TASCAM
TEAC Professional Division

CD·D4000MKII

CD Duplicator

Professional

COMPACT
disc
Recordable

	MASTER	SLAVE
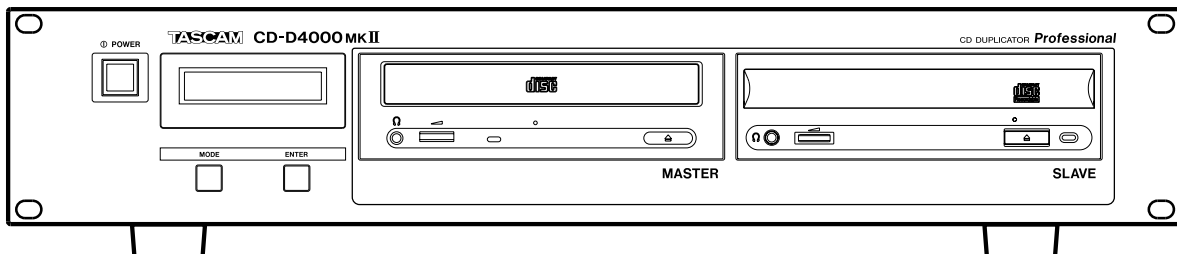
OWNER'S MANUAL

CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons..

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This appliance has a serial number located on the rear panel. Please record the model number and serial number and retain them for your records.

Model number _____

Serial number _____

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

Important Safety Precautions

IMPORTANT (for U.K. Customers)

DO NOT cut off the mains plug from this equipment.

If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer.

If nonetheless the mains plug is cut off, remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.

If this product is not provided with a mains plug, or one has to be fitted, then follow the instructions given below:

IMPORTANT: The wires in this mains lead are coloured in accordance with the following code:

GREEN-AND-YELLOW	:	EARTH
BLUE	:	NEUTRAL
BROWN	:	LIVE

WARNING: This apparatus must be earthed.

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-and-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured GREEN or GREEN-and-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

When replacing the fuse only a correctly rated approved type should be used and be sure to re-fit the fuse cover.

IF IN DOUBT — CONSULT A COMPETENT ELECTRICIAN.

For U.S.A

TO THE USER

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

CAUTION

Changes or modifications to this equipment not expressly approved by TEAC CORPORATION for compliance could void the user's authority to operate this equipment.

For the consumers in Europe

WARNING

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Pour les utilisateurs en Europe

AVERTISSEMENT

Il s'agit d'un produit de Classe A. Dans un environnement domestique, cet appareil peut provoquer des interférences radio, dans ce cas l'utilisateur peut être amené à prendre des mesures appropriées.

Für Kunden in Europa

Warnung

Dies is eine Einrichtung, welche die Funk-Entstörung nach Klasse A besitzt. Diese Einrichtung kann im Wohnbereich Funkstörungen versursachen ; in diesem Fall kann vom Betrieber verlang werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen.

CAUTION:
- **Read all of these Instructions.**
- **Save these Instructions for later use.**
- **Follow all Warnings and Instructions marked on the audio equipment.**

1) Read Instructions — All the safety and operating instructions should be read before the product is operated.

2) Retain Instructions — The safety and operating instructions should be retained for future reference.

3) Heed Warnings — All warnings on the product and in the operating instructions should be adhered to.

4) Follow Instructions — All operating and use instructions should be followed.

5) Cleaning — Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

6) Attachments — Do not use attachments not recommended by the product manufacturer as they may cause hazards.

7) Water and Moisture — Do not use this product near water — for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like.

8) Accessories — Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

9) A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

10) Ventilation — Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

11) Power Sources — This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.

12) Grounding or Polarization — This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

13) Power-Cord Protection — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

14) Outdoor Antenna Grounding — If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

"Note to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Section 820-40 of the NEC which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Example of Antenna Grounding as per National Electrical Code, ANSI/NFPA 70
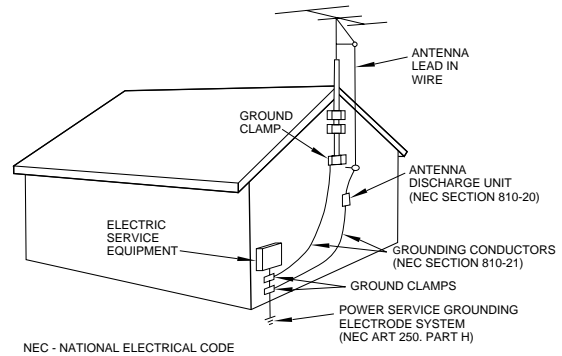
15) Lightning — For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

16) Power Lines — An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

17) Overloading — Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in risk of fire or electric shock.

18) Object and Liquid Entry — Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

19) Servicing — Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

20) Damage Requiring Service — Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

a) when the power-supply cord or plug is damaged.

b) if liquid has been spilled, or objects have fallen into the product.

c) if the product has been exposed to rain or water.

d) if the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.

e) if the product has been dropped or damaged in any way.

f) when the product exhibits a distinct change in performance – this indicates a need for service.

21) Replacement Parts — When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

22) Safety Check — Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

23) Wall or Ceiling Mounting — The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

24) Heat — The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

The TASCAM CD-D4000 MKII CD duplicator provides you with a quick and simple method of copying your original audio material in CD format at more than real-time speeds, using easily-obtainable, low-cost CD-R media, with no auxiliary equipment or computer system required.

It is especially useful for duplicating material produced using TASCAM CD-RW recorders on CD-RW media, which may be unplayable on certain types of CD player. The CD-D4000 MKII can read CD-RW discs produced on CD-RW recorders for easy duplication.

The CD-D4000 MKII can also be used to duplicate CD-ROM material to which you own copyright or for which you have appropriate permission.

NOTE

This product is designed to help you record and reproduce sound works to which you own the copyright, or where you have obtained permission from the copyright owner or the rightful licensor. Unless you own the copyright, or have obtained the appropriate permission from the copyright owner or the rightful licensor, your unauthorized recording, reproduction or distribution thereof, may result in severe civil and criminal penalties under copyright laws and international copyright treaties. If you are uncertain about your rights, contact your legal advisor. Under no circumstances will TEAC Corporation be responsible for the consequences of any illegal copying performed using the CD-D4000 MKII.

Depending on the quality of the source CD (audio CD, CD-R, CD-RW or CD-ROM), it is possible to copy material at up to eight times the real-time rate (selectable from the front panel), making it convenient for rapid duplication of a number of identical discs, etc.

Depending on the content of the source CD, you may not be able to read it, or to make a completely accurate copy of the source.

Making multiple copies of the same disc may degrade the sound quality.


NOTE

Although the operation of the CD-D4000 MKII is relatively straightforward, we strongly suggest that you read this manual before starting operations. There are a few factors affecting the production of CD-R discs using the CD-D4000 MKII which may not be immediately obvious.

1.1 Installing the CD-D4000 MKII

The CD-D4000 MKII is designed to fit into 2U of standard 19" rack space. We suggest that you leave 1U of space above the unit to allow for cooling.
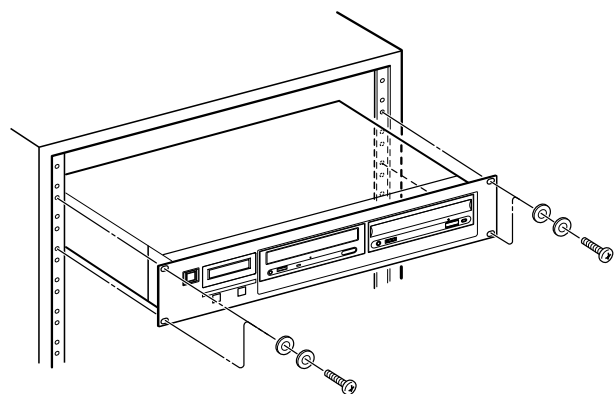
There are no connections to be made to and from the CD-D4000 MKII other than the power connection on the rear panel, as the unit is completely self-contained.

The following refer to front panel items only. The only rear panel feature is the power cord, which should be plugged into a power supply that matches the voltage shown on the rear panel label.

❶ **Power switch**

Press this switch once to power on the unit, and again to turn it off.

❷ **Display**

The 2 x 16 LCD display displays the menus and sub-menus available, and also provides information on the status of the current operation, as well as displaying error messages, etc.

❸ **MODE key**

The **MODE** key is used to cycle through the different menus and options available to put the unit into the different modes, as explained below.

❹ **ENTER key**

The **ENTER** key is used to confirm the selection of menu items and options. It also acts as a "start" key to start operations.

❺ **MASTER drive**

The **MASTER** drive is used to hold the source CD. This may be a pre-recorded audio CD or CD-ROM which you have permission to copy, a CD-R or a CD-RW disc.

The eject button is used to eject the master disc when no operation is in progress. The indicator on this drive shows when the disc is being accessed.

In the "Play audio" mode (see 7.1, "Play audio track"), a pre-recorded CD may be inserted into this drive, and played back, track by track. The head-phone jack and volume controls of this drive are operational in this mode only.

❻ **SLAVE drive**

The **SLAVE** drive holds the destination CD. This must be a CD-R disc. The CD-D4000 MKII cannot record on CD-RW discs (but can use them in the **MASTER** drive as source discs).

The eject button is used to eject the slave disc when no operation is in progress. The indicator on this drive shows when the disc is being accessed for reading or writing.

In the "Play audio" mode (see 7.1, "Play audio track"), an audio CD may be inserted into this drive, and played back. The headphone jack and volume controls of this drive are operational in this mode only.

- - - - - - - - - - - - - - - - - -
NOTE

If a disc is in a drive and cannot be removed by using the eject button, you can insert a thin stiff wire (such as the end of a paperclip) into the hole on the front panel of the drive (under the tray). This will open the tray.

- - - - - - - - - - - - - - - - - -

Spare parts for the repair of this product will be available for five years following the discontinuation of production.

3 - Care of CD-R media

The Compact Disc medium is a robust medium, and the discs can survive a good deal of physical abuse. However, there are precautions that you should take when handling CD-R discs which are different to those you should take when handling ordinary CDs.

Avoid touching the recording (non-label) side of a disc on which you will be recording. Recording on a disc requires a cleaner surface than playing back, and fingerprints, grease, etc. can cause errors in the recording process.

CD-R discs are more sensitive to the effects of heat and ultraviolet rays than ordinary CDs. It is important that they are not stored in a location where direct sunlight will fall on them, and which is away from sources of heat such as radiators or heat-generating electrical devices.

Always store CD-R discs in their "jewel cases" to avoid dirt and dust accumulating on their surfaces.

Do not put labels or protective sheets on the discs and do not use any protective coating spray.

When labeling CD-R discs, always use a soft oil-based felt-tipped pen to write the information. Never use a ball-point or hard-tipped pen, as this may cause damage to the recorded side.

Dirty discs may be cleaned using a soft dry cloth and/or a commercial CD cleaning fluid or ethyl alcohol. Do not use thinner, gasoline, benzene or LP cleaning fluid, as these will damage the disc.

If you are in any doubt as to the care and handling of a CD-R disc, read the precautions supplied with the disc, or contact the disc manufacturer directly.

3.1 Discs recommended for use with the CD-D4000 MKII

CD-R discs from the following manufacturers are recommended for use with the CD-D4000 MKII: Mitsui, TDK, Mitsubishi , Taiyo Yuden, Kodak, Pioneer Video, Fuji Photo Film, Ricoh and Hitachi (Maxell) or disks from these manufacturers which have been repackaged on an OEM basis.

3.2 Cleaning of lenses

It is important that you do not use CD lens cleaners (including CD-R or CD-ROM lens cleaners) with the CD-D4000 MKII. The reason for this is that the drives in this unit rotate at a much higher speed than those of an audio CD unit, and accordingly, the pickup lenses of the drives may be damaged by an ordinary CD lens cleaner.

4.1 Power-up procedure

When the unit is first powered up using the power switch **1**, it performs a self-check operation, and the screen shows the following:

```
TASCAM
CD-D4000 MK2
```

followed by:

```
TASCAM
Initializing
```

If the self-check is passed, the display will show the first menu screen, otherwise an error message will be displayed.

4.2 Inserting discs

Press the eject button of the **MASTER** or the **SLAVE** drive to open the disc tray.

Place discs label side uppermost in the disc tray.

To insert the discs into the **MASTER** drive, you may find it useful to place the front of the disc into the disc tray first, and then seat the back of the disc into the tray.

If a disc is placed into a tray upside-down or off-center, an error message will appear on the display.

You can close the disc trays by pressing the eject button on the drive (though many operations will close the disc trays automatically).

4.3 Power down

Before powering down the unit, eject discs from both drives (the eject mechanism requires power to work, and so you will not be able to eject the discs once power is turned off).

NOTE

Do not turn off the CD-D4000 MKII while writing to the slave disc (i.e. part of the way through a disc copy operation. If you do, the disc will be corrupt, and unusable.

4.4 Modes

The different modes available are:

- Copy
- Test write
- Compare CD-ROM
- Play audio
- Write speed selection

These are accessed by pressing the **MODE** key. Details of these modes are given below.

When the required mode is shown on the lower line of the display, press the **ENTER** key to enter the mode.

When the word *Exit* appears on the display, the **ENTER** key will halt the current operation.

5 - Disc copy

This procedure copies the material from the disc (either an audio CD or a CD-ROM) in the **MASTER** drive to the CD-R in the **SLAVE** drive. Note, however, that when copying an audio disc, to save time taken when making copies, the CD-D4000 MKII does not copy index information.

5.1 Setting the writing speed

The CD-D4000 MKII **SLAVE** drive is capable of writing information to a CD-R disc at normal (*1X*), double (*2X*), four times (*4X*), six times (*6x*) or eight times (*8x*) normal speed. The displayed nominal speed may differ sometimes from the actual speed of the writing operation, depending on circumstances.

The writing speed is set as described below.

Once the speed is selected, it is used in the CD copying and testing modes. It has no effect on the compare operations.

1   Press the **MODE** button until the display shows:

```
Mode  select
5  Write  speed
```

2   Press **ENTER**.

```
Speed  select
8X  Write
```

3   Press the **MODE** key to cycle between *8x*, *6x*, *4X*, *2X* and *1X* mode.

4   Press **ENTER** to confirm the selection.

NOTE

If you are in doubt what speed will work best, pick real-time first and experiment with the faster settings later. Usually, however, you should be able to copy most discs at the highest speed recommended for the particular brand of CD-R media you are using, as specified by the media manufacturer.

You may find it useful to test the copy procedure before committing yourself to an actual copy, however. See 6, "Test before disc copy" for details.

NOTES

Once a copy operation has started, it cannot be stopped before the disc has been finalized. The only way to stop a copy operation is to turn off the power to the unit. However, this will make the CD-R disc useless for any purpose.

Do not use warped discs or discs with off-center holes with the CD-D4000 MKII.

While the copy operation is in progress, make sure that the CD-D4000 MKII is not subjected to vibration or mechanical shocks.

5.2 Disc copy

1   Press the **MODE** key until the display appears as below (the *8x* may also read *6x*, *4x*, *2x* or *1x*), and indicates the speed at which the copy will be made—see 5.1, "Setting the writing speed" above.

```
Mode  select
1  Copy        (8X)
```

2   Press the **ENTER** key.

```
Copy          (8X)
      Ready  ?
```

3   Place the source disc in the **MASTER** disc tray, and a blank CD-R disc in the **SLAVE** disc tray.

If you decide that you do not want to make a copy at this stage, press the **MODE** key to return to the mode selection menu.

4   Press **ENTER** to start the copy operation, or if you have not closed the disc tray(s), they will close automatically, and the CD-D4000 MKII will start to check the slave disc and read the master disc.

While the slave disc is being checked, the words *Checking Media* will appear on the screen.

While the master disc is being checked, the words *Checking Data* will appear on the screen.

If the CD-D4000 MKII does not detect any potential problems with the discs, copying will start.

5 The first part of the disc to be copied is the TOC (Table of Contents). While this is being written, the display shows:

```
     Writing
       TOC
```

6 When this has been written, the data is copied over, and the percentage which has been written is shown on the display, along with an animated display to indicate that writing is currently in

progress:

```
Writing            
       7%
```

7 After the percentage counter goes over *99%*, the CD-D4000 MKII "closes" the disc, and the display shows:

```
Copy
    Finishing
```

8 When the "close" operation is complete, the display will show:

```
Copy
    Complete
```

You can now remove the discs using the eject buttons on the drives (these are disabled while the copy process is taking place). Alternatively, you can compare the original with the copy (see 7, "Compare CD-ROM").

6 - Test before disc copy

The test operation is functionally similar to the write operation, except that the writing of data to the slave disc is simulated. This is useful to make sure that data can be transferred at the selected rate between the master and slave discs.

1 Press the **MODE** key until the display shows:

```
Mode  select
2  Test  write(8X)
```

2 Press **ENTER**:

```
Test  write(8x)
      Ready ?
```

3 Insert the discs into the disc tray (original in the **MASTER**, and the blank CD-R in the **SLAVE**), and press the **ENTER** key.

The test operation continues in exactly the same way as the copy operation described above.

First, the destination slave CD-R media is checked (*Checking Media*), followed by a reading of the source master disc (*Checking Data*).

Next, the writing of the TOC is simulated (Test Writing TOC), and then writing of the data is simulated, with a percentage counter displayed:

```
Test  Writing    
         27%
```

At the end of the test procedure, the CD-D4000 MKII simulates the "disc close", and displays:

```
Test  write
      Finishing
```

followed by:

```
Test  write
      Complete
```

NOTE

*There is one other important difference between test write mode and copy mode. You can interrupt the test write mode part of the way through the operation without affecting the slave CD-R media. If you interrupt a copy procedure part of the way through the operation, the CD-R becomes unusable. To interrupt the test write operation, press and hold down the **MODE** key. The display will show Exit?. When this is displayed, press the **ENTER** key. This cancels the test write process, and the display returns to the initial status screen. If you press the **MODE** key while Exit? is shown on the display, the display returns to the test write display screen.*

This mode is used for comparing a CD-ROM which has just been duplicated using the copy mode. It cannot be used for audio CDs.

1 Press the **MODE** key until the display shows the following:

```
Mode  select
3  Compare  CD-ROM
```

2 Press **ENTER**:

```
Compare  CD-ROM
        Ready  ?
```

3 Make sure that the original disc is in the **MASTER** drive disc tray, and the copy disc is in the **SLAVE** drive disc tray.

4 Press **ENTER**:

```
Comparing      ↑
        4%
```

As the comparison process proceeds, the percentage of the process which has been completed is shown on the display.

Note that the comparison process is carried out quicker than recording or testing. The time taken for comparison is independent of any speed settings made (these only affect the recording speed).

5 When the comparison has finished successfully, the display shows:

```
Compare  finished
        Complete
```

The compare operation can be stopped at any time by pressing and holding down the **MODE** key and pressing the **ENTER** key. An error message will be displayed and you should use the **MODE** key to return to the mode selection.

If there has been an error in the comparison (i.e. the two CDs do not match) or if they do not match in any other way (the wrong pair of discs has been loaded), the compare operation will stop at the point at which the mismatch was detected, and the display will show:

```
Compare  finished
        Fail
```

7.1 Play audio track

Since it is impossible to make a bit-by-bit comparison of audio CDs, this function is provided for you to "audition" a CD copy, using a pair of headphones connected to the **MASTER** or **SLAVE** drive headphone jack.

Any standard headphones with a 3.5 mm stereo jack may be used. The volume is adjusted using the drive's volume control (turn to the right to increase the volume, and to the left to decrease the volume.

1 Press the **MODE** key until the display shows the following:

```
Mode  select
4  Play  audio
```

2 Press **ENTER:**

```
Drive  select
Master
```

3 Use the **MODE** key to toggle between Master and Slave, with a third option being to exit (Exit) the play audio mode. Press the **ENTER** key to confirm the selection:

```
Track  01  Play
1  Next  track
```

After the **ENTER** key has been pressed, a Please wait ... message is briefly shown and track 1 will start playing.

Pressing **ENTER** again will jump to the next track and start playback. If the last track is reached in this mode, and the **ENTER** key is pressed, playback will start at the first track.

4 If the **MODE** key is pressed from the screen above, the display changes:

```
Track  01  Play
2  Previous  track
```

Pressing the **ENTER** key will start playing the track before the current track. If the first track is currently being played, and the **ENTER** key is pressed, the last track will start playing.

5 Pressing the **MODE** key from the display shown above will change the display again:

```
Track  01  Play
3  Exit
```

6 Press the **ENTER** key from this screen to exit the audio play mode and return to the main mode selection screen.

NOTE

If the copied CD contains audio errors, you will be able to hear them, but no message will appear on the display. If a copied CD contains audible errors, you may want to consider re-recording at a lower speed, which will almost certainly reduce the error rate.

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8 - Error messages

No disc is shown if the **MASTER** or **SLAVE** drive does not contain a disc, or if the disc cannot be read by the drive (it is upside-down or badly positioned in the tray).

Bad disc is shown if the **SLAVE** drive does not contain a recordable CD-R disc or contains a disc which has been previously partly recorded.

Master:Bad disc will be shown if the master disc is damaged (e.g. scratched) or unreadable in any way.

Slave:Bad disc is shown if the slave disc is damaged or unwritable for any reason, the message will be shown.

The message below occurs under the circumstances described below:

```
Master:Insuffi-
cient disc space
```

The standard maximum length of an audio CD is set at 74 minutes. However, some commercial CDs are recorded with a running time a little longer than this. If the master audio CD exceeds the amount of space available on the CD-R slave disc, the display will show:

The message above will also be shown if the slave disc is of a smaller capacity than the source disc. In these instances, it is impossible to copy from the master to the slave disc.

Buffer under run is shown if the master disc is scratched or damaged, or is otherwise unreadable, and the unit has made repeated attempts to read it. It is also shown if the copy operation is attempted at too high a speed.

This is because when the CD-D4000 MKII copies data from the **MASTER** to the **SLAVE** drive, the data is placed in a RAM (Random-Access Memory) buffer between the two drives. If the **SLAVE** drive reads the data from this buffer faster than the **MASTER** drive can write to it, the buffer becomes empty, and the message above appears.

If this message appears in the Test Write Mode, you can:

• Clean the disc in the **MASTER** drive, following the usual method for cleaning CDs (however, if the master disc is warped or off-center, this message may still appear even after cleaning)

• Reduce the copy speed

NOTE

*If this message appears while the unit is in Copy mode, the destination (**SLAVE**) CD-R disc will be unusable.*

In the event of any of these errors being displayed, pressing the **MODE** key will return to the main mode selection menu.

Correct the problem, if possible (replace the offending disc correctly in the disc tray, try again with a different disc, etc.) before attempting the copy operation again.
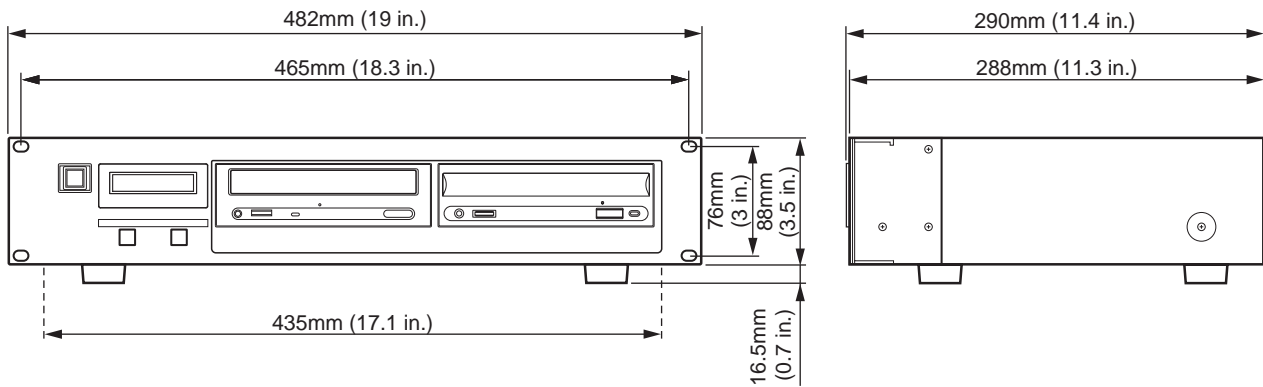
9 - Specifications

9.1 Operational specifications

Unit	Professional CD and CD-ROM duplicator
Types of media that may be copied[a]	CD-DA (audio CDs) and CD-ROM (ISO9660 standard, etc.)
Maximum write speed	8 times
Other speeds	6 times, 4 times, 2 times, real-time
Audio playback	Through drive headphone outputs
Display	2 x 16 alphanumeric backlit display

a. Subject to appropriate copyright permission being obtained

9.2 Physical specifications

Dimensions (w x h x d)	482 x 104.5 x 288 mm (19 x 4.1 x 11.3 in.)
Weight	6.3 kg (13.9 lbs)
Voltage requirements:	USA/Canada 120 VAC '60 Hz Korea 220VAC @ 60 Hz Europe/UK 230 VAC @ 50 Hz Australia 240 VAC @ 50 Hz
Power consumption	22W

9.3 Dimensional drawing