

# Contents

<b><i>Introduction</i></b> .....	<b>3</b>
Product Features .....	3
Precautions .....	4
<b><i>Installation</i></b> .....	<b>5</b>
SCSI Connection/Setting the SCSI ID/Option Switches for SDT-7000/7200/9000 .....	5
SCSI Connection/Setting the SCSI ID for SDT-10000 .....	6
Option Switches (DIP Switch) for SDT-10000 .....	7
Changing Form Factor .....	8
<b><i>Operation</i></b> .....	<b>13</b>
Location of 3 LED's .....	13
LED Indication for Drive Status .....	14
Drive Operation .....	15
Emergency Cassette Removal Procedure .....	16
<b><i>Interface Implementation</i></b> .....	<b>17</b>
Supported SCSI Messages .....	17
Supported SCSI Commands .....	17
<b><i>Specifications</i></b> .....	<b>18</b>
<b><i>Service Contacts in Europe (Hotlines)</i></b> .....	<b>20</b>

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# Introduction

## Product Features

- High Burst Transfer Rate:  
5MB/Sec Asynchronous, 10MB/Sec Synchronous  
SDT-10000 (14MB/sec Asynchronous, 40MB/sec Synchronous)
- Large 1 MB Buffer (SDT-9000 has 2MB; SDT-10000 has 10MB)
- 3.5" Standard Height, 5.25" Half Height Form Factors
- Embedded SCSI Interface (Ultra Wide for SDT-10000)
- Supports Variable or Fixed Record Length
- Supports SCSI-2 Sequential-Access Devices Command Set
- Read After Write (RAW)
- Frame Rewrite Function
- Three Levels of Error Correction Code (ECC)
- Quick Search (100 times normal Read/Write speed, 200 times with -9000)
- Random Read
- N-Group Write Option
- Dual Partition Option
- SCSI Disconnection/Arbitration

**SDT Tape Device (with data compression)**

	<b>SDT-7000</b>	<b>SDT-7200</b>	<b>SDT-9000</b>	<b>SDT-10000</b>
<b>Data Capacity</b>	4 - 8** GB	4* GB	12 - 24** GB	20 - 40** GB
<b>Transfer Rate (sustained)</b>	0.78 - 1.55** MB/sec.	0.78* MB/sec.	1.2 - 2.4** MB/sec.	2.4 - 4.8** MB/sec.
<b>Supported Formats</b>	DDS, DDS-2 DDS-DC, DCLZ	DDS, DDS-2	DDS, DDS-2 DDS-3, DDS-DC, DCLZ	DDS, DDS-2, DDS-3, DDS-4, DDS-DC, DCLZ

\*without compression      \*\* assuming 2:1 compression ratio

# Precautions

## Installation

- Avoid placing the drive in a location subject to:
  - high humidity
  - high temperature
  - excessive dust
  - mechanical vibration
  - direct sunlight

## Operation

- Do not move drive during operation, it may cause a malfunction.
- Avoid exposing drive to sudden changes from low to high temperature. Doing so may cause condensation to collect inside the drive. Should the ambient temperature suddenly rise while the drive is on, wait at least one hour before switching it off. Operating the drive immediately after a cause a malfunction.
- Do not switch the unit off with a tape in the drive.

## Transportation

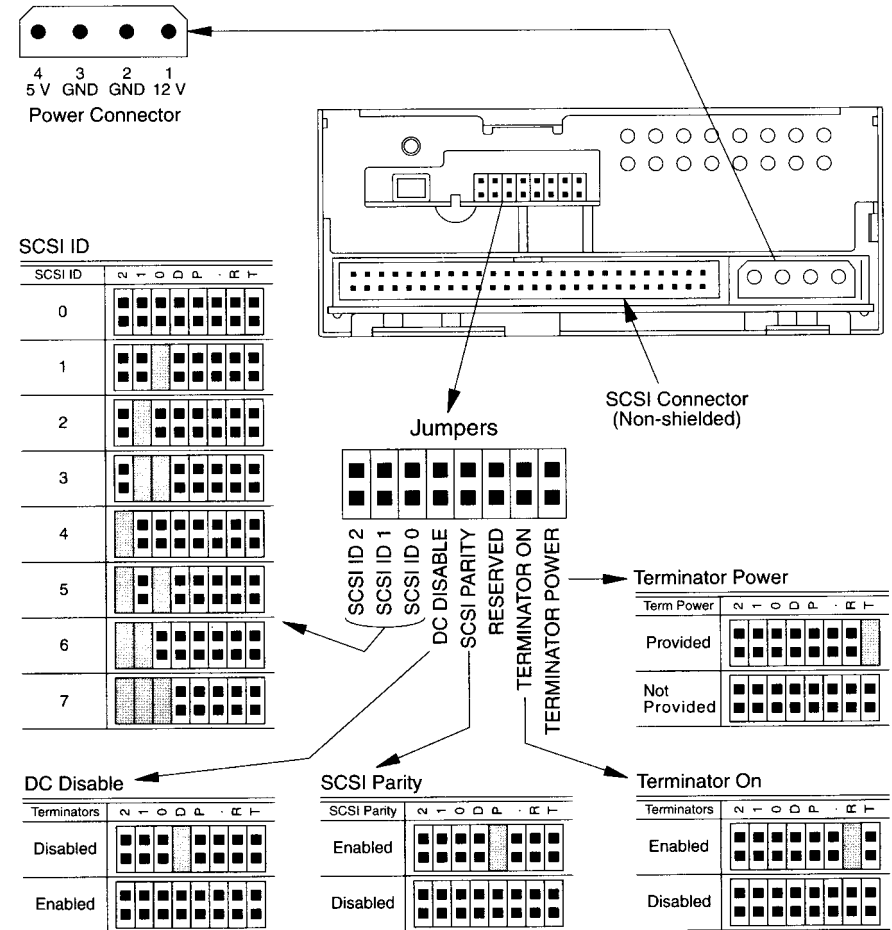
- Keep original packing material for future shipment of the drive.
- Remove any tape(s) before transport and repack drive as mentioned above.

### Note:

This manual provides complete, step-by-step instructions for tape drive installation. Please read carefully and thoroughly before attempting installation and save it for future reference.

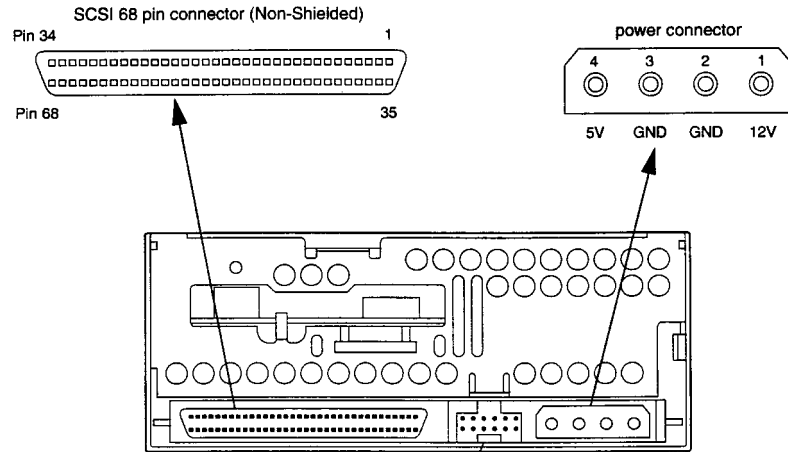
# Installation

## SCSI Connection/Setting the SCSI ID/Option Switches for SDT-7000/7200/9000

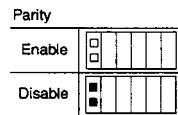
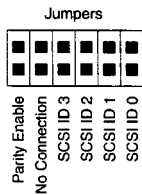


**Note :** ■ = CLOSED Jumper installed  
□ = OPEN Jumper not installed

## SCSI Connection/Setting the SCSI ID for SDT-10000

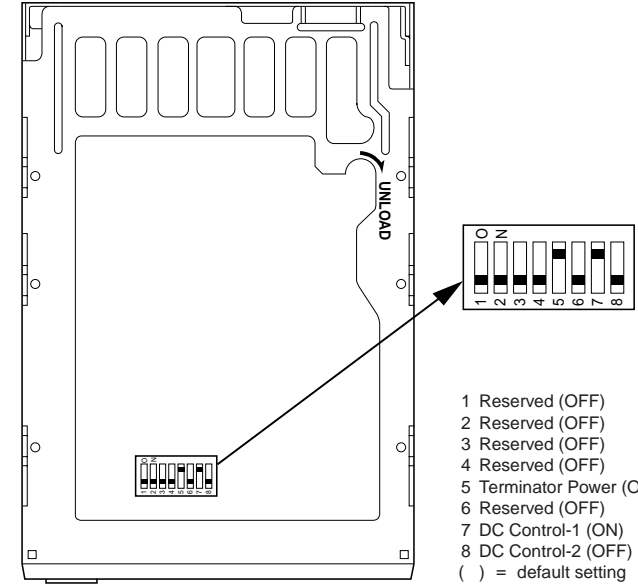


SCSI ID	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SCSI ID 0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCSI ID 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCSI ID 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCSI ID 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCSI ID 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCSI ID 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCSI ID 6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCSI ID 7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCSI ID 8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCSI ID 9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCSI ID 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCSI ID 11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCSI ID 12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCSI ID 13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCSI ID 14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCSI ID 15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Note :  = CLOSE/Jumper  
 = OPEN/Jumper not installed  
 = Don't care

## Option Switches (DIP Switch) for SDT-10000



Terminator Power	Definition
OFF	Not provided
ON	Provided

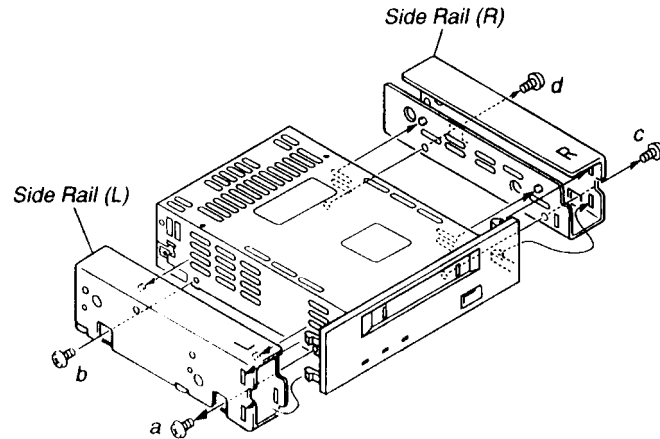
DC Control-1	DC Control-2	Definition
OFF	OFF	Compression disabled at power-on. The host is allowed to control compression.
OFF	ON	Compression disabled at power-on. The host is not allowed to control compression.
ON	OFF	Compression enabled at power-on. The host is allowed to control compression.
ON	ON	Compression enabled at power-on. The host is not allowed to control compression.

## Changing Form Factor

### ■ **A** If you want to change from HH 5.25" to 3.5":

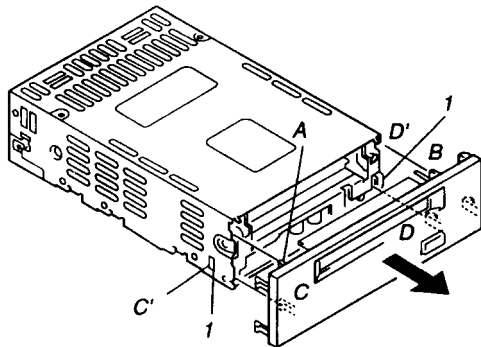
#### **1** Remove side rails

Remove four screws (a, b, c, d) securing the side rails (L, R) and then remove the side rails (L, R).



#### **2** Remove 5.25" HH front panel

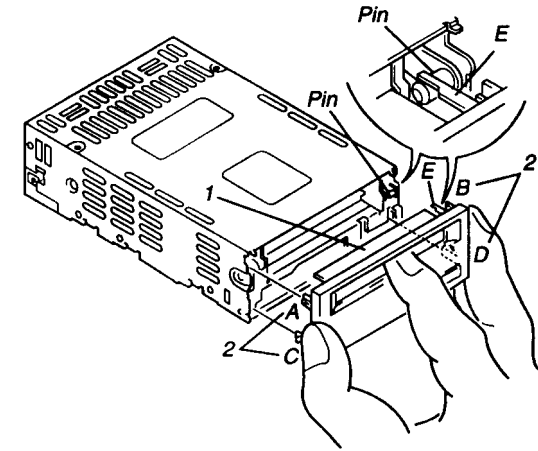
1. Push and unlock C and D at C' and D'.
2. Pull the lower part of front panel forward.



### ■ **3** Install 3.5" front panel

1. Push and open lid.
2. Holding the lid open with your finger, push the front panel to catch the chassis at A, B, C and D.

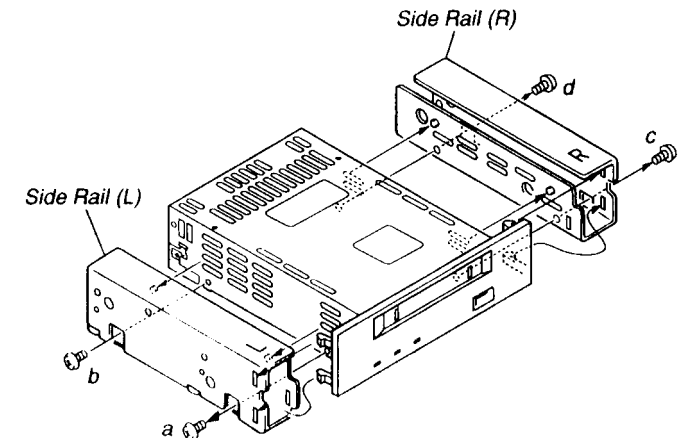
**Note:** Part E must locate on the pin.



### ■ **B** If you want to change a 5.25" HH front panel to a different colour 5.25" HH front panel:

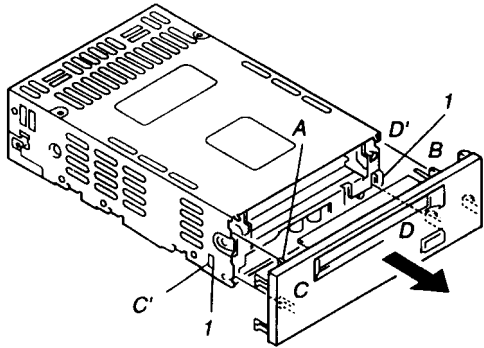
#### **1** Remove side rails

Remove four screws (a, b, c, d) securing the side rails (L, R) and then remove the side rails (L, R).



## 2 Remove 5.25" HH front panel

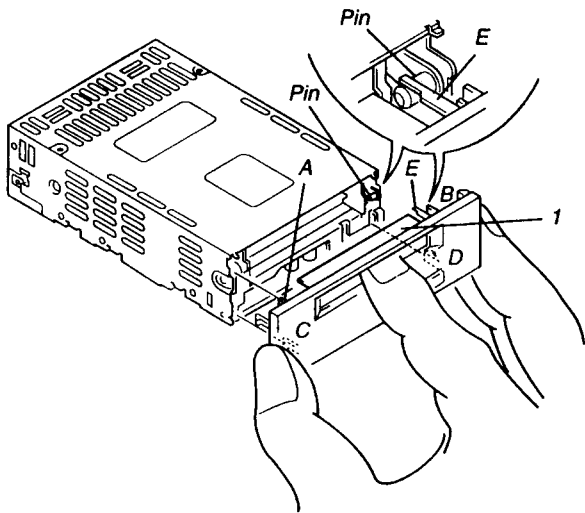
1. Push and unlock C and D at C' and D'.
2. Pull the lower part of front panel forward.



## 3 Install 5.25" front panel

1. Push and open lid.
2. Holding the lid open with your finger, push the front panel to catch the chassis at A, B, C and D.

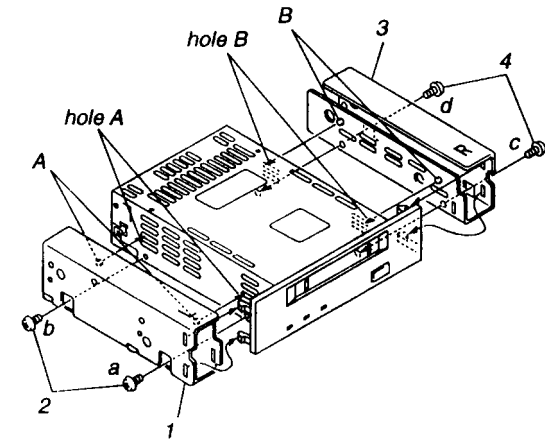
**Note: Part E must locate on the pin.**



## 4 Install side rails with screws

1. Put A into the hole A to catch the side rail (L)
2. Turn screw a first, and b next
3. Put B into the hole B to catch the side rail (R)
4. Turn screw c first, and d next

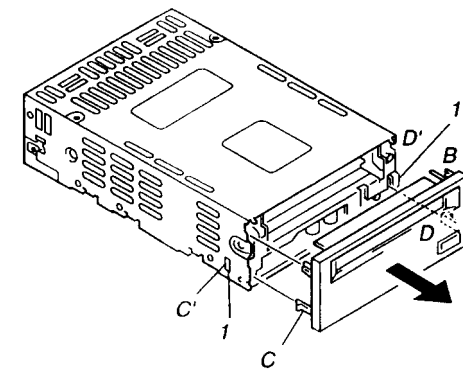
**Note: Use the mounting screws removed in the A-1. Other screws may damage the drive mechanism**



■ **Ⓢ** If you want to change from 3.5" to 5.25" HH front panel:

## 1 Remove 3.5" front panel

1. Push and unlock C and D at C' and D'.
2. Pull the lower part of front panel forward.

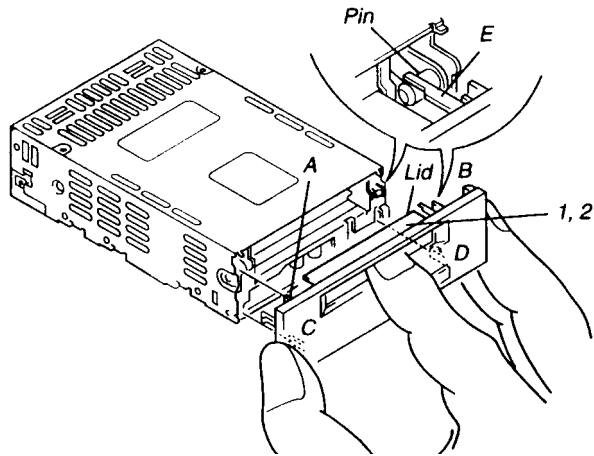


# Operation

## 2 Install 5.25" front panel

1. Push and open lid.
2. Holding the lid open with your finger, push the front panel to catch the chassis at A, B, C and D.

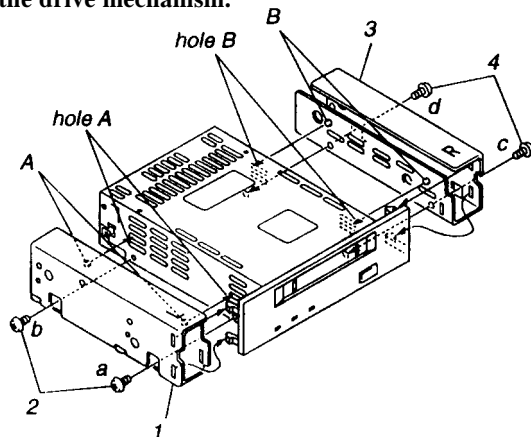
**Note: Part E must locate on the pin.**



## 3 Install side rails with screws

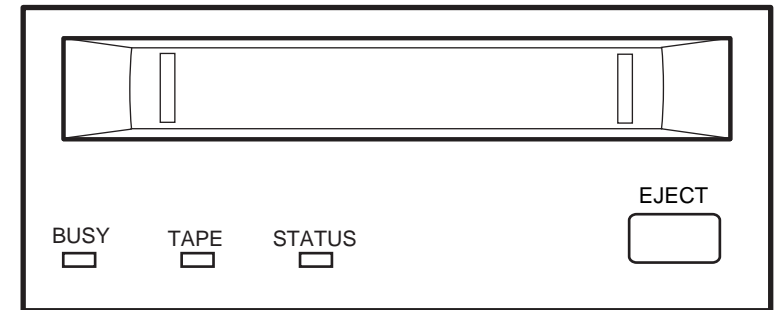
1. Put A into the hole A to catch the side rail (L).
2. Turn screw a first, and b next.
3. Put B into the hole B to catch the side rail (R).
4. Turn screw c first, and d next.

**Note: Use the mounting screws removed in A-1. Other screws may damage the drive mechanism.**



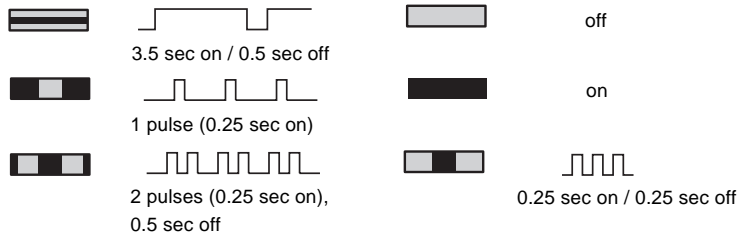
## Location of 3 LED's

The drive's front panel has 3 LED's (BUSY, TAPE, and Status) and an eject button.



## LED Indication for Drive Status

LED			State		
BUSY	TAPE	STATUS	Activity	Cartridge	Other
			None	None	None
			SCSI	None	None
			Drive	Loading/Unloading	None
			Drive	Loading/Unloading	Write Protected
			None	Loaded	None
			SCSI	Loaded	None
			SCSI/Drive	Loaded	None
*			*	Loaded	Write Protected
			None	Loaded	Cleaning Tape at EOM
*		*	*	Loaded	Error Rate Warning
*	*		*	*	Cleaning Request
*	*		*	*	Selftest Failure
	*	*	*	*	Waiting for Reset
*		*	*	*	Waiting for Eject



\* : Not defined.

## Drive Operation

### ■ Loading a Cassette

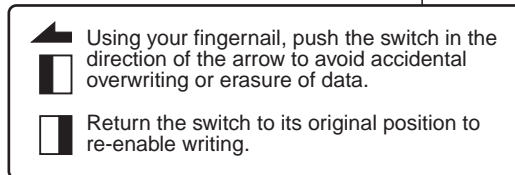
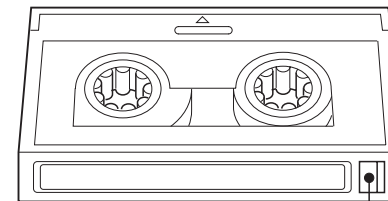
Insert a cassette into front panel slot with cassette's arrow pointing toward the drive. Drive's auto-load mechanism will draw cassette into unit.

### ■ Unloading a Cassette

Cassettes may be removed either in response to a SCSI command or by pressing the eject button. The latter causes a tape to go to BOM, the drive unthreads it, and ejects the cassette.

### ■ Write Protecting a Cassette

Sliding the tab on the back of a cassette write protects it. In this state, data may be read, but may not be written. (See below.)



### ■ Using a Cleaning Tape

The included head cleaner tape is designed to last the life of the drive. A cleaning tape should be used periodically to clean entire tape path. Drive will automatically request this cleaning operation. Drum rotation hours determine frequency of required head cleaning, normally each 24 hours.

## Emergency Cassette Removal Procedure

If a tape becomes stuck inside the drive it may be removed manually.

1. Remove drive from its enclosure to gain access to the bottom left side of drive.
2. Remove drive's top cover to monitor degree of tape slack during the process.

**Note:**

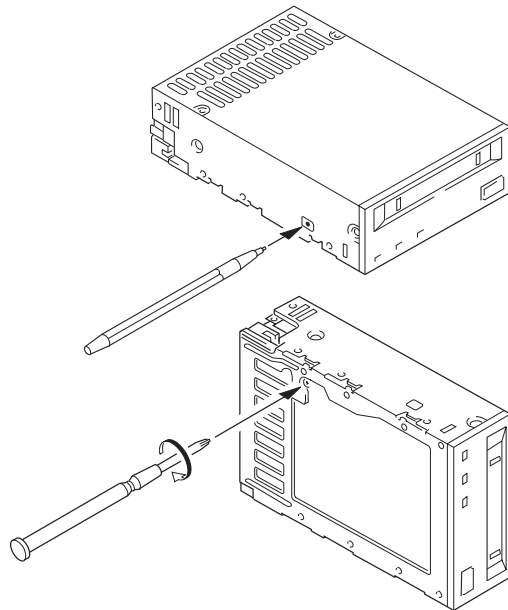
**Never touch anything inside the drive! It may cause a malfunction.**

3. Rotate Loading/Threading motor clockwise with a small Phillips („+“) by placing it into the plastic screw head on the rear of drive (see figure). This will enable movement back to the threading mechanism's initial position.

**Note:**

**To avoid drive damage, do not turn screw past its mechanical limit.  
To avoid tape damage, take up slack with ratchet on left side of drive.**

4. Continue this procedure until tape is lifted from drive mechanism and ejected.
5. Return drive to an authorized service station for repair.



## Interface Implementation

### Supported SCSI Messages

Abort	Initiator Detected Error
Bus Device Reset	Message Parity Error
Command Complete	Message reject
Disconnect	No Operation
Extended Message	Restore Pointers
- Synchronous Data Transfer Request	Save Data Pointer
Identify (w/&w/o Disconnect)	

### Supported SCSI Commands

Erase	Release Unit
Inquiry	Request Block Address
Load/unload	Request Sense
Locate	Reserve Unit
Log Select	Rewind
Log Sense	Seek Block
Mode Select (6)	Send Diagnostic
Mode Sense (6)	Space
Prevent Allow Medium Removal	Test Unit Ready
Read	Verify
Read Block Limits	Write
Read Buffer	Write Buffer
Read Position	Write Filemarks
Receive Diagnostic Results	



# Specifications

## ■ Dimensions

	3.5" Standard Height	5.25" Half Height
Height	41.2mm (1.62 in)	41.2mm (1.62 in)
Width	101.6mm (4.0 in)	146.0mm (5.75 in)
Depth	146.0mm (5.75 in)	146.0mm (5.75 in)

## ■ Acoustic Noise

	(A) curve weight
Streaming Write/Read	35db (A)
Insert/Eject	60db (A)

## ■ Altitude

Operating	0 to 7000 feet
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## ■ Shock

Operating	No Data Loss Half Sine Performance 5 G Peak 3 ms 3 axes, 3 directions *Interval 10 seconds
Non-Operating	No Device Damage Half Sine 90 G Peak 3 ms (30 G Peak 11 ms) 3 axes, 3 directions

## ■ Vibration

Operating	Swept Sine 5 to 500 Hz *0.25 G Peak 1 Octave/min. 3 axes, 3 directions
Non-Operating	Swept Spine 5 to 500 Hz *0.5 G Peak 1 Octave/min. 3 axes, 3 directions

## ■ Temperature and Humidity Range

Temperature	
Operating	5° C to 40° C ( $\Delta T < 10^\circ \text{C/h}$ )
Non-Operating (mech)	-40° C to 70° C ( $\Delta T < 20^\circ \text{C/h}$ )
Non-Operating (tape)	-40° C to 45° C ( $\Delta T < 20^\circ \text{C/h}$ )
Humidity	
Operating	20 to 80% RH, non-condensing Maximum wet bulb temperature = 26° C
Non-Operating (mech)	5 to 95% RH ( $\Delta RH < 30\%/h$ )
Non-Operating (tape)	20 to 80% RH ( $\Delta RH < 30\%/h$ )

## ■ Power Requirements

Voltage	Max ripple	Current	
		Typical	Maximum
5V +/-5%	100mVp-p	1.0 A	2.0 A
12V +/-10%	100mVp-p	0.21 A	0.7 A

## ■ Suspended Particulate

Operating	Less than 150 microgram/m <sup>3</sup>
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## ■ EMI

Radiated	FTZ/FCC class B, VCCI-2 (Equivalent)
Conducted	FTZ/FCC class B, VCCI-2 (Equivalent)
ESD	Discharge < 15 kV: No operation failure < 20 kV: No drive damage

## ■ Air-cooling Requirement

Surrounding temperature	< 40° C
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Clean air flow is recommended to minimise the possibility of data loss.

# *DDS Tape Drive*

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## **DDS Tape Drive**

**SDT-7000 Series**  
**SDT-7200 Series**  
**SDT-9000 Series**  
**SDT-10000 Series**

User's Guide  
Mode d'emploi  
Bedienungsanleitung  
Manual de instrucciones  
Manuale d'istruzione

*SDT-7000 Series*

*SDT-7200 Series*

*SDT-9000 Series*

*SDT-10000 Series*

*User's Guide*

*Mode d'emploi*

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