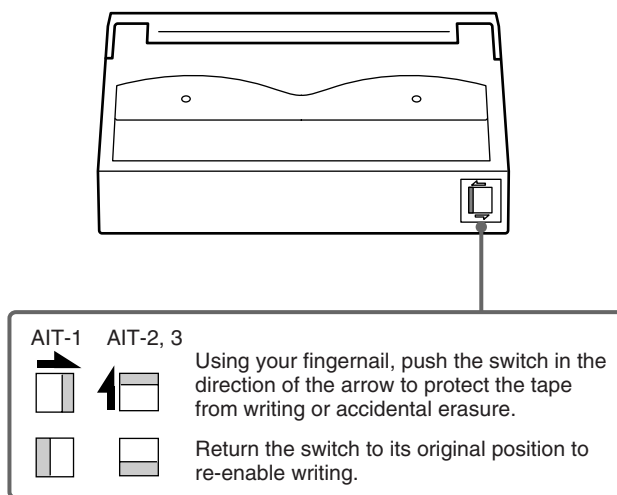


Figure 4-1. Write-protect switch

- In case of a sudden change in temperature, condensation may interfere with reading and writing to a tape.
- Avoid unnecessary insertion and removal of cartridges if you do not need to write or read a tape.
- When finished using the drive, remove the cartridge.

Storage Precautions

- Keep cartridges in their cases when not in the drive.
- Avoid storing cartridges in dusty places, in direct sunlight, near heaters or air conditioners, or in humid locations.
- Do not place cartridges on the dashboard or in a storage tray in a car.

Head Cleaning

To keep the AIT drive in top condition, clean the head as needed, using the proper head cleaning cartridge (sold separately). When the head needs cleaning, the STATUS indicator will blink.

With the SDX-D700C, the CLEANING REQUEST indicator will blink.

How to Clean

- 1** Load the head cleaning cartridge (SDX1-CL) into the AIT drive. Cleaning starts automatically.
- 2** After about 15 seconds, cleaning will stop and the cartridge will eject automatically.
One head cleaning cartridge can be used about 30 times.

Notice

Do not rewind the cleaning cartridge and reuse it. When you reach the end of the cartridge, dispose it and buy a new one.

Specifications (SDX-D700C)

■ Performance

Storage Capacity	260 GB compressed (with 230 m AIT-3 tape) ^{*1} 100 GB uncompressed (with 230 m AIT-3 tape)
Bit Error Rate	less than 10^{-17}
Data Transfer Rate (TAPE)	12 MB/s uncompressed 31.2 MB/s compressed ^{*1}
Burst Data Transfer Rate (SCSI)	12 MB/s maximum, asynchronous 160 MB/s maximum, synchronous
Initialize Time	less than 5 seconds
Load Time	less than 24 seconds
Unload Time	less than 30 seconds
Rewind Time	less than 105 seconds (with 230 m tape)

■ Operating Environment

Operating	Temperature: 10 to 35 °C Humidity: 30 to 80% (no condensation)
Non-Operating	Maximum wet bulb temperature: 26 °C Temperature: -40 to +70 °C Humidity: 10 to 90%

■ Power Supply & Miscellaneous

Power Supply	100 to 240 V AC, 50/60 Hz 1.2 A
Case Dimensions	198 × 64.5 × 246 mm (W × H × D) (excluding protruding parts)
Weight	2.4 kg
Accessories	Power Cable (1) Operator's Guide (1)

Specifications may be subject to change, in the interest of technological improvement, without notice or obligation.

^{*1} This is assuming 2.6 : 1 compression ratio.

The degree of data compression attained while recording data varies according to system environment and data type.

Specifications (SDX-D500C)

■ Performance

Storage Capacity	130 GB compressed (with 230 m AIT-2 tape) * ¹ 50 GB uncompressed (with 230 m AIT-2 tape)
Bit Error Rate	less than 10^{-17}
Data Transfer Rate (TAPE)	6 MB/s uncompressed 15.6 MB/s compressed * ¹
Burst Data Transfer Rate (SCSI)	12 MB/s maximum, asynchronous 40 MB/s maximum, synchronous
Initialize Time	less than 5 seconds
Load Time	less than 24 seconds
Unload Time	less than 30 seconds
Rewind Time	less than 105 seconds (with 230 m tape)

■ Operating Environment

Operating	Temperature: 10 to 35 °C Humidity: 30 to 80% (no condensation)
Non-Operating	Maximum wet bulb temperature: 26 °C Temperature: -40 to +70 °C Humidity: 10 to 90%

■ Power Supply & Miscellaneous

Power Supply	100 to 240 V AC, 50/60 Hz 1.2 A
Case Dimensions	198 × 64.5 × 246 mm (W × H × D) (excluding protruding parts)
Weight	2.4 kg
Accessories	Power Cable (1) Operator's Guide (1)

Specifications may be subject to change, in the interest of technological improvement, without notice or obligation.

*¹ This is assuming 2.6 : 1 compression ratio.
The degree of data compression attained while recording data varies according to system environment and data type.

Specifications (SDX-D400C)

■ Performance

Storage Capacity	91 GB compressed (with 230 m AIT-1 tape) ^{*1} 35 GB uncompressed (with 230 m AIT-1 tape)
Bit Error Rate	less than 10 ⁻¹⁷
Data Transfer Rate (TAPE)	4 MB/s uncompressed 10.4 MB/s compressed ^{*1}
Burst Data Transfer Rate (SCSI)	12 MB/s maximum, asynchronous 40 MB/s maximum, synchronous
Initialize Time	less than 5 seconds
Load Time	less than 24 seconds
Unload Time	less than 30 seconds
Rewind Time	less than 105 seconds (with 230 m tape)

■ Operating Environment

Operating	Temperature: 10 to 35 °C Humidity: 30 to 80% (no condensation)
Non-Operating	Maximum wet bulb temperature: 26 °C Temperature: -40 to +70 °C Humidity: 10 to 90%

■ Power Supply & Miscellaneous

Power Supply	100 to 240 V AC, 50/60 Hz 1.2 A
Case Dimensions	198 × 64.5 × 246 mm (W × H × D) (excluding protruding parts)
Weight	2.4 kg
Accessories	Power Cable (1) Operator's Guide (1)

Specifications may be subject to change, in the interest of technological improvement, without notice or obligation.

^{*1} This is assuming 2.6 : 1 compression ratio.
The degree of data compression attained while recording data varies according to system environment and data type.