Conventions
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Installing the Drive
How to Use the Drive
Specifications

NOTICE

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 communication. However, there is no guarantee that interference will not occur in a particular installlation. 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.

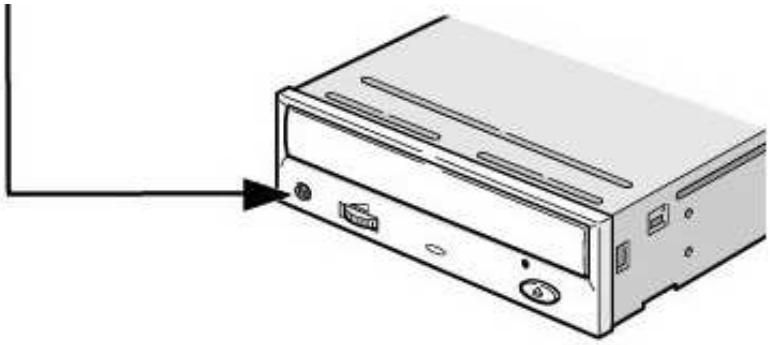
Warning as to USE

This CD-R/RW drive together with software is a product for utilizing CD-R/RW recording media with rewriting, erasing and readout capabilities, as an external computer memory device. Except in the case where copying of CD-ROMs or the like is especially recognized under the copyrights laws as being for the purpose of individual use by the customer or the like, or in the case where the customer has obtained permission to make copies from the rightholder, reproduction of CD-ROMs and copyright laws. Take notice that unauthorized copying may be subject to claims for damages and to penalties.

CAUTION
Rating voltage for peripherals.

1. Headphone Jack

   Rating Voltage output Audio Signal Max. 2V



FCC WARNING
Changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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

Lower a volume
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

The volume that exceeds 70dB occurs and the obstacle sometimes breaks out.

CE

Declaration of Conformity
"The Product complies with the requirements of the EMC Directive 89/366/EEC and the **Low Voltage Directive 73/23/EEC.**"

- Please take notice that the manufacturer of this equipment does not offer any warranty against data loss due to inappropriate installation or handling, or direct or indirect damages.
- Please take notice that the manufacturer will bear no responsibility for direct or indirect damages caused by the use of this product or its malfunction.
- Please take notice that the manufacturer will bear no responsibility for damage to data caused by this product.
- Please backup (copy) all important data as protection against data loss.

- PC DOS is a trademark of IBM Inc.
- MS-DOS, Windows, Windows ® 95, Windows ® 98, Windows NT® and Windows® 2000 are trademarks registered in the United States and other countries by the Microsoft Corporation.
- The company names and product names written in this manual are trademarks or registered trademarks.

Conventions

This manual uses the following symbols to indicate important information relating to the drive.

	Failing to comply with the information in this manual and/or incorrect handling of the drive may result in serious personal injury or damage to the product.
	Indicates restriction or precaution that should be observed.
	Provides useful additional information.

Introduction

This manual contains important notes and product handling information. Be sure to read the manual before using the product. For easy reference in the future, please keep the manual at a handy location.

Multimedia Printer series

Thank you for purchasing the Multimedia Printer series drive MP7083A (hereafter referred to as the drive). The drive enables you to play CD-ROM discs, write once and play CD-R discs, or write, play, and rewrite CD-RW discs.

The following marks indicate media that can be used with the drive.

Handling Procedures

Obey the following cautions when handling the drive or discs.

Cautions During Installation

- Install the drive in accordance with the specifications. Be careful to avoid locations likely to cause vibration or shock.
- Avoid locations where there is high humidity, excessive dust, or poor ventilation.
- Avoid locations in direct sunlight, with severe changes in humidity, or places where there are extremely high or low temperature variations.
- Don't use the drive near radio or television receivers. It may interfere with their reception.
- Do not disassemble the drive. Dismantling the drive to attempt repairs or for other reasons is dangerous because the laser may radiate outside the unit.

Cautions During Use

- Don't suddenly move the drive from a cold place to a warm place, or suddenly raise the room temperature. Condensation may occur, causing abnormal operation.
- Make sure to remove the disc before moving the drive. The disc may be damaged, causing data loss.
- Be careful to prevent foreign objects such as liquids or metal from entering the drive. Should by chance a foreign object enter the drive, please consult the dealer where the drive was purchased.
- Don't use benzene or thinner to clean dirt from the drive. Don't allow chemicals such as insecticides to contact the drive. Use a soft cloth to wipe the drive, or moisten a cloth with neutral detergent diluted with water and use it to clean particularly dirty areas.
- Don't cutoff the electric power while the drive is operating.
- When connecting two E-IDE devices to the Primary or Secondary connectors, make sure that the two devices are not both configured as Master, or both as Slave. If they are both set the same, Windows may fail to run or recognize the drives.
- The total length of the E-IDE cable should be less than 18 inches (about 45 cm).
- Make sure the power to the host computer is turned OFF before connecting.
- Never insert a damaged disc into the drive.
- In wintertime, don't use a disc soon after bringing in from outdoors. Use it only after it has reached room temperature.

Cautions Concerning Disc Cleaning

- Remove the disc by pressing the eject button.
- Use compressed air to clear dust from the disc. (Spray the compressed air for about 5 seconds).

- Check to see if there is dirt on the surface of the disc. Be careful not to touch the disc with the fingers when doing this. (See Fig. 1)
- After cleaning the disc with compressed air, place it on the disc tray and mount it.(See Fig. 2)
- We suggest using dry air cleaner as compressed air for cleaning.

Other Cautions

- When moving the equipment, make sure that the disc has been removed from the drive.
- When connecting connectors, make sure that the power is OFF. If the power is ON, there is a possibility of short circuit.
- When not using the drive for a long period, dust may adhere to the disc tray. Before using the drive again, use dry air cleaner to remove the dust from the tray.

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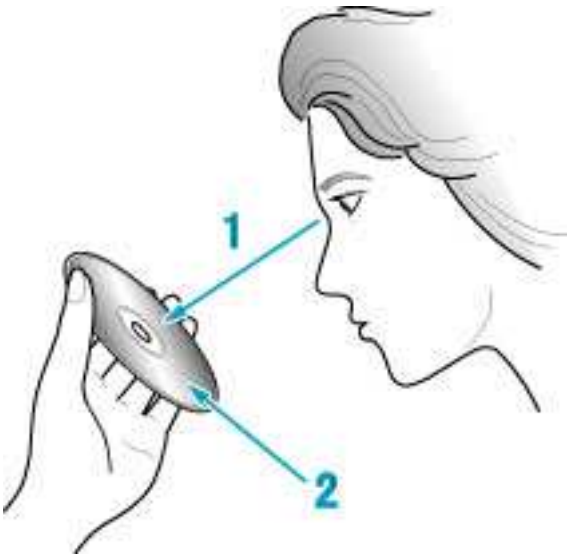
fig1

1. Check
2. Recording surface



Back

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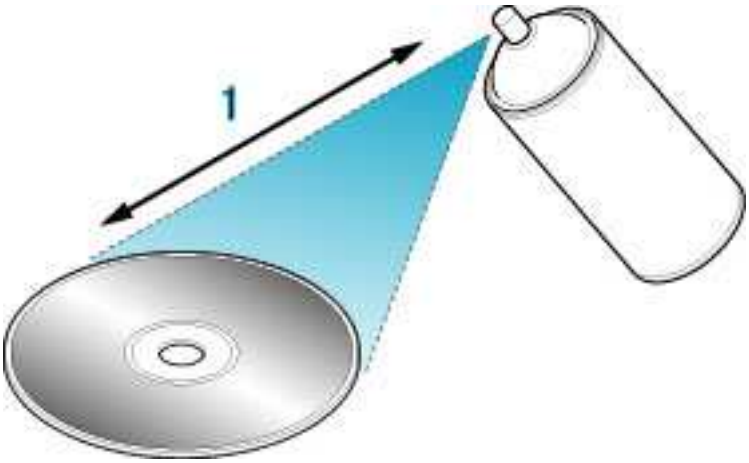
fig2

1. 50 to 100mm



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Features

- Completely sealed door construction provides high reliability.
- An improved anti-heat design means that no cooling fan is needed.
- Easy-to-use tray model.
- Enhanced-IDE (ATAPI) model
- Compliant with industry standard Orange Book Part II (CD-R) and Part III (CD-RW).
- Can read not only CD-R and CD-RW discs, but also video CDs, audio CDs, photo CDs*1, and CD-Text
- Can read data at 32x speed (4.8MB/sec data transfer rate), write data at 8x speed (CD-R, 1,200KB/sec data transfer rate.) and write data at 8x speed *2(High Speed CD-RW, 1,200KB/sec data transfer rate).
- The recorded CD-RW media can be played in a DVD player or a multi-read CD-ROM Player, maintaining future compatibility.
- Supports random UDF for easy writing to CD-RW discs.

*1 Bundled software does not support this writing format.
*2 The speed at which to write on the current standard CD-RW discs is 4x recording (at a data transfer rate of 600KB/sec).

System environment

Explains the system environment required for using the drive as a CD-R/CD-RW drive.

PC	IBM PC/AT compatible
Operating System	Windows 98/95(OSR2 or later) Windows NT Workstation Ver.4.0 (Service Pack 5) or later*1 Windows 2000 (Professional)*1
CPU	Pentium 200 MHz or higher
Memory	Windows NT (Workstation) / 2000 64MB or more (Windows 95/98 32MB or more)
Harddisk	Hard disk with average access time of 19msec or less, and data transfer speed of 2,500KB/sec or greater. 1GB or more free space.
Interface	Enhanced-IDE interface (as Primary Slave, Secondary Master, or Slave)
Drive bay	5.25-inch half height bay required
Power	+5V/+12V power socket required
Recommendation discs*3	CD-R(74min): Ricoh, Mitsubishi Chemical, Taiyo Yuden, Mitsui Chemicals, TDK and Maxell discs CD-R(80min): Ricoh, Taiyo Yuden, TDK discs CD-RW: Ricoh and Mitsubishi Chemical discs*2 High Speed CD-RW: Ricoh discs *2

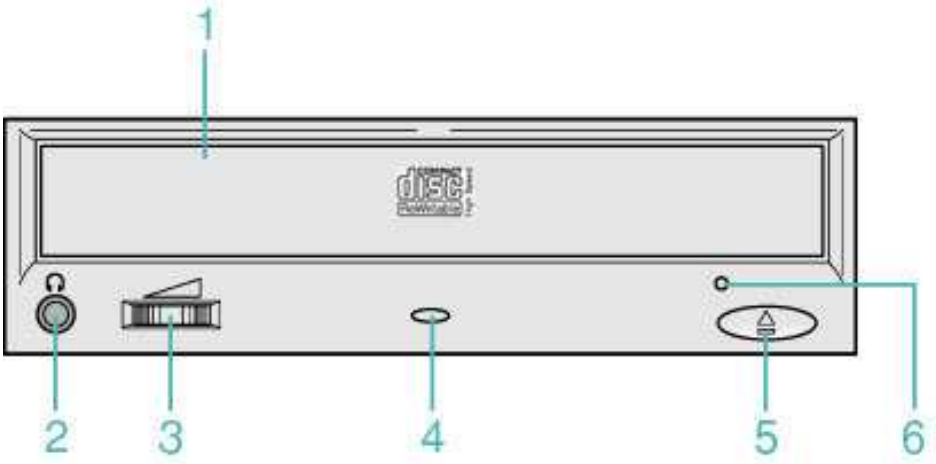
*1 abCD does not support these Operating System.
*2 The disc written using the CD-R/RW drive may not be readable by CD-ROM drives. Multi-read compatible (Random UDF compatible) drives are necessary.
*3 Even if it is the recommendation disc, some of discs may have possibility to fail writting with highest writting speed with the problem on the disc. In this case, please try to write with lower writting speed, or please try to use another disc.

Multi-read compatible (Random UDF compatible) drives are:

- Drives that can read low reflectivity discs.
- Drives that support Packet Write.

Front Panel
Rear panel

Front Panel



1. ## Disc tray

   This is the tray for the disc. Place the disc on the ejected disc tray, then lightly push the tray (or push the eject button) and the disc will be mounted.

   Caution
   Don't use force to pull out or push in the disc tray. This might cause damage to the loading section of the drive.

2. ## Headphone jack

   This jack is for connecting headphones or mini-speakers.

3. ## Volume control

   This is used to adjust the output volume of the headphone jack. It can't be used to adjust the output volume for the audio output connectors on the rear panel.

   Caution
   Turn the volume down before turning on the power. Sudden loud noises can damage your hearing.

4. ## Busy indicator

   This indicator lights green when a disc is mounted into the drive. When the disc is being accessed, it flashes or lights green. If a disc is not mounted, the indicator does not light even when the power is turned on. When a illegal disc is loaded or some hardware trouble occurs, the indicator blinks.

5. ## Eject button

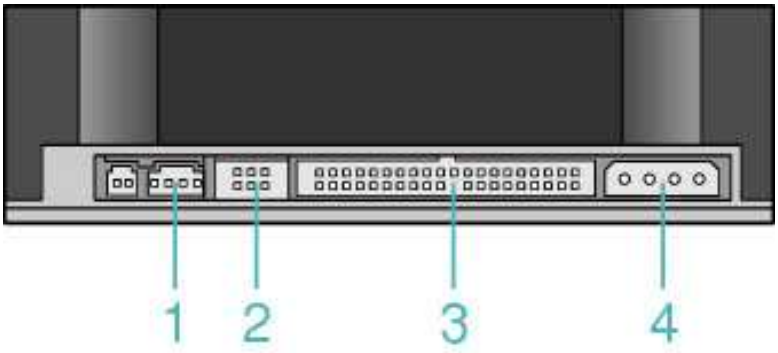
   This is the button used to eject or insert in the disc tray.

6. **Emergency eject hole**

This drive has a function that allows the disc to be ejected manually if this becomes necessary in an emergency such as failure of the drive or a power outage.

> **Caution**
> This feature is a last measure to be used only in an emergency. Using it excessively will cause malfunction.

Rear panel



1. ## Analog Audio Output Connector

Provides output to a sound card (Analog signal).

2. ## Jumper Connector

This jumper determines whether the drive is configured as a master or slave. Changing the master-slave configuration takes effect after power-on reset.

3. ## IDE Interface Connector

Connect to the IDE (Integrated Device Electronics) interface using a 40-pin flat IDE cable.

> **Caution**
> Do not connect or disconnect the cable when the power is on, as this could cause a short circuit and damage the system. Always turn the power OFF when connecting or disconnecting the cable.

4. ## Power Connector

Connects to the power supply (5 and 12V DC) of the host computer.

> **Caution**
> Be careful to connect with the proper way.
> Connecting the wrong way may damage the system (and is not guaranteed).

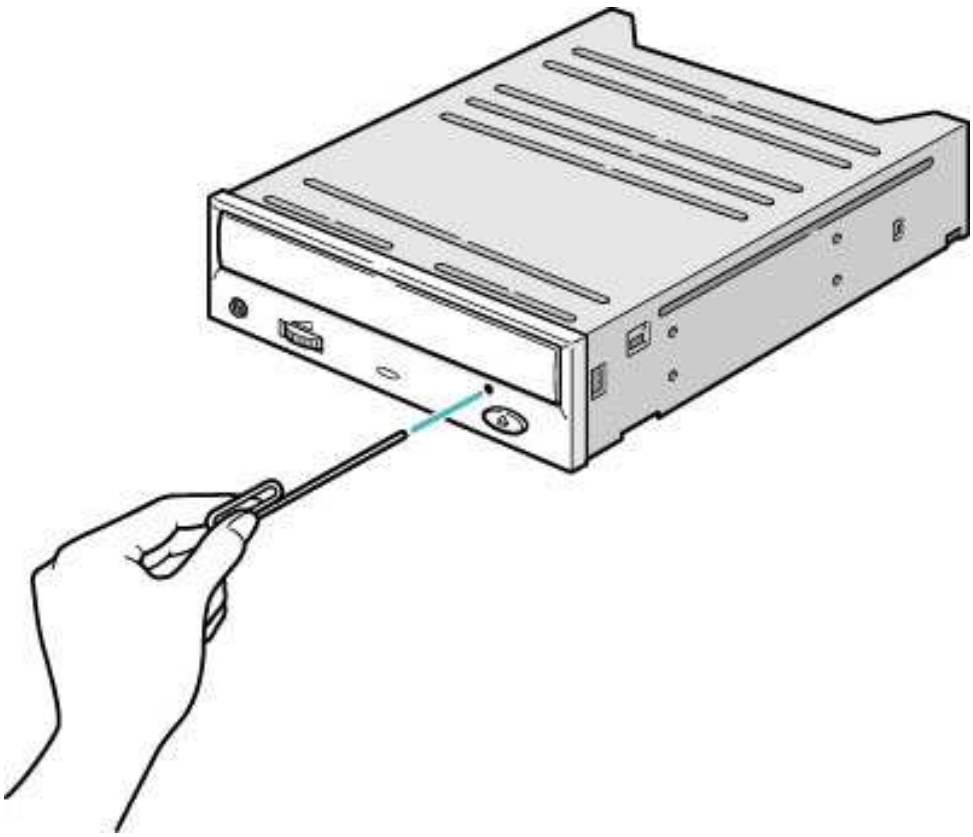
Emergency Eject

This drive has a function that allows the CD to be ejected manually, if this becomes necessary in an emergency such as failure of the drive or a power outage.
Follow the following procedures in such a case.

Caution
This feature is a last measure to be used only in an emergency. Using it excessively will cause malfunction.

1. **Turn the power to OFF.**
2. **Insert a fine tipped object into the emergency eject hole.**
   The front door pops open and the disk tray comes partway out.
3. **Pull the front door to open it all the way,**
   then grip the disc tray between thumb and forefinger and gently pull it straight out.

If you cannot get a good grip on the disc tray with your fingers, use a steel binder clip or spring clamp to pull it out.

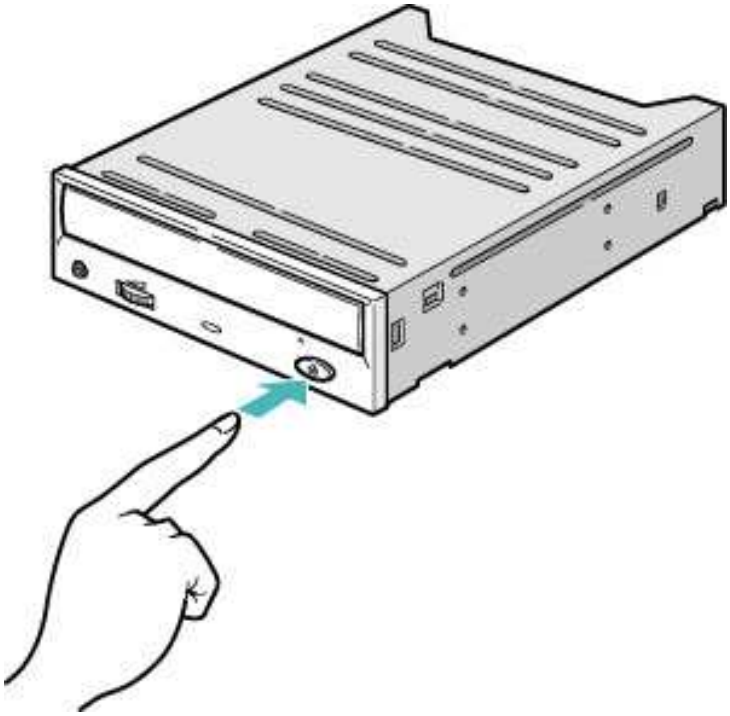


Back Next

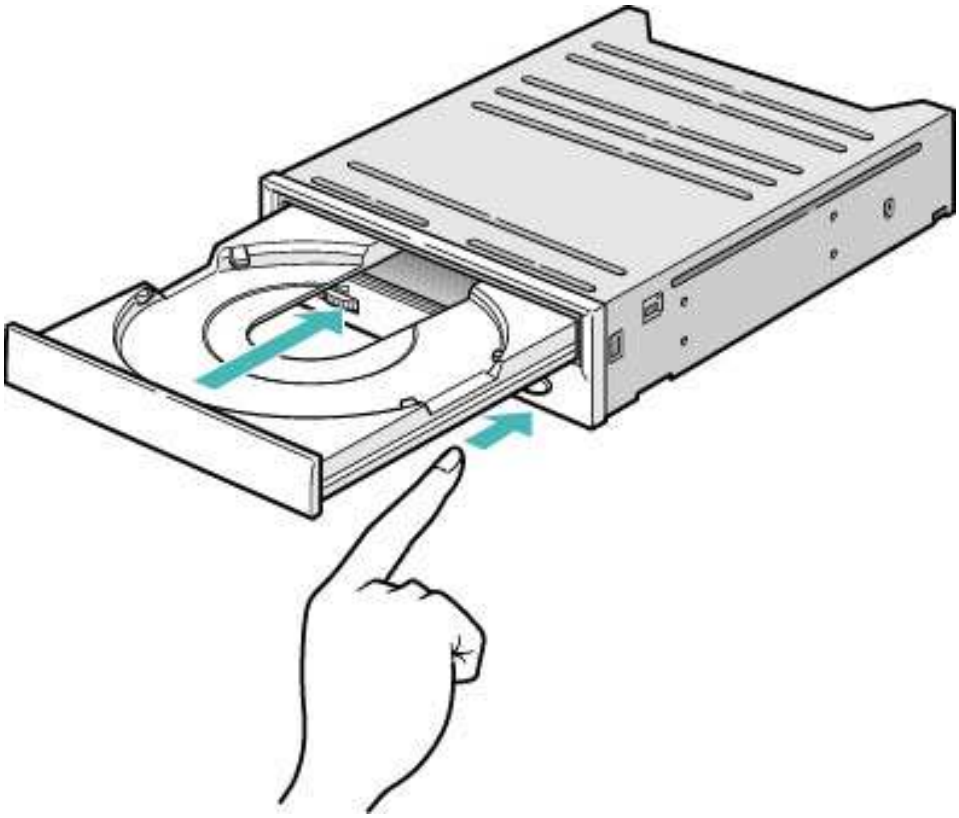
Load the disc	Disc ejection
Emergency Eject	Using the Drive in a Vertical Position

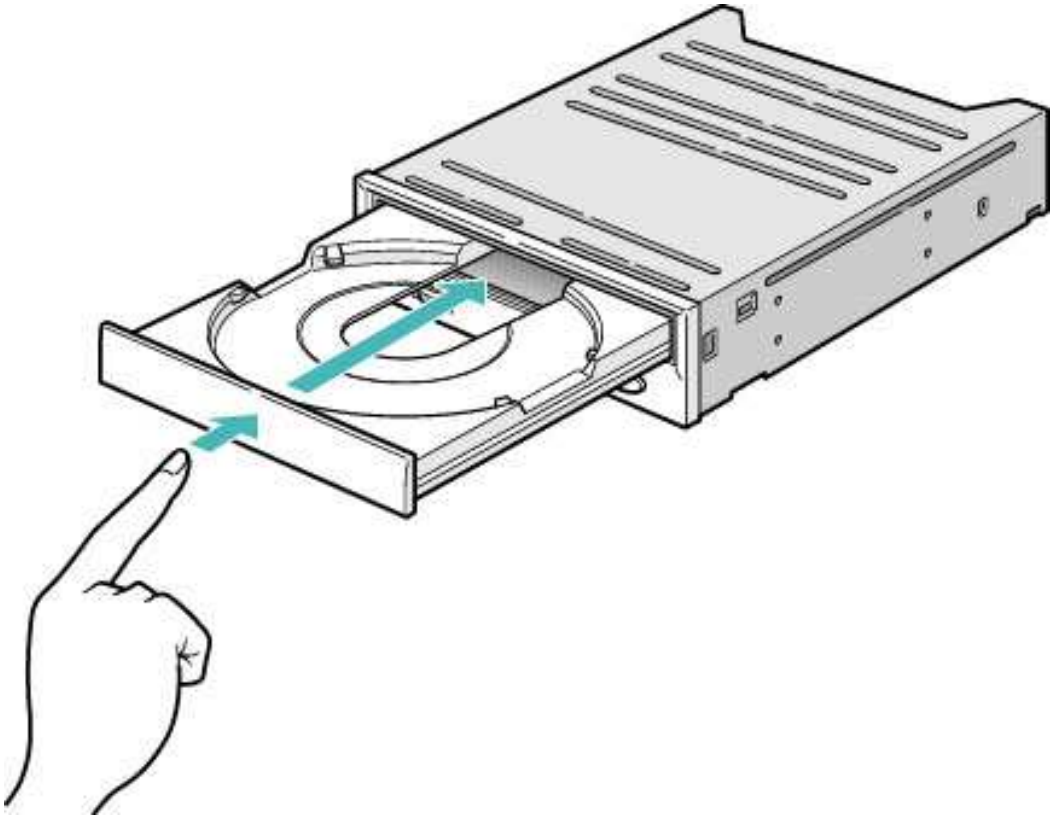
Disc ejection

1. **Press the eject button**



2. **Slowly take the disc out of the disc tray**
3. **Press the eject button or push the disc tray and the tray will be inserted back into the drive.**





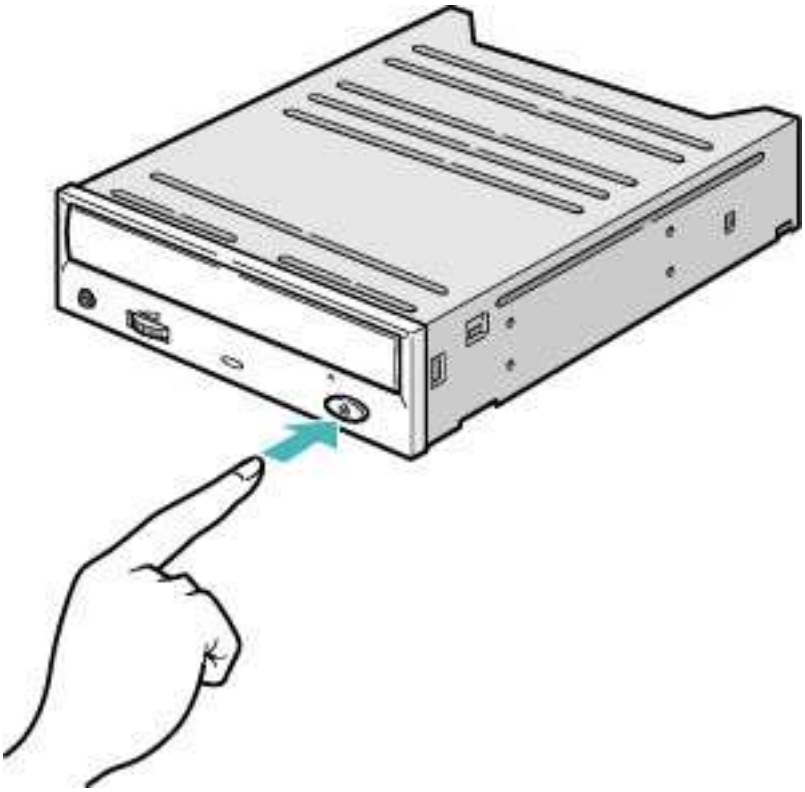
Caution
After ejecting the disc, return the disc tray inside the unit quickly. When the disc tray is in the ejected position, dust and other debris will enter, possibly causing read errors, write errors, or drive failure.

Back Next

Load the disc	Disc ejection
Emergency Eject	Using the Drive in a Vertical Position

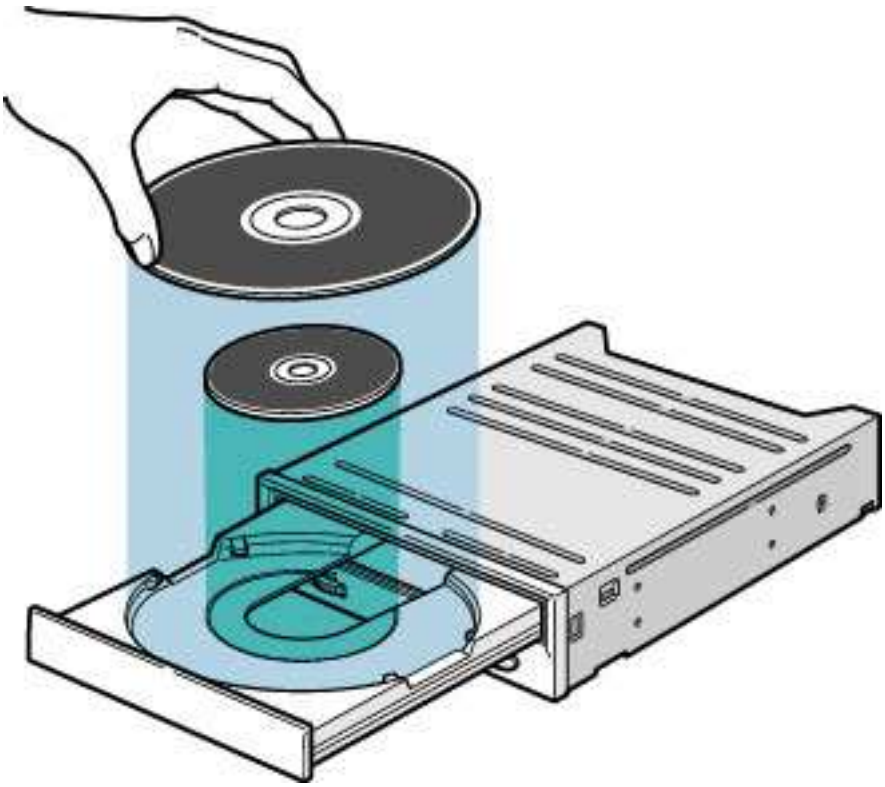
Load the disc

1. **Press the eject button.**



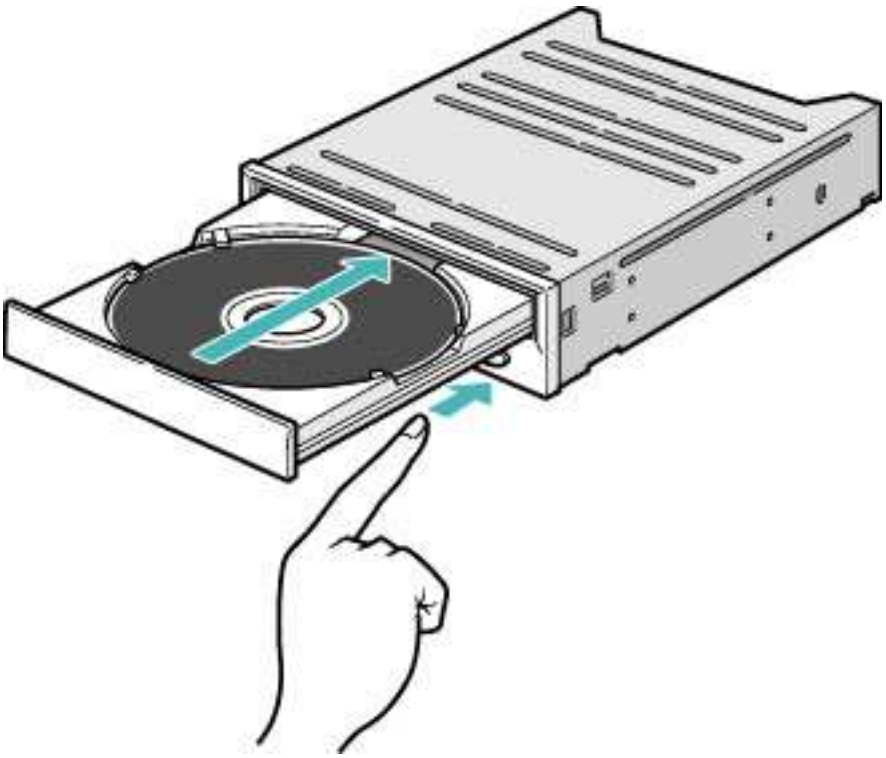
2. **Place the disc on the disc tray.**

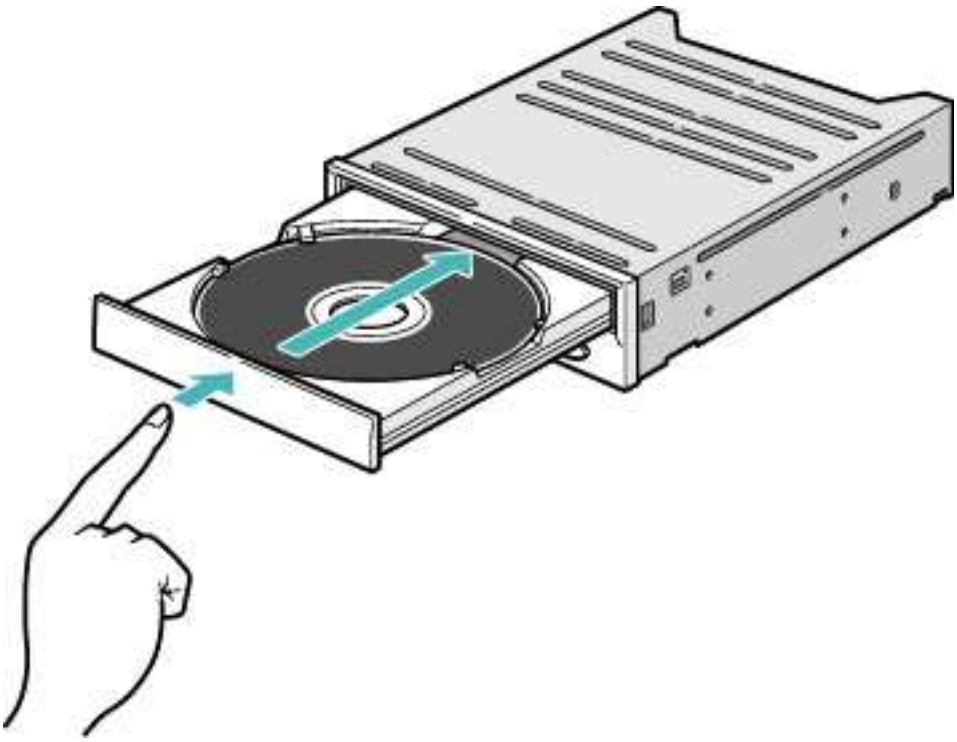
   Be careful not to touch the recording surface of the disc.



3. **Load the disc by pressing the eject button or by lightly pushing in the**

disc tray.





Next

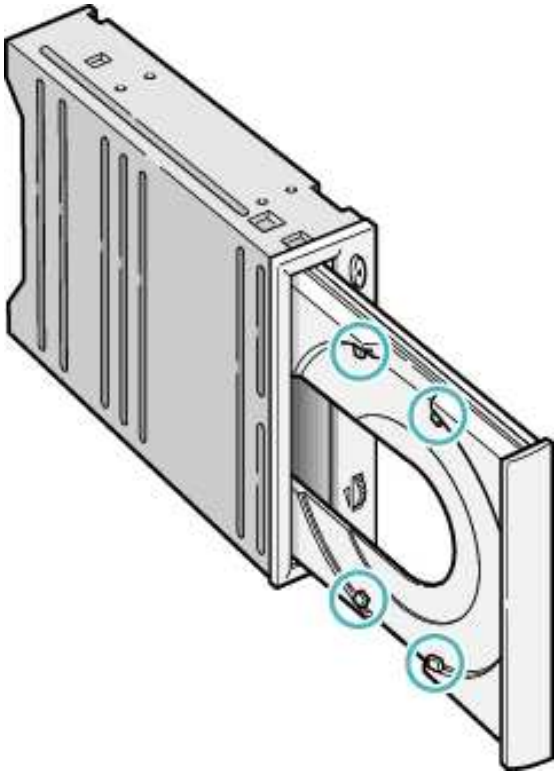
Load the disc	Disc ejection
Emergency Eject	Using the Drive in a Vertical Position

Using the Drive in a Vertical Position

The drive can be installed in a vertical position.

1. **When loading a disc, insert it into the inner side of the tabs.**

	Caution Cannot be used with 80mm CDs. Cannot be used with business card CDs.



Back

Load the disc	Disc ejection
Emergency Eject	Using the Drive in a Vertical Position

Installing the Drive

Specific knowledge of hardware and software is necessary to install the drive. We cannot guarantee against direct or indirect damage resulting from improper connections. Ask your supplier for details of the installation procedure.

Before Installation

Before installing the drive, please note the following points.

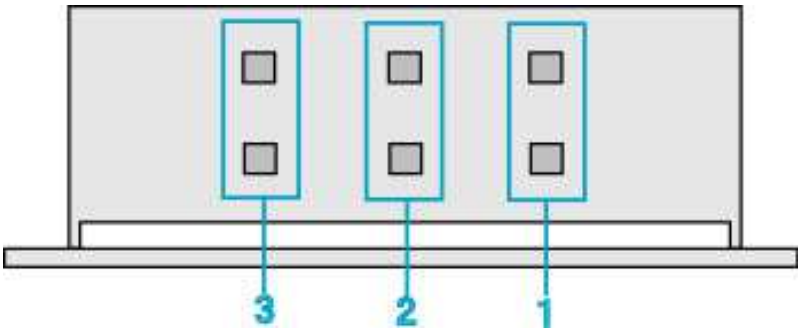
- You will need the following:
  - A Phillips head screw driver of a suitable size to fit the securing screws for the drive unit.
  - The manual for the computer, to know the location of the IDE connector.
- Turn off all peripheral devices of the computer, and the computer itself, and disconnect their power cords from the wall sockets.
- Discharge any static electricity by touching the computer covers etc.
- Before installing the drive, be sure to read the following cautions and information on preparation. Keep a serial number label at the location specified by "Quick Start Instruction".

Installing the Drive

1. **Jumper Set Up**
2. **Removing the Computer Cover**
3. **Mounting the Drive**
4. **Connecting the Power Connector**
5. **PC Connections**
6. **Sound Card Connection**
7. **Replacing the Computer Cover**
8. **Device Drivers**

1. Jumper Set Up

Before installation, set the jumper on the jumper connector on the rear panel.



1. **Master (MA)**

   Drive set as Master (factory default)

2. **Slave (SL)**

   Drive set as Slave

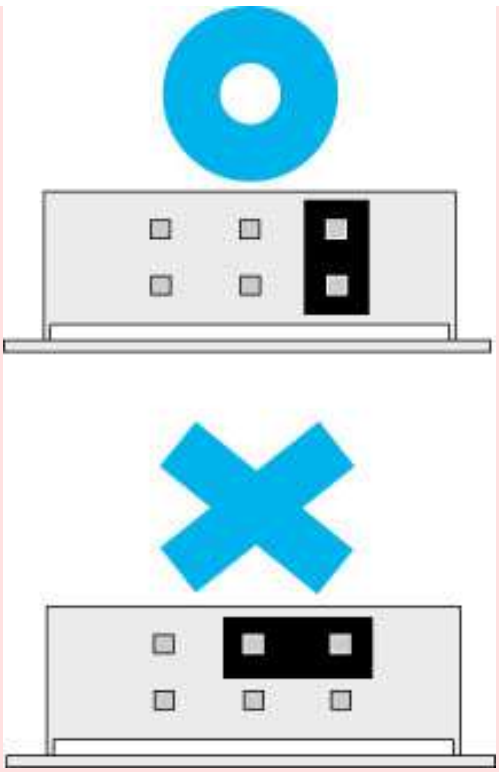
3. **Cable Select (CS)**

   Drive mode set by CSEL on the host IDE interface

- The drive can be connected as the Master or Slave on an E-IDE (ATAPI) interface.
- When several (up to four) E-IDE devices are connected, each must be set in a unique way.
- A hard disk is normally installed as the Primary Master on the E-IDE (ATAPI) interface. Other E-IDE peripheral devices such as hard drives and CD-ROMs are then set accordingly.

Caution

- If two peripheral devices with the same settings are both connected to the Primary or to the Secondary E-IDE bus, the host computer may fail to run, or may malfunction, so careful attention is necessary.
- Make sure that the host computer is turned OFF when connecting or removing a jumper.
- Must be connect the jumper in the vertical direction. If connected horizontally, the drive may malfunction or be damaged.



- Only one jumper should be installed on the jumper connector. If more than one jumper is installed, the drive may malfunction or be damaged.

Next

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1. Jumper Set Up	2. Removing the Computer Cover
3. Mounting the Drive	4. Connecting the Power Connector
5. PC Connections	6. Sound Card Connection
7. Replacing the Computer Cover	8. Device Drivers

---

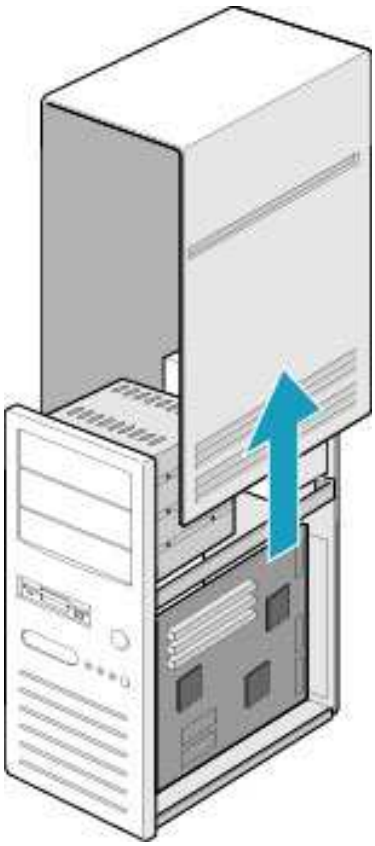
2. Removing the Computer Cover

Make sure all peripheral devices of the computer and the computer itself are turned off, and then remove the cover.

Refer to the manual for the computer for details about removing the cover.

Caution
There may be sharp edges inside the computer take care to avoid injury.

(Example: When newly installing the MP7083A drive into a PC.)



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1. Jumper Set Up	2. Removing the Computer Cover
3. Mounting the Drive	4. Connecting the Power Connector
5. PC Connections	6. Sound Card Connection
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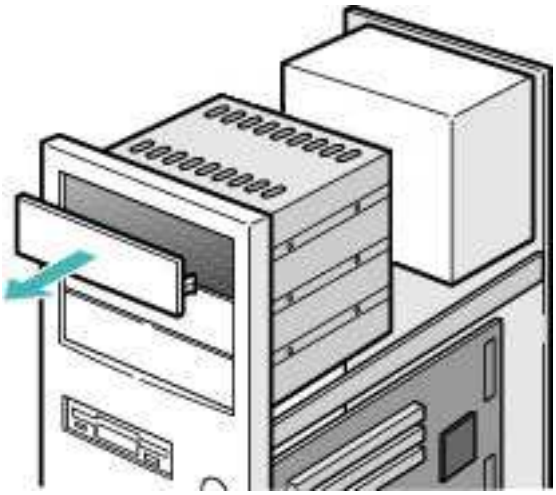
3. Mounting the Drive

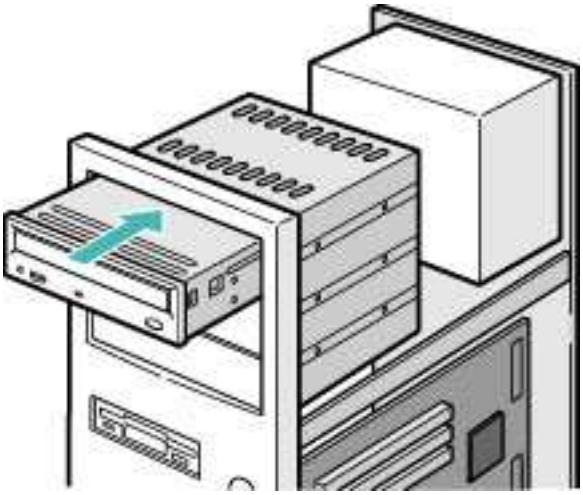
1. **Remove the 5 inch drive bay panel from the computer.**

   Refer to the manual for the computer for details.



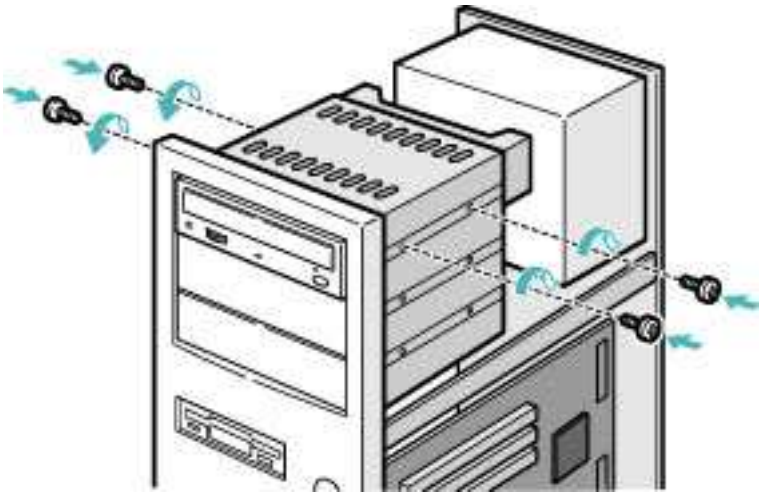
2. **Insert the drive unit into the bay.**

   Do not apply excessive pressure to the cables inside the computer.



3. **Secure the drive with the screws provided.**

   If there is not enough space behind the drive, connect the E-IDE cables etc. before securing the drive.



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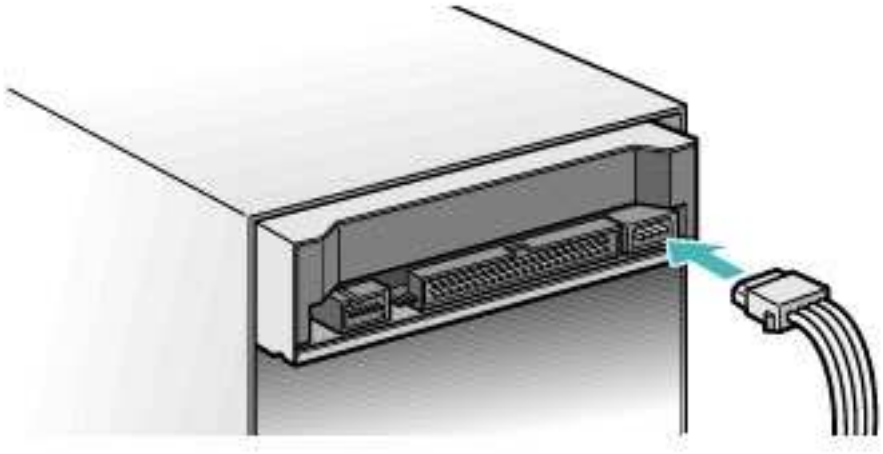
1. Jumper Set Up	2. Removing the Computer Cover
3. Mounting the Drive	4. Connecting the Power Connector
5. PC Connections	6. Sound Card Connection
7. Replacing the Computer Cover	8. Device Drivers

4. Connecting the Power Connector

Connect the power cable from the computer's power supply to the socket on the drive unit, fitting the connector properly into the socket.

If there is no spare power cable available in the computer, you will have to purchase a splitter cable of a suitable type.



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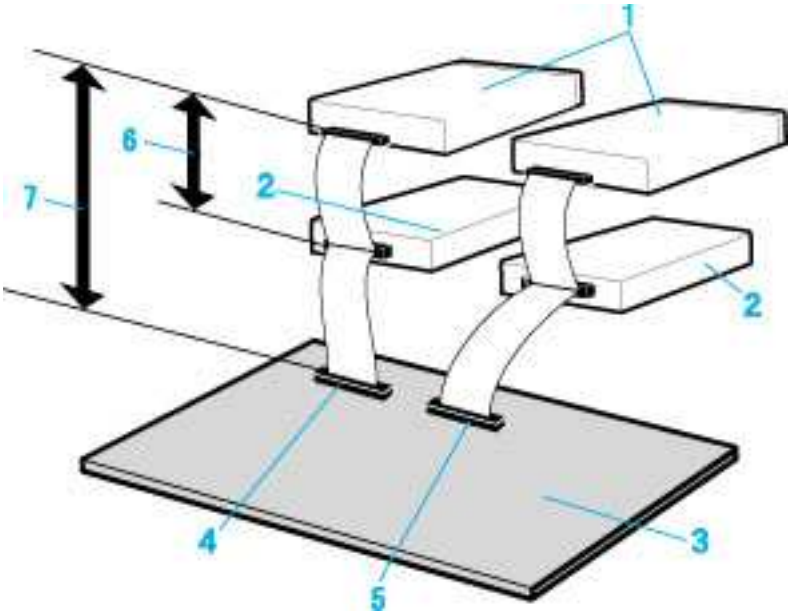
1. Jumper Set Up	2. Removing the Computer Cover
3. Mounting the Drive	4. Connecting the Power Connector
5. PC Connections	6. Sound Card Connection
7. Replacing the Computer Cover	8. Device Drivers

5. PC Connections

The drive connects to the motherboard of the host computer using an IDE interface cable.

Both Primary and Secondary connectors are usually provided on the motherboard, which may be connected as follows:

1. Master
2. Slave
3. Motherboard
4. Primary
5. Secondary
6. less than 6 inches
7. less than 18 inches



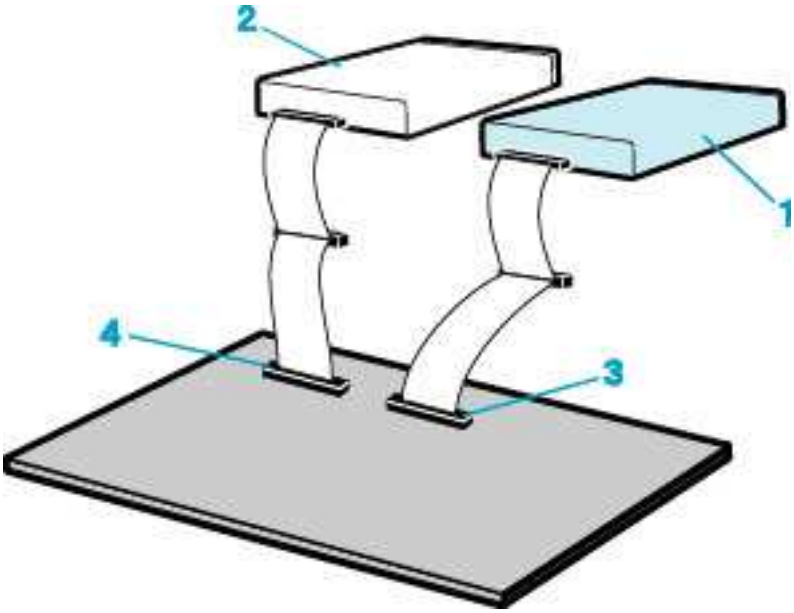
To Install as a Master Drive

To Install as a Slave Drive

To Install as a Master Drive

To install the drive as a Master, the jumper can be left as supplied from the factory.

1. Master drive (MP7083A)
2. Master drive (Booting hard disk)
3. Secondary connector
4. Primary connector
5. Slave drive (Other IDE drive)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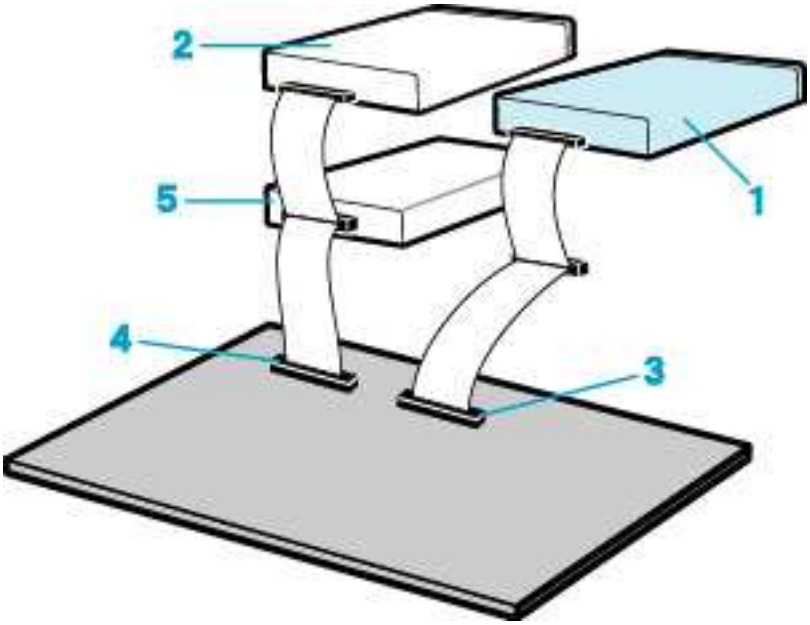
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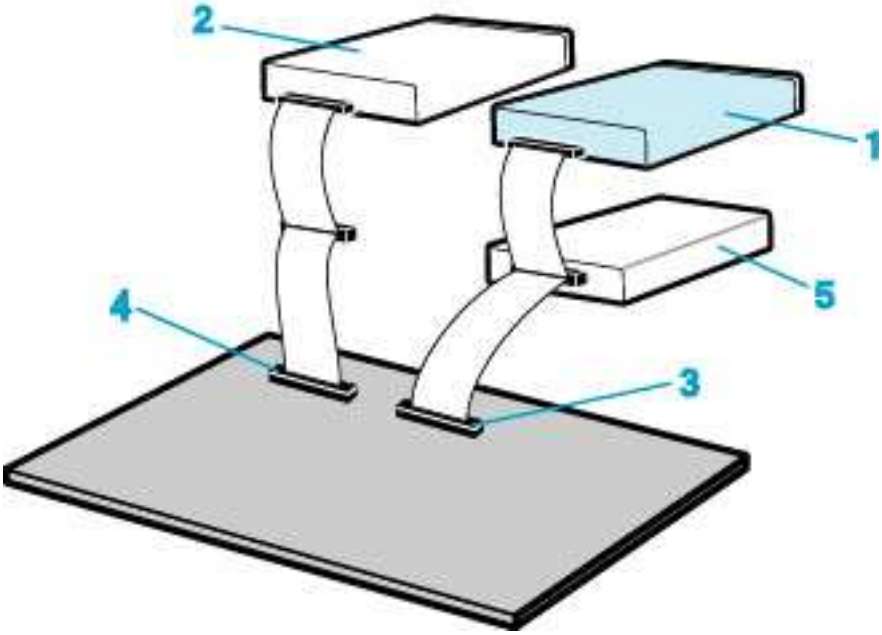
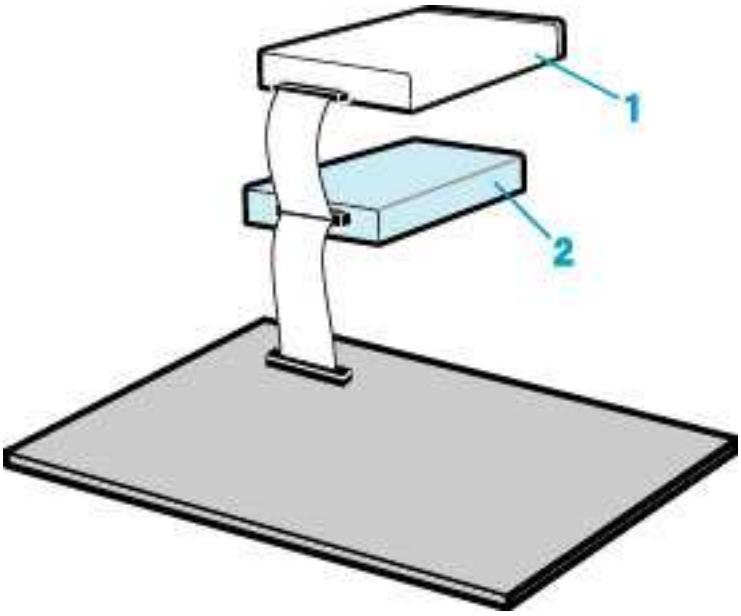
4
3

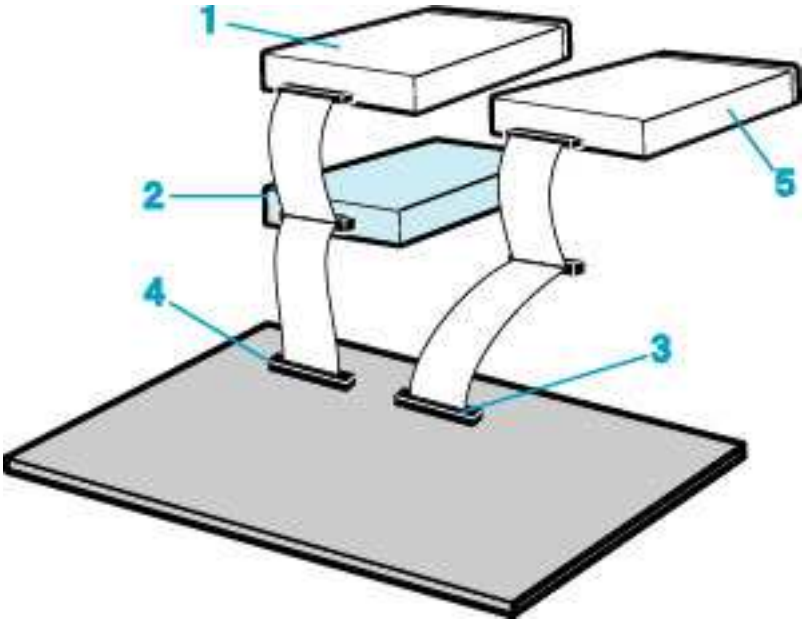

2
1
5
4
3

To Install as a Slave Drive

To install the drive as a Slave, change the jumper setting on the rear panel.

1. Master drive (Booting hard disk)
2. Slave drive (MP7083A)
3. Secondary connector
4. Primary connector
5. Master drive (Other IDE drive)





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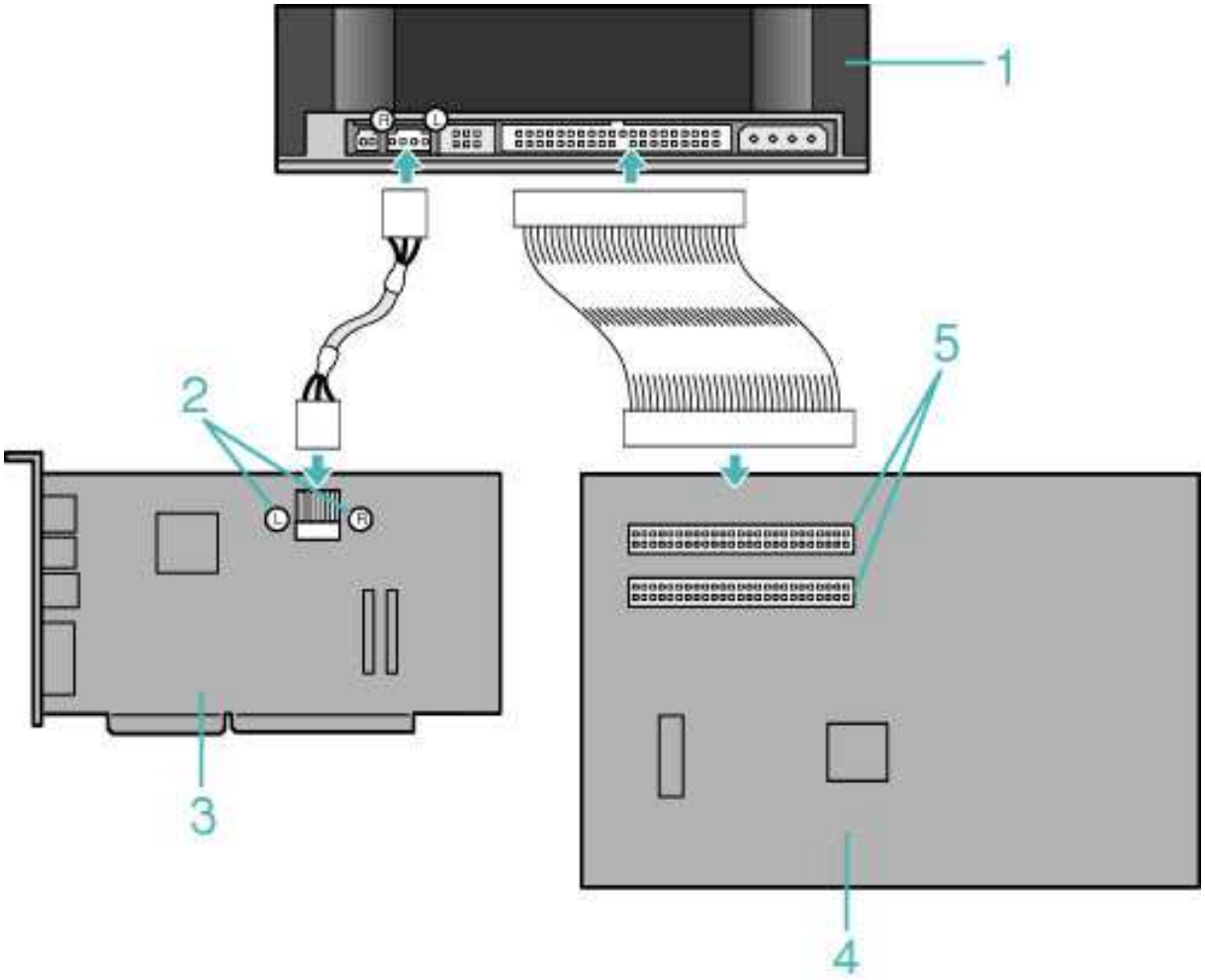
6. Sound Card Connection

If the computer has a sound card, the drive can be connected to the sound card with an audio cable.
Make sure the connections are oriented so that L corresponds to L and R to R.
Refer to the manual for the sound card for detailed information regarding connection.

1. MP7083A
2. When L,R
3. Sound Card
4. Motherboard
5. Primary or Secondary



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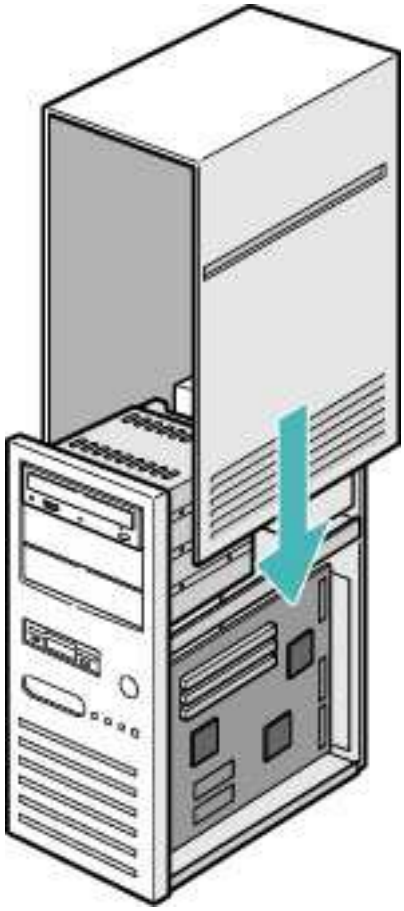
7. Replacing the Computer Cover

When the installation of the drive unit is complete, replace the computer cover.



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8. Device Drivers

When using Windows 98/95, Window NT Workstation Ver. 4.0, Windows 2000 (Professional) the installation of any special device drivers are not required.

In order to ensure normal drive operation or if the drive is not recognized by your computer, please check the following:

In order to ensure normal drive operation

If the drive is not recognized by your computer

In order to ensure normal drive operation

For Windows 98/95 Users

- The drive is displayed in [control panels] - [system] - [device manager] - [CD-ROM]
- 32-bit is displayed in [control panels] - [system] - [performance]

For Windows NT Workstation Ver.4.0 Users

- The drive is displayed on the IDE controller in [control panels] - [SCSI adapter] -[devices]

For Windows 2000 (Professional) Users

- The drive is displayed in [control panels] - [system] - [hardware] - [device manager]

If the drive is not recognized by your computer

For Windows 98/95 Users

- If a [?] indicator is displayed on the IDE controller in [control panels] - [system] -[devices manager]-[harddisk controler], you will need to contact your PC manufacturer or the motherboard manufac-turer and get the appropriate IDE controller driver.

For Windows NT Workstation Ver.4.0 Users

- If a [?] indicator is displayed on the IDE controller in [control panels] - [SCSI adapter] -[devices] , you will need to contact your PC manufacturer or the motherboard manufacturer and get the appropriate E-IDE controller driver.

For Windows 2000 (Professional) Users

- If a [?] indicator is displayed on the IDE controller in [control panels] - [system] - [hardware] - [device manager] , you will need to contact your PC manufacturer or the motherboard manufacturer and get the appropriate E-IDE controller driver.

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How to Use the Drive

Caution
When using CD-ROM discs, CD-R discs or CD-RW discs, do not attach any stickers or labels to the discs. Using discs with labels attached not only causes read and write errors, but data on the disc may be lost due to damage to the disc itself.

- **Load the disc**
- **Disc ejection**
- **Emergency Eject**
- **Using the Drive in a Vertical Position**

Specifications

Drive : MP7083A

Type	Internal type
Interface	Enhanced-IDE (ATAPI)
Data buffer memory	2MB
Data transfer speed	16.7MB/sec. (Max.) (PIO4, DMA2)
CD-R/CD-RW/High Speed CD-RW Write/Read speed (Ave.)	32X: 4.8MB/sec. (Mode1, Mode2 Form1)[Read only]*1 32X: 5.5MB/sec. (CD-DA)[Read only]*1 20X: 3.00MB/sec. (Mode1, Mode2 Form1)[Read only] 20X: 3.40MB/sec. (Mode2 Form2)[Read only] 20X: 3.45MB/sec. (CD-DA)[Read only] 8X: 1.20MB/sec. (Mode1, Mode2 Form1)[Read only] 8X: 1.36MB/sec. (Mode2 Form2) 6X: 900KB/sec. (Mode1, Mode2 Form1)/font> 6X: 1,021KB/sec. (Mode2 Form2) 6X: 1,035KB/sec. (CD-DA) 4X: 600KB/sec. (Mode1, Mode2 Form1) 4X: 681KB/sec. (Mode2 Form2) 4X: 689KB/sec. (CD-DA) 2X: 300KB/sec. (Mode1, Mode2 Form1) 2X: 340KB/sec. (Mode2 Form2) 2X: 345KB/sec. (CD-DA)
Average access time	120msec.
Initial processing time	CD-ROM 14sec. or less CD-R/RW (also High Speed CD-RW) 19sec. or less
Mounting direction	horizontal/vertical (eject button upper)
Writing Mode	Track At Once, Disc At Once, Multi-session, Packet Write, Session At Once.

Compatible formats

Format	Write	Read	Play*2
CD-DA	*	*	*
CD-ROM	*	*	
CD-Extra	*	*	*
CD-ROM XA	*	*	
Photo CD*3 *4	*	*	
CD-i*3 *4	*	*	
Video-CD	*	*	

	CD-Text: * / *
Loading system	Tray type (automatic loading/eject)
Power	DC5V, DC12V
Power consumption	12w
Weight	Less than 1.0 Kg.
Dimensions	146 X 200 X 41.3mm
Reliability	Error Rate: 10^{-12} bits or less MTBF: 100,000 hours or greater MTTR: Within 30 minutes

Environmental Conditions

	When operating	When not operating
Temperature	5°C to 40°C (No air cooling)	-30°C to 65°C
Humidity	5% to 90% R.H. (No condensation)	5% to 95% R.H. (No condensation)
Vibration	0.2 X 9.8 m/s^2 (65 - 150Hz)	1 X 9.8 m/s^2 (5 to 300Hz)
Shock	2 X 9.8 m/s^2 (6msec. half sine)	50 X 9.8 m/s^2 (11msec. half sine)
Environmental dust	Class 3 million or less (3 million particles of 0.5 micron dustper cubic foot or less)	

*1 Speed is automatically reduced if reading is unsuccessful.
*2 "Play" means playback. Also, "Read" means transferring data.
*3 CD-i and Photo-CD discs require special reader/player. Also, Photo-CD requires a license from Kodak.
*4 Bundled software does not surpport these writing formats.

The drive's appearance and specifications may change without notice.

* All references to the product in this document are to specifications in effect when the product was released.

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