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D-500

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MULTI D/A CONVERTER



OWNER'S MANUAL

Thank you for purchasing this TEAC product.
Read this manual carefully to get the best performance from the Multi D/A Converter.



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.

SAFETY INSTRUCTIONS

CAUTION:

- Read all of these instructions.
- Save these instructions for later use.
- Follow all warnings and instructions marked on the audio equipment.

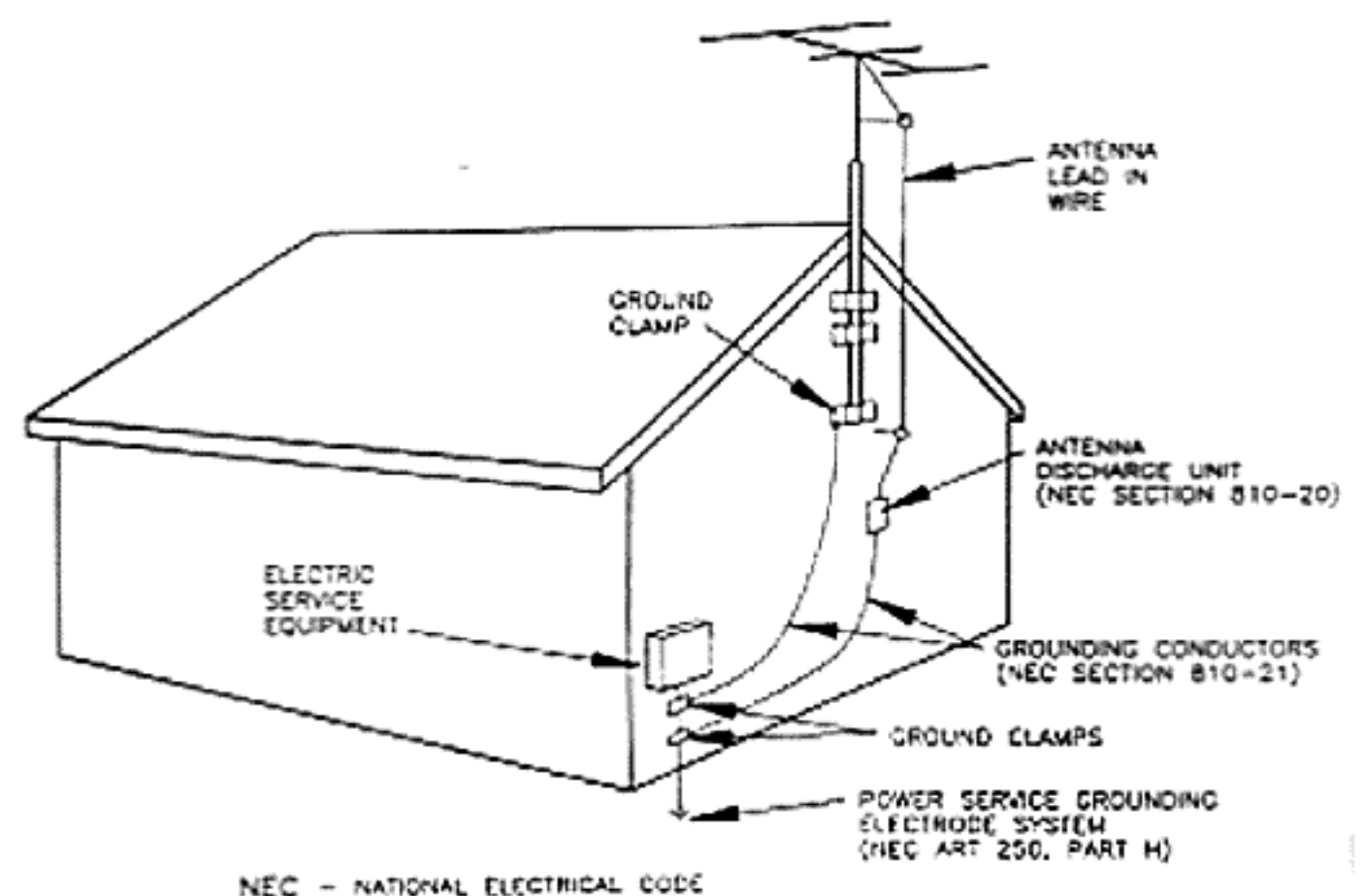
1. **Read Instructions** — All the safety and operating instructions should be read before the appliance is operated.
2. **Retain Instructions** — The safety and operating instructions should be retained for future reference.
3. **Heed Warnings** — All warnings on the appliance and in the operating instructions should be adhered to.
4. **Follow Instructions** — All operating and use instructions should be followed.
5. **Water and Moisture** — The appliance should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
6. **Carts and Stands** — The appliance should be used only with a cart or stand that is recommended by the manufacturer.
- 6A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



7. **Wall or Ceiling Mounting** — The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. **Ventilation** — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. **Heat** — The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. **Power Sources** — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. **Grounding or Polarization** — The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.
12. **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 appliance.

13. **Cleaning** — The appliance should be cleaned only as recommended by the manufacturer.
14. **Power Lines** — An outdoor antenna should be located away from power lines.
15. **Outdoor Antenna Grounding** — If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70 — 1984, provides information with respect 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. See Figure below.

EXAMPLE OF ANTENNA GROUNDING
AS PER NATIONAL
ELECTRICAL CODE



16. **Nonuse Periods** — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
17. **Object and Liquid Entry** — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
18. **Damage Requiring Service** — The appliance should be serviced by qualified service personnel when:
 - A. The power-supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the appliance; or
 - C. The appliance has been exposed to rain; or
 - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
 - E. The appliance has been dropped, or the enclosure damaged.
19. **Servicing** — The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

Before Use

■ Precautions on Installation and Use

Installation

Pay careful attention when installing the D-500 Multi D/A Converter otherwise sound could be degraded and trouble could occur.

- Make sure that the D-500 Multi D/A Converter is installed on a stable level surface.
- The D-500 may not maintain normal operational quality at excessively high temperatures, when exposed to direct sunlight or near a heater (at an ambient temperature of 40°C/104°F), or at excessively low temperatures (less than -5°C/23°F).
- If used in places with excessive humidity (more than 90%), metallic parts may rust.
- Use in a dusty atmosphere may cause defective contacts, resulting in noise.
- If condensation occurs, the D-500 may not work correctly.
- Do not place the D-500 near a power transformer or motor which may cause induced hum. Install the D-500 away from equipment incorporating such components. Also, do not place the D-500 in a place subject to excessive vibrations.

Maintenance of the unit

Do not use benzine, thinner or chemical solvent to clean the unit. Also do not wipe with chemically treated cloth, and do not use an insecticide spray near the unit. When cleaning the unit, wipe with a dry soft cloth.

Operate carefully

When using the unit, do not operate the switch and knob with too much force.

Use the correct power supply

Be sure to use the D-500 with the rated power supply, as indicated on the rear panel of the unit. Handle the power cord carefully. Especially, when unplugging the power cord from the wall outlet, be sure to hold the plug, not the cord.

If set to a voltage other than that used in your area, reset to the correct voltage as described in "Voltage Conversion" on the right.

Caution on lightning

If there is any possibility of your house being struck by lightning, be sure to unplug their power cords immediately.

When exposed to water

If the unit is exposed to water, immediately unplug the power cord and consult your dealer. If the power is turned ON again in this condition, it may cause an electric shock or fire hazard.

Do not open the cover

Do not open the top cover or bottom plate of the unit and do not insert your fingers as it may result in an electric shock or damage internal parts. If a foreign object gets into the unit by accident, immediately unplug the power cord and consult your dealer.

When moving the unit

When moving the unit, be sure to unplug the power cord and disconnect all cords attached to other components, to prevent short-circuits.

Beware of condensation

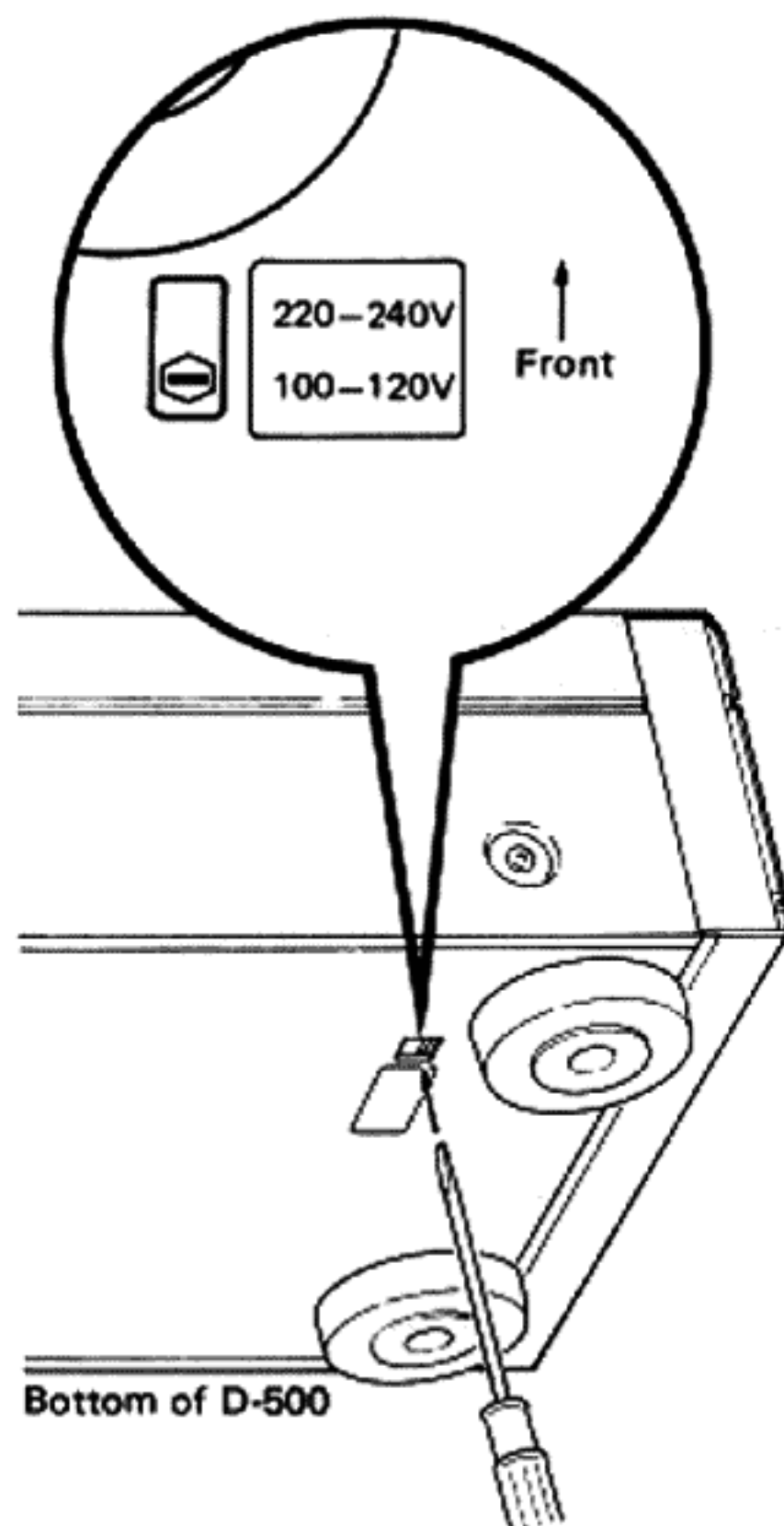
When the unit is moved from a cold place to a warm place, or if used after a sudden temperature change, condensation may occur. Water vapor in the air could condense on the internal mechanism, etc. and correct operation may be impossible. If condensation occurs, leave the unit for one or two hours after turning the power switch on, and wait until the condensation has evaporated.

■ Voltage Conversion

(For general export models only)

If it is necessary to change the voltage setting of the unit to match your area, proceed as follows:

1. DISCONNECT THE POWER LINE CORD.
2. Using a screwdriver, set the switch to the required voltage setting.



IMPORTANT (for U.K. Customers)

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

BLUE: NEUTRAL
BROWN: LIVE

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:

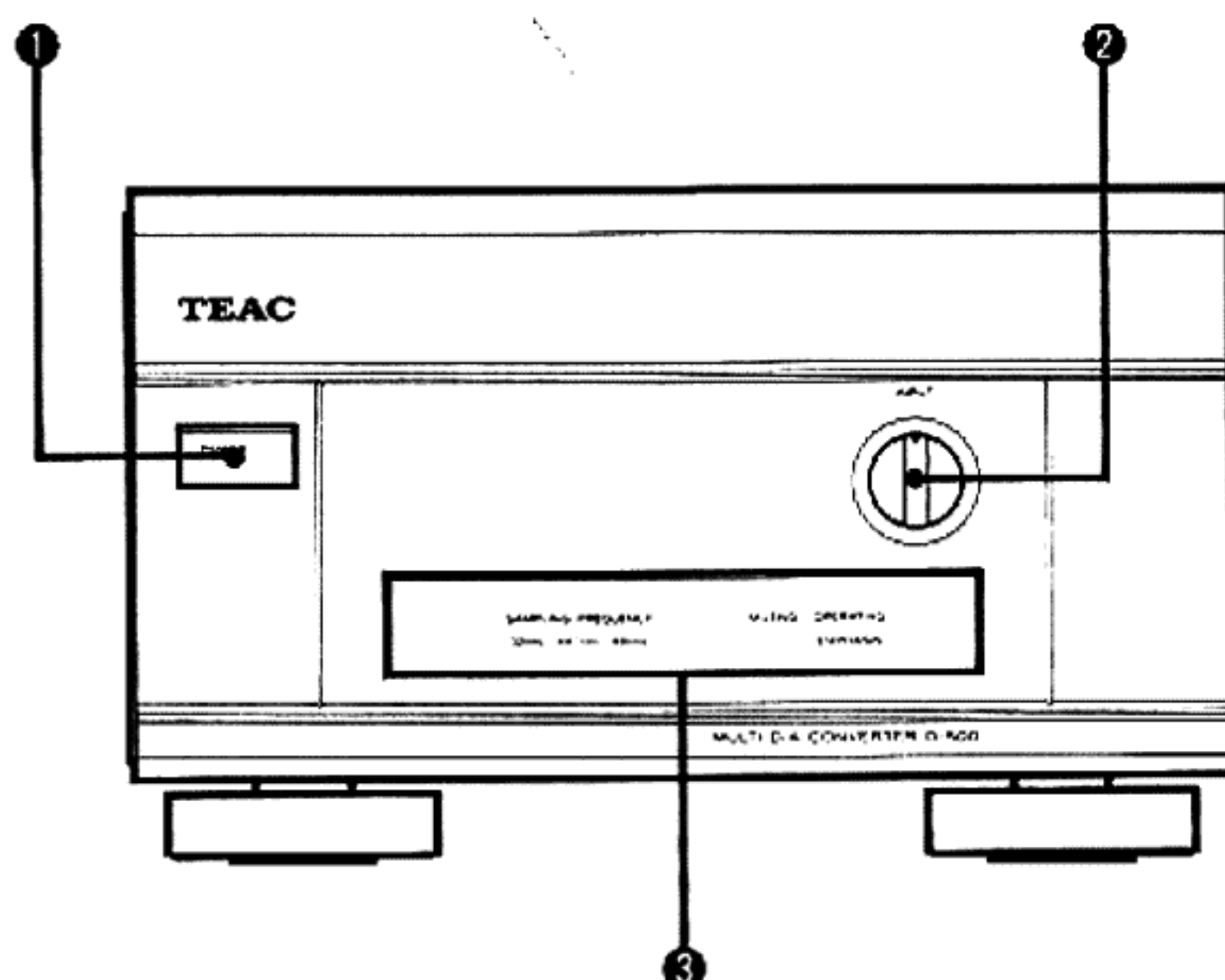
The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK. The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

In the U.K., this unit is sold without an AC plug.



This product is manufactured to comply with radio interference as defined in EEC directive "82/499/EEC".

Controls and Connectors

Front Panel



① POWER Switch

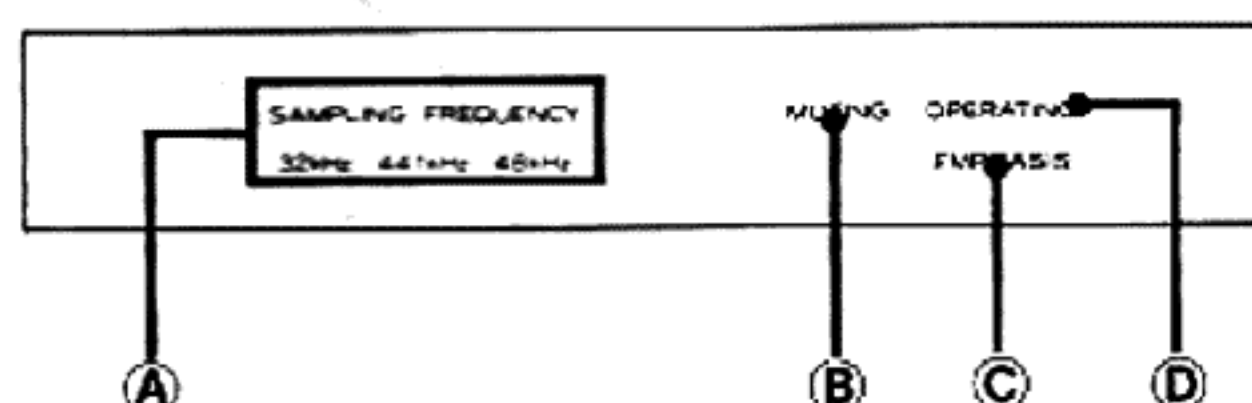
Press to turn the power to the D-500 ON (); the "SAMPLING FREQUENCY", "MUTING" or "OPERATING" indicator will light in the display window. Pressing it again turns the power OFF ().

② INPUT Selector

This knob is used to select the required input source among the four possibilities (COAXIAL 1/2, OPTICAL 3/4).

③ Display Window

This display shows the state of the unit and each operation mode, as described below:



Ⓐ SAMPLING FREQUENCY Indicators

The sampling frequency of the input digital signal selected by the INPUT selector will be set automatically, with the following indications.

32 kHz: Lights when digital signal is input from a DBS (Direct Broadcast Satellite) tuner.

44.1 kHz: Lights when a digital signal is input from a CD player or DAT deck when playing a prerecorded DAT tape.

48 kHz: Lights when a digital signal is input from a DBS tuner or DAT deck.

Ⓑ MUTING Indicator

This indicator lights temporarily when there is no signal input to the DIGITAL IN terminal of the D-500, when changing over the input source, etc.

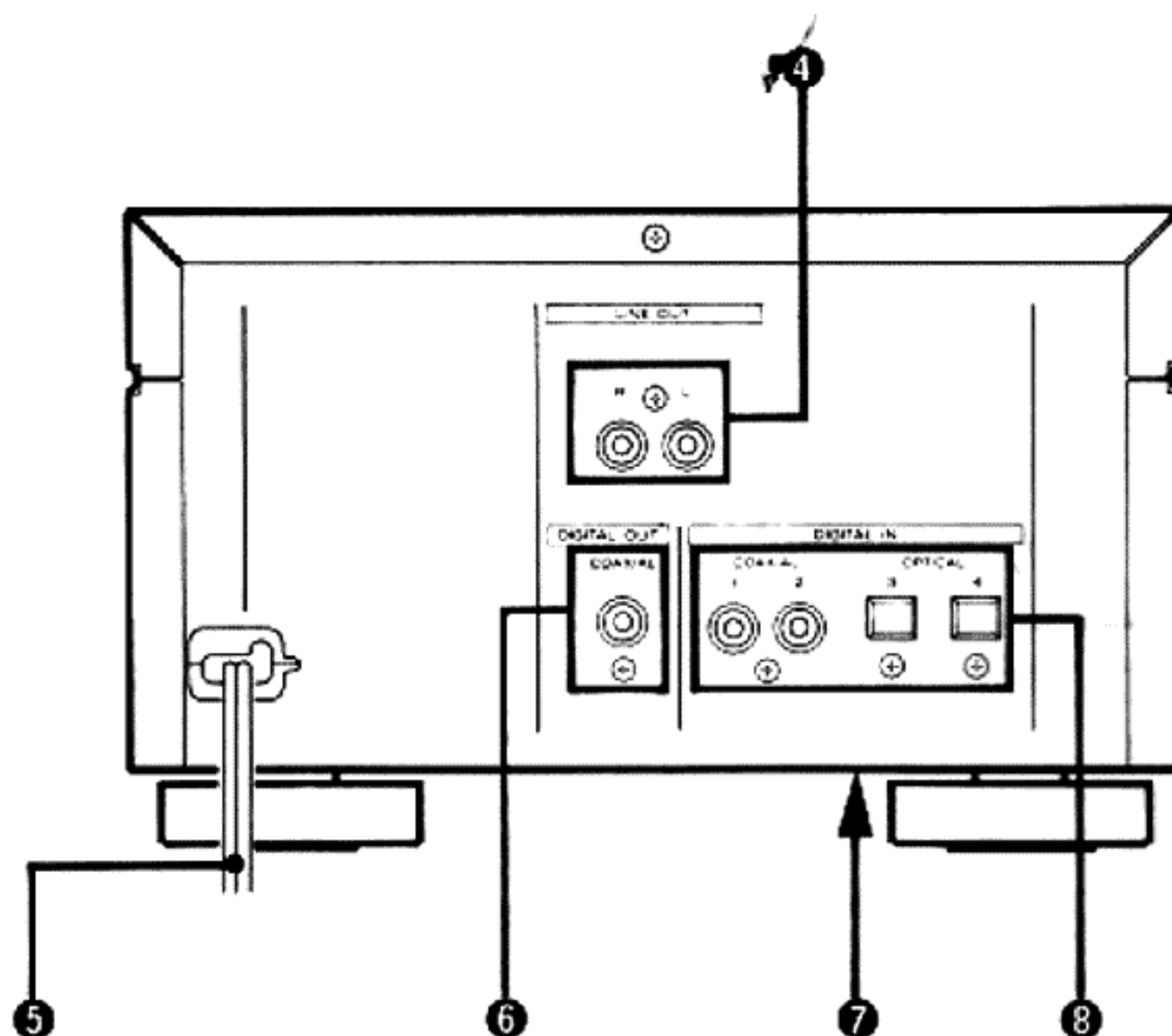
Ⓒ EMPHASIS Indicator

This indicator lights when a source with signal emphasis is being played.

Ⓓ OPERATING Indicator

This indicator lights when the digital signal input to the DIGITAL IN terminal is stabilized and correct operation is possible; it remains lit during play.

Rear Panel



④ LINE OUT Terminals

These terminals are used when the D-500 is connected to a conventional (analog) stereo amplifier.

When connecting, use an optional audio connection cord having RCA-type pin plugs at both ends, and connect the CD or AUX terminals of the stereo amplifier to these terminals.

⑤ AC Cord

Plug into an AC wall receptacle, after confirming that the voltage selector has been set correctly for your area.

⑥ DIGITAL OUT Terminal (COAXIAL)

This terminal is for the connection of an amplifier, etc. with a digital input terminal. Using coaxial cable having RCA-type pin plugs at both ends, with an input impedance of 75 ohms, connect to the DIGITAL INPUT terminal of the amplifier.

⑦ Voltage Selector (on the bottom plate)

(General export models only)

See "Voltage Conversion" on page 3.

⑧ DIGITAL IN Terminals

There are two types of digital input terminals; one for coaxial cable and the other for optical fiber cable.

COAXIAL (1/2): Using coaxial cable having RCA-type pin jacks (with an impedance of 75 ohms) at both ends, connect the DIGITAL OUT (COAXIAL) terminal of the P-500 or other digital source components to these terminals.

OPTICAL (3/4): Using optional optical fiber cable, connect the DIGITAL OUT (OPTICAL) terminal of the P-500 or other digital source component to these terminals.

Connections

■ Connection between D-500 Multi D/A Converter and P-500 CD Drive Unit

- Before connecting, be sure to read this instruction manual carefully; be sure to perform connection with the power of both units turned off.

- Both coaxial and optical cables can be used for digital interfacing between the D-500 and P-500.

When coaxial cable is used:

Using the coaxial cable provided with the P-500, connect one end to the DIGITAL OUT "COAXIAL" connector of the P-500

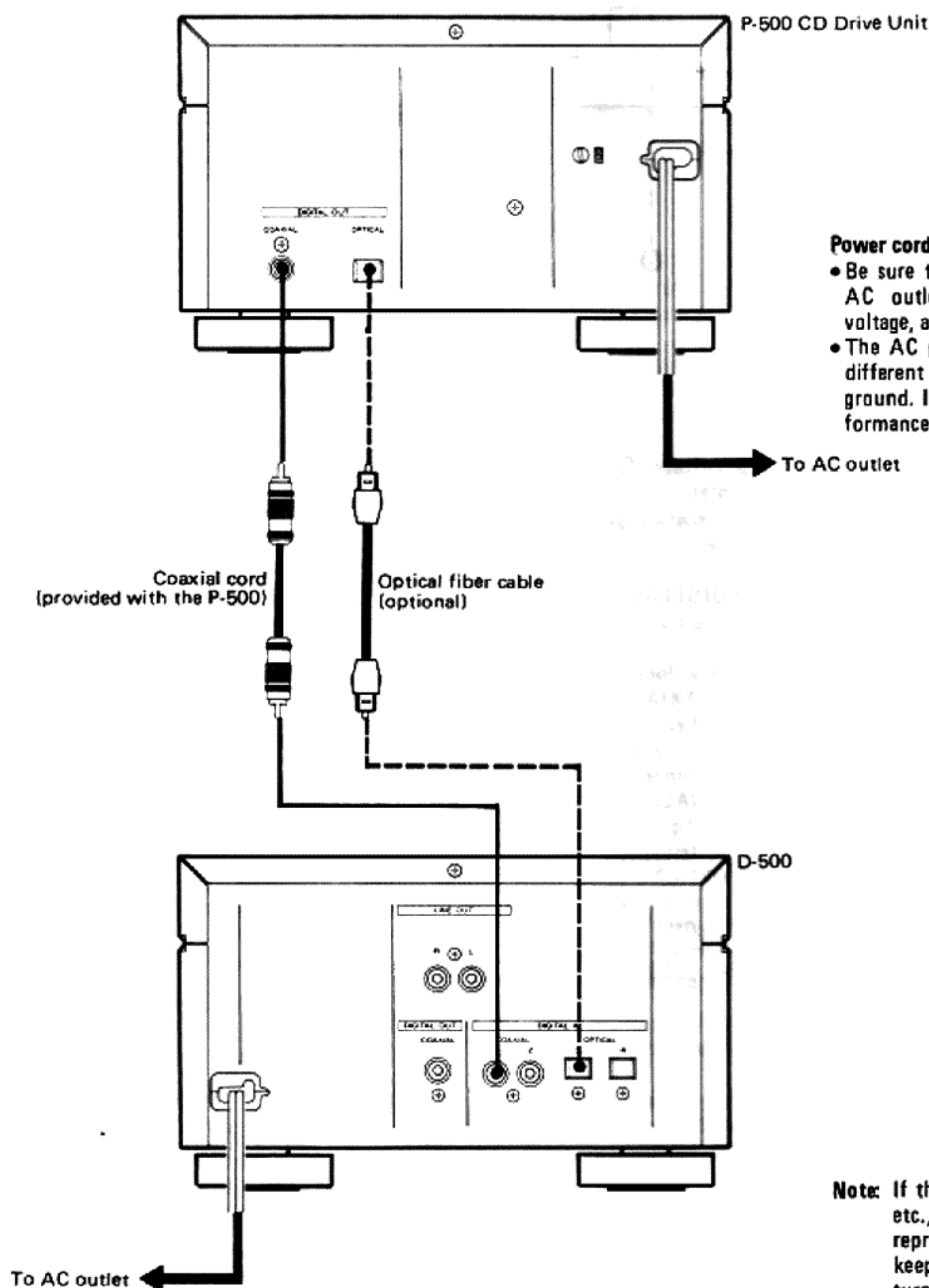
and the other end to one of the DIGITAL IN "COAXIAL" connectors (1/2) of the D-500.

When optical cable is used:

When an optionally available optical fiber cable is used, connect one end to the DIGITAL OUT "OPTICAL" connector of the P-500 and the other end to one of the DIGITAL IN "OPTICAL" connectors (3/4) of the D-500.

Notes:

- When an optical fiber cable is used for connection, remove the caps protecting both ends of the optical cable and the connectors. When an optical fiber is not used, leave the caps in place.
- Tags showing the components into which the plugs should be connected are attached at both ends of the coaxial cable provided with the P-500; connect the coaxial plugs correctly as indicated.



Power cord connection

- Be sure to connect the power cord to an AC outlet which supplies the correct voltage, as set by the voltage selector.
- The AC plug of this unit has blades with different polarities; the blade with a dot is ground. Insert correctly for optimum performance.

Note: If the D-500 is installed near a tuner, etc., noise may be introduced in the reproduced sound. In such a case, keep this unit away from the tuner or turn off the power of the tuner.

■ Connection to stereo amplifier

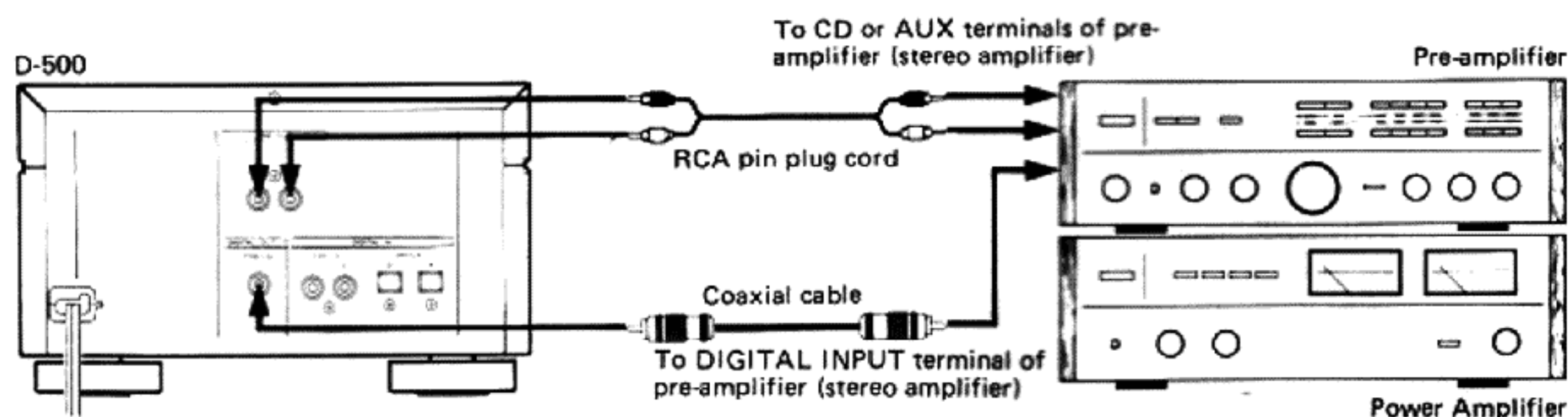
- Before making connections, be sure to read the instruction manual of the stereo amplifier (or pre-amplifier) carefully and turn the power of the stereo amplifier and the P-500 CD Drive Unit and D-500 Multi D/A Converter combination OFF.

Connection for analog interfacing:

- Using an audio connection cord with RCA-type pin plugs (optional), connect the LINE OUT terminals of the D-500 to the CD IN or AUX terminals of the amplifier. Connect the white cord to the L-channel terminals of both the D-500 and stereo amplifier, and connect the red cord to their R-channel terminals.

Connection for digital interfacing:

- If the amplifier incorporates a D/A converter conforming to the Digital Audio Interface Format, connect a coaxial cable between the DIGITAL OUT (COAXIAL) connector of the D-500 and the DIGITAL INPUT connector of the amplifier, for comparison between analog interfacing and digital interfacing, or for connection to two amplifiers at the same time.

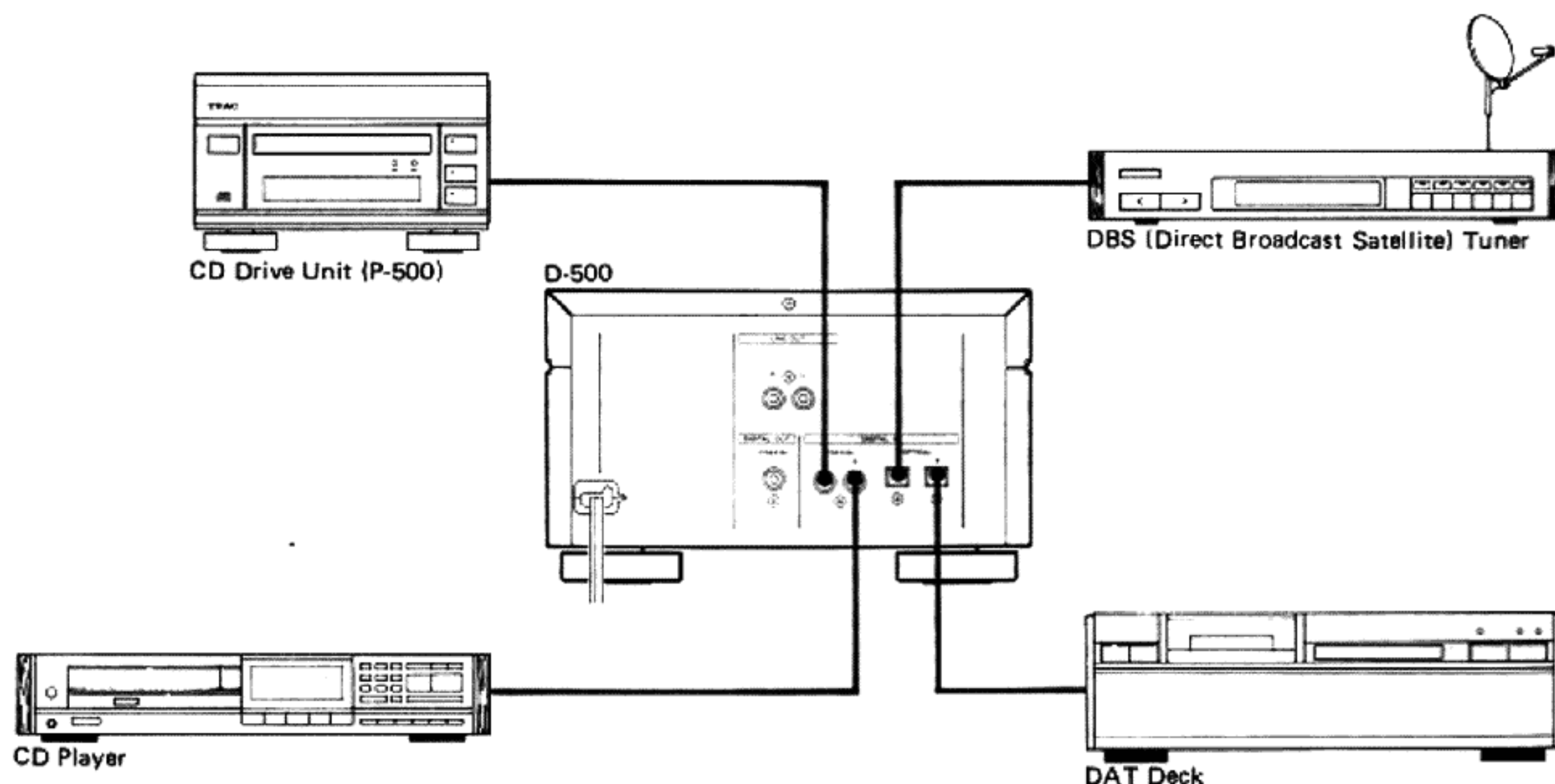


■ Connection to equipment having digital output

The D-500 Multi D/A Converter can be used for high-quality D/A conversion in place of the D/A converter built into a CD player, etc.

- Before making connections, be sure to read the instruction manuals of this unit and of the digital source component carefully and turn the power of the D-500 Multi D/A Converter and the digital source component OFF.

- Using the coaxial cable provided with the P-500 or equivalent, connect one end of the cable to the DIGITAL OUT connector of the digital source component and the other end to one of the DIGITAL IN connectors (COAXIAL 1/2, OPTICAL 3/4) of the D-500.



Specifications

<AUDIO>

Number of Channels 2

Frequency Response

0 – 20,000 Hz ± 0.3 dB

(Sampling Frequency: 44.1 kHz)

0 – 22,000 Hz ± 0.3 dB

(Sampling Frequency: 48 kHz)

0 – 15,000 Hz ± 0.3 dB

(Sampling Frequency: 32 kHz)

Signal-to-Noise Ratio Better than 110 dB
(1 kHz)

Dynamic Range Better than 100 dB (1 kHz)

Harmonic Distortion Less than 0.0016 %
(1 kHz)

Channel Separation Better than 110 dB
(1 kHz)

Sampling Frequency 48 kHz, 44.1 kHz,
32 kHz

D/A Converter 16-bit 4 D/A Converters +
ZDII + Noise Shaper

Filter 8-times oversampling 25-bit digital
filter + 3rd-order Butterworth analog
filter

Inputs – Digital

Digital Audio Interface Format

Coaxial: 0.5 Vp-p/75 ohms x 2

Optical: x 2

Outputs – Analog 2 V rms (Fixed, L/R) x 1

Digital 0.5 Vp-p/75 ohms

(Coaxial) x 1

<GENERAL>

Power Requirements

100 – 240 V/220 – 240 V

AC, 50/60 Hz, 14 W (General Export
model)

120 V AC, 60 Hz, 14 W

(U.S.A./Canada model)

✓ 220 V AC, 50 Hz 14 W

(Europe model)

Dimensions (W x H x D)

225 x 138 x 400 mm

(8-7/8" x 5-7/16" x 15-3/4")

Weight (net) 6 kg (13.25 lbs.)

• Improvements may result in specification
or feature changes without notice.

• Specifications were determined using a
sampling frequency of 44.1 kHz except as
noted.

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PRÉVENIR LES CHOCS ÉLECTRIQUES NE PAS UTILISER CETTE FICHE POLARISÉE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ÊTRE INSÉRÉES À FOND SANS EN LAISSER AUCUNE PARTIE À DÉCOUVERT.

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