LASER SAFETY

This unit employs a laser. Do not remove the cover or attempt to service this device when connected due to the possibility of eye damage.

CLASS 1
LASER PRODUCT

CAUTION

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES
OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN
HAZARDOUS LASER RADIATION EXPOSURE.

CAUTION   LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM.

VORSICHT   LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETSEN.

C E   **FOR EUROPE**
"The DVD-ROM is in conformity with the EMC directive and low-voltage directive."

ENGLISH

INTRODUCTION

Congratulations on the purchase of your DVD-ROM drive. Read carefully through this manual before installing the drive and learn how to use it.

What is DVD?

DVD, is the new standard for optical digital storage, revolutionising everything you know about computers, video and audio. It looks just like a standard CD, but is able to hold a phenomenal amount of information: 4.7, 8.5, 9.4 or even 17 gigabytes.

Your DVD-ROM drive is also backwards-compatible with your library of CD-ROM and CD-audio disks including the latest CD-R and CD-RW discs - the drive will read these in the same way as your old CD-ROM drive.

Your DVD-ROM drive

This manual guides you gently through the process of setting up the drive and fitting the drive into your computer. Take one step at a time and read each section all the way through before you start.
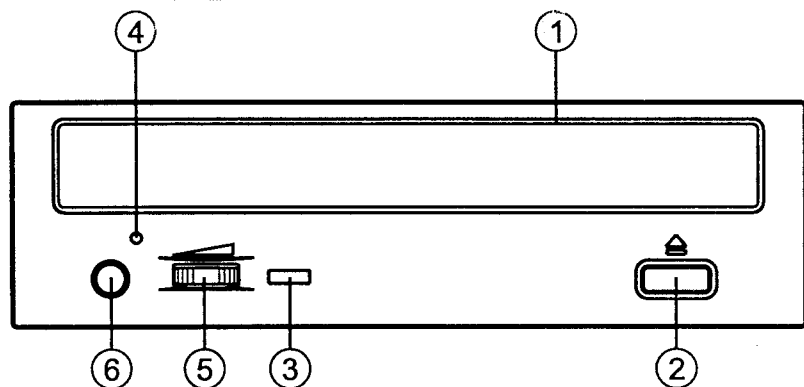
- **Disc Loading Tray** ①
- **Eject Button** ②
- **BUSY Indicator** ③
- **Forced Eject hole** ④
- **Volume Control Knob** ⑤
- **Head-Phone Jack** ⑥

Your DVD-ROM Drive

The drive has the following features:

❏ Ultimate compatibility. The drive reads audio-CD, CD-ROM, Video CD, CD-R, CD-RW, DVD-ROM, DVD-video, DVD-R, DVD-RW.

❏ Large DVD disc capacity playback from 4,7 GB to 17 GB

❏ Easy plug & play installation.

What Happens Next?

This manual shows you how to set up and install your DVD-ROM drive. You will need a small cross-head screwdriver.

NOTE
Before you work through the following steps, switch off the computer and disconnect it from the power supply.

The first step is to check if you can attach the DVD-ROM drive to your computer as it is now - or if you will need a second controller card from your computer supplier.

IDE Drives

Your DVD-ROM drive is an EIDE (Enhanced Integrated Drive Electronics) drive, also known as an ATAPI /ATA Packet Interface or IDE-drive.
Most personal computers now use IDE or EIDE to control their disk drives. Your DVD-ROM drive will work with any EIDE controller and will work with some older IDE controllers. Performance will be better with a newer EIDE controller.

Remove the Computer's Cover

Every computer's casing is different, but the casing is usually attached to the frame by a number of screws at the back. Turn the computer's case right round so you can see the back and look for four or six screws around the edge of the casing.
Remove the screws and put them somewhere safe. The outside casing will now either slide or lift off. Put it safely out of your way so you have room to work.

Find your IDE Controller

The disk drives (hard-disk, CD-ROM) in your computer are probably controlled either by a plug-in IDE or EIDE card or by an EIDE controller built in to the motherboard.

Check the user manual supplied with your computer for details of how the disk drive or drives in your computer are connected.

Newer controllers have two channels, that means two EIDE cables can be attached to the controller and each one can have two storage devices attached to it. For your hard-disk drive and your DVD-ROM drive to provide their best performance you should use one channel for hard disks and the other for your DVD-ROM drive.

Find your Primary Cable

Find the hard disk drive in your computer; the flat, 40-core cable connected to it will lead either to a plug-in card or lead directly to a socket on the motherboard. There may be two hard disks attached to this cable, or just one - with a free plug on the cable for a second hard disk - this is your controller's *primary* cable.

Find your Secondary Cable

Follow the primary cable back to your computer's motherboard or the plug-in controller card. Next to the place where the cable attaches to the controller there may be a second, identical cable or a connector where one can be attached. This is your *secondary* channel. If a cable is already attached, this is your secondary cable. If there is a connector but no cable is attached to it - you will need to contact your supplier to ask for a *40-core EIDE DVD cable*.

If your controller does not have a second channel - you will need to contact your supplier to ask for a second, or a replacement, *2-channel EIDE controller*.

INSTALLING THE DRIVE

Setting up the DVD-ROM drive

This section shows you how to set up the drive and install it in your computer. These are the steps you will follow:

1	Set the master/slave jumper plug on the drive (if necessary)
2	Find a free drive bay at the front of the computer
3	Slide in the drive
4	Connect the drive to your IDE controller
5	Connect a power cable to your drive
6	Connect sound cables to your drive (optional)
7	Replace the computer's cover

Read through this whole section covering all of the points above before you start.

The description and diagrams here are based on a typical desk-top computer.

Your computer casing or layout may be different to this. If so, refer to your computer's user guide for details of fitting additional drives.

The back of your DVD-ROM drive looks like this:

Rear Panel
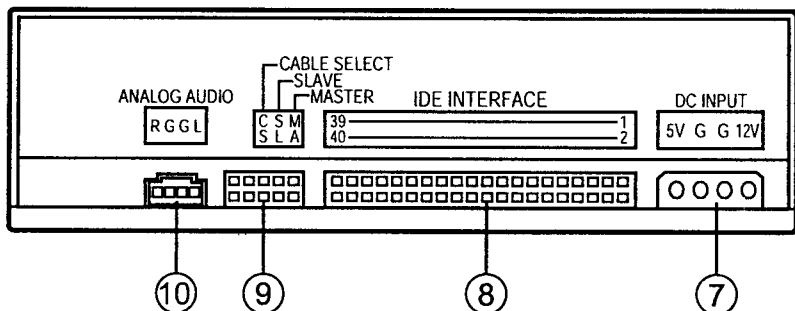
- **DC Input** ⑦

Pin	Name	Function
1	+12	Power supply input for DC+12V
2	G	Ground
3	G	Ground
4	+5	Power supply input for DC+5V

• ATAPI Interface ⑧

To connect the Enhanced-IDE port in the computer, use 40pin flat type cable.

Total length of the cable must be less than 18inchs (46cm) according to the ATA specifications.

The cable for Ultra DMA66 with 80 wires is   supported by this drive.

Pin	Name	Pin	Name	Pin	Name	Pin	Name
1	RESET-	11	DD3	21	DMARQ	31	INTRQ
2	GND	12	DD12	22	GND	32	IOCS16-
3	DD7	13	DD2	23	DIOW-	33	DAI
4	DD8	14	DD13	24	GND	34	PDIAG-
5	DD6	15	DD1	25	DIOR-	35	DA0
6	DD9	16	DD14	26	GND	36	GA2
7	DD5	17	DD0	27	IORDY	37	C S0-
8	DD10	18	DD15	28	CSEL	38	C S1-
9	DD4	19	GND	29	DMACK-	39	DASP-
10	DD11	20	(KEYPIN)	30	GND	40	GND

Remarks: The minus sign indicates active low.

• Device Configuration Jumper ⑨

Switch becomes ON when short socket is put.

Make sure the power of the drive is off before changing jumper setting.

Pin # 1 is ON at the time of shipping from the plant.

Pin	Name		Function
1	MA	on	The drive is used in Master Mode.
2	SL	on	The drive is used in Slave Mode.
3	CS	on	Using Cable Select function.
4	Reserved		Reserved
5	Reserved		Reserved

- **Audio Output ⑩**

  A connector for output of analog audio.

  This connector is compatible with `Molex 70553`, choose a suitable connection cable.

Pin	Name	Function
1	L	Left channel audio output
2	G	Ground
3	G	Ground
4	R	Right channel audio output

NOTE

Before you work through the following steps, switch off the computer and disconnect it from the main power supply.

Setting the Master/Slave Jumper

Your DVD-ROM drive has a Master/Slave jumper which must be correctly set before the drive is installed.

The settings of the master/slave jumper may need to be changed, depending on your needs. The two settings are ON and OFF, sometimes referred to as 1 and 0. If the jumper **connects** the two pins, the switch is **ON**, if the connector plug touches **only one pin**, or is not present, the switch is **OFF**.
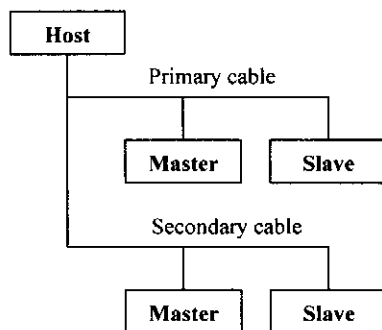
The jumper is used to set the configuration mode for the drive:

```
Reserved  Reserved  CSEL  Slave  Master

   □       □       □     □    │ □ │
   □       □       □     □    │ □ │
```

Only one jumper should ever be fitted to this switch block.

A computer which communicates with its disk drives using an IDE controller may use two cables; the primary cable and the secondary cable. Each cable may carry up to two drives; one configured as a master drive and the other configured as a slave drive. The drives may be either IDE hard disk drives or other IDE devices (in this case an ATAPI DVD-ROM drive):

```
┌──────┐
│ Host │
└──┬───┘
   │        Primary cable
   │   ┌────────────┬──────────┐
   │   │            │          │
   │  ┌──────────┐ ┌──────────┐
   │  │  Master  │ │  Slave   │
   │  └──────────┘ └──────────┘
   │        Secondary cable
   │   ┌────────────┬──────────┐
   │   │            │          │
      ┌──────────┐ ┌──────────┐
      │  Master  │ │  Slave   │
      └──────────┘ └──────────┘
```

The following table shows the recommended configurations. Check which configura-tion your computer uses and set the configuration jumper on the drive accordingly. Refer to the documentation supplied with the hard disk drives in your computer for their configuration switch settings:

Primary cable		Secondary cable		Notes
Master	Slave	Master	Slave	
ATA hard disk drive	—	—	—	One hard drive on one cable
DVD (MASTER)	—	—	—	One DVD-ROM drive on one cable
DVD (MASTER)	**DVD (SLAVE)**	—	—	Two DVD-ROM drives on one cable
ATA hard disk drive	ATA hard disk drive	—	—	Two hard drives on one cable
ATA hard disk drive	—	**DVD (MASTER)**	—	One hard drive on one cable and one DVD-ROM drive on a second cable
ATA hard disk drive	ATA hard disk drive	**DVD (MASTER)**	—	Two hard drives on one cable and one DVD-ROM drive on a second cable

It is *possible* to attach a DVD-ROM drive to the same cable as a hard disk drive, but hard disk performance suffers, so it is *not recommended*.

Find a Free Drive Bay

The DVD-ROM drive fits into any free half-heightdrive slot at the front of the computer. Free drive slots usually have a cover plate of metal or plastic which conceals the front of the slot. This is sometimes clipped in place, or sometimes fixed with two screws. Remove the cover plate ready to fit the drive.

Fit The Drive

Carefully slide the drive into the opening so that the disk tray shows at the front of the Computer.

Before you push the drive all the way in, you should connect the interface cable, power cable and audio cables to the back of the drive. It may be easier to connect the cables first before you push the drive fully into the slot.

Connect the Drive to your IDE Controller

Find the cables which you should now connect to the DVD-ROM drive.
- IDE Cable
- Power Cable
- Audio Cable

The first step is to connect the drive to the IDE-cable

Space inside personal computers is sometimes a little tight. You may need to gently rearrange the cables inside the casing in order for the spare connector to reach your DVD-ROM drive when it is fitted.

Don't worry if you have to unplug the cable from your hard disk drive, just note which way it attaches and reattach it the same way when you have finished. The DVD-ROM drive or the hard disk drive can use either plug on the IDE cable, so don't worry if you have to change their positions.

The 40-pin IDE Data cable fits into the interface connector on the back of the drive. Carefully push the connector into the socket, making sure it fits all the way in.

Connect the Drive to a DC Power Cable

You should have a small DC power lead inside your computer, ready to connect to the back of the drive. If there is no power lead available, consult your computer dealer or support service. You may need a "power splitter lead"- a Y shaped cable which taps two power outputs from one input.

The connector should only fit one way into the power socket on the back of the drive. **One face of the plug has chamfered edges - make sure the plug fits into the socket the right way up.** Carefully push the plug all the way into the socket.

Connect a Sound Cable to your Drive

If you have a sound card and speakers and would like to play audio CDs through your computer, you will need to get a sound cable from your supplier. Each sound card requires a different cable, so you will need to tell your supplier which sound card you have.

The sound cable connects to your sound card at one end and to the analogue audio connector at the rear left of the drive at the other. You will need to refer to the instructions which accompanied your sound card for details of any sound-driver software required.

The Audio-out Connectors

Audio output is through a dual 4-pin, analogue connector. Connect only to the matching fitting, part number 70066 made by Molex Corporation, or equivalent. The connector is wired as follows:

ANALOGUE AUDIO

R   GND   GND   L
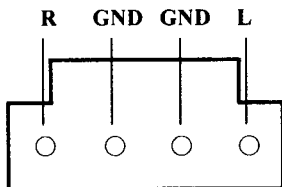
Replace the Computer's Cover

You can now push the drive all the way into the slot and, if necessary, fix it in place with screws on either side. Replace the computer's cover and replace all of the fixing screws.

WINDOWS

Your DVD-ROM drive does not need any special drivers for Windows. As a "plug and Play" operating system, Windows is complete with drivers to support all popular peripherals, including ATAPI DVD-ROM drives.

NOTE

For use under DOS a seperate device drive is needed.

CARE AND USE OF YOUR DVD-ROM DRIVE

Most aspects of caring for your DVD-ROM drive are simple matters of common sense.

However, here is a list of points to remember:

❏ Do not expose your DVD-ROM drive to extreme temperatures, excessive dust or high humidity

❏ Do not install your DVD-ROM drive near any device that produces strong electrical waves or magnetic fields

❏ Do not stand heavy objects on your DVD-ROM drive

❏ There are no user serviceable parts in your DVD-ROM drive

The Controls

Your DVD-ROM drive has the following controls and features:
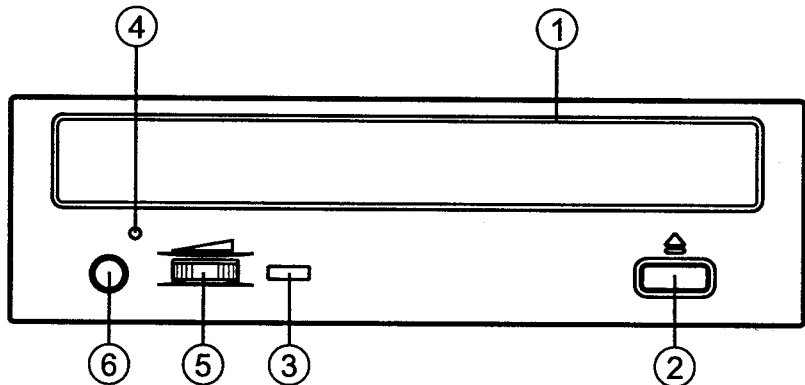
- **Disc Loading Tray ①**

  Open the loading tray by pressing the eject button, then place a CD or DVD disc into the slit with the label facing up.

  Press the eject button or push the front part of tray to load the tray with the disc. An 80mm disc cannot be played even if it has an adapter when the drive is vertical condition.

- **Eject Button ②**

  To unload /load the disc, press the button.

- **BUSY Indicator ③**

  It is lit with colored green when the data on the disc is accessed.

- **Forced Eject hole ④**

  Insert a stiff rod into the hole and push to eject the tray when the tray doesn't unload by pressing the Eject button. In the normal operation, the eject button should be used to unload the tray. Make sure the power of the drive is turned off and wait more than one minute till the disc rotation is stopped when access the eject hole.

- **Volume Control Knob ⑤**

  This is the volume control knob for adjusting sound level on the head-phone. When the knob is turned to the right, the head-phone volume goes up, when turned to the left, the volume goes down.

- **Head-Phone Jack ⑥**

  Stereo mini jack for head-phone.
 Set "Volume Control Knob" minimum position before inserting head phone jack. The audio output of rear panel is active even when a jack is inserted into the head-phone plug.

Mounting the Drive

The internal drive should be mounted within 15° of the horizontal or within 10° of the vertical.

The drive has 12 screw mounts of size M3. The length of the screw (underside of screw head to tip of screw) should not exceed 3±0.5mm.

External Dimensions and Mounting points
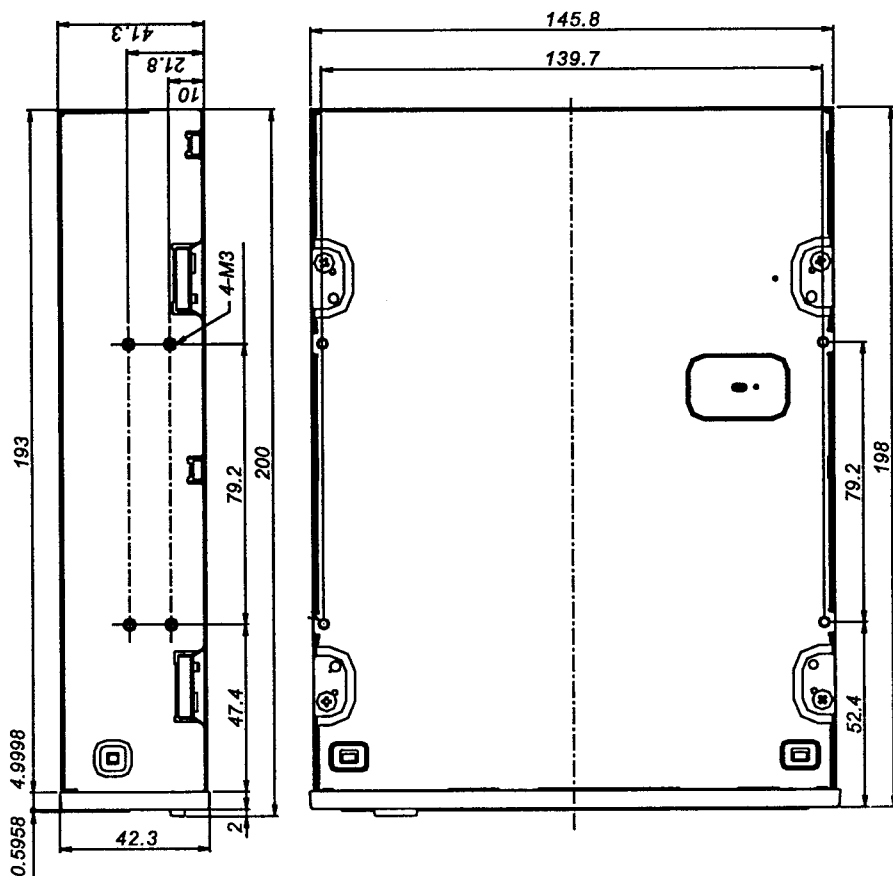
Appendix: DVD region code

The world according to DVD titles is set up into regions. There are 6 regions around the world. (Please see map below).

This DVD drive can be changed to play a DVD from any region in the world but can only be changed 5 times. This restriction makes the drive adaptable for use in any region while still maintaining compliance with RPC-II regulations.

The ability to switch from one region to another is not an ongoing feature. Please set the drive to your local region only or you may risk setting the drive permanently for a region that is not compliant with the media available in your part of the world.
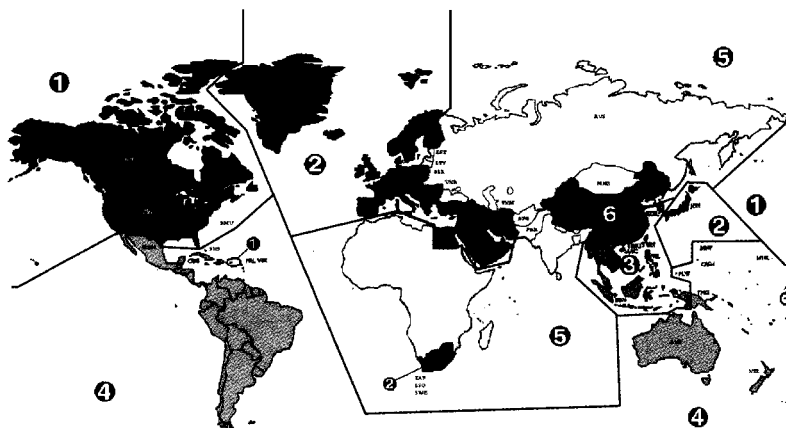
Region Code	Area
1	North America,Canada
2	Europe,Middle East,Japan,South.Africa
3	South Eastern Asia,Taiwan,Hong Kong,Korea
4	Australia,New Zealand,Latin America
5	Africa,Russia,India,Pakistan
6	China