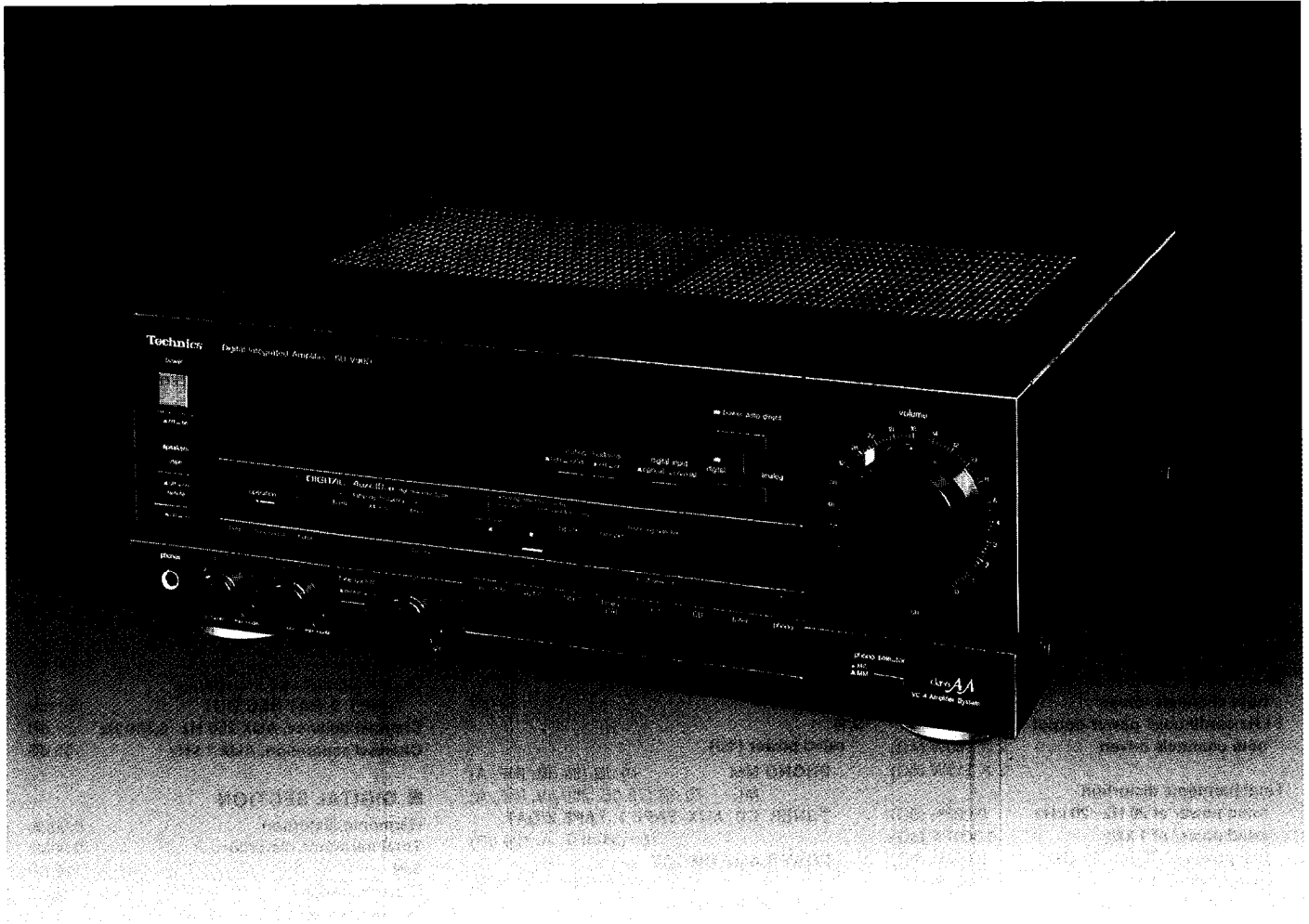


Technics

Digital Integrated Amplifier

SU-V90D

OPERATING INSTRUCTIONS



Notes:

- Specifications differ according to the area code.
- The "EK" area code, for example, indicates United Kingdom specifications.
- The "EK" indication is shown on the packing case and serial number tag.

Before operating this unit, please read these instructions completely.

Dear Stereo Fan

We want to thank you for selecting this product and to welcome you to the growing family of satisfied Technics product owners around the world. We feel certain you will get maximum enjoyment

from this new addition to your home. Please read these operating instructions carefully, and be sure to keep them handy for convenient reference.

Contents

• For United Kingdom	2	• Front Panel Controls and Functions	6
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For United Kingdom

The "EK" indication is shown on the name plate.

Important

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 unit 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.

Technical Specifications (DIN 45 500)

■ MAIN AMP. SECTION

20 Hz~20 kHz continuous power output
both channels driven $2 \times 100\text{W}$ (8 Ω)
1 kHz continuous power output
both channels driven $2 \times 150\text{W}$ (4 Ω)
 $2 \times 115\text{W}$ (8 Ω)

Total harmonic distortion
rated power at 20 Hz~20 kHz 0.002% (8 Ω)
rated power at 1 kHz 0.0007% (8 Ω)
half power at 20 Hz~20 kHz 0.002% (8 Ω)
half power at 1 kHz 0.0007% (8 Ω)

Intermodulation distortion
rated power at 250 Hz: 8 kHz=4:1, 8 Ω 0.005%
rated power at 50 Hz: 7 kHz=4:1, SMPTE, 8 Ω 0.005%

Power bandwidth
both channels driven, -3 dB
5 Hz~60 kHz (8 Ω , 0.025%)

Residual hum and noise 0.8 mV
Damping factor 30 (4 Ω), 60 (8 Ω)

Headphones output level and impedance
700 mV/330 Ω

Load impedance
MAIN or REMOTE 4 Ω ~16 Ω
MAIN and REMOTE 8 Ω ~16 Ω

■ PRE AMP. SECTION

Input sensitivity and impedance
PHONO MM 2.5 mV/47k Ω
MC 170 μ V/220 Ω
TUNER, CD, AUX, TAPE 1, TAPE 2/DAT 150 mV/18k Ω
POWER AMP DIRECT 1 V/47k Ω

PHONO maximum input voltage (1 kHz, RMS)
MM 160 mV
MC 12 mV

S/N
rated power (4 Ω)

PHONO MM 79 dB (88 dB, IHF, A)
MC 70 dB (72 dB, 250 μ V, IHF, A)

TUNER, CD, AUX, TAPE 1, TAPE 2/DAT
100 dB (IHF, A: 106 dB)

POWER AMP DIRECT
106 dB (IHF, A: 115 dB)

-26 dB power (4 Ω)
PHONO MM 79 dB
MC 68 dB

TUNER, CD, AUX, TAPE 1, TAPE 2/DAT
86 dB

50 mW power (4 Ω)
PHONO MM 76 dB
MC 69 dB

TUNER, CD, AUX, TAPE 1, TAPE 2/DAT
80 dB

Frequency response
PHONO RIAA standard curve
 ± 0.2 dB (20 Hz~20 kHz)

TUNER, CD, AUX, TAPE 1, TAPE 2/DAT
0.8 Hz~150 kHz (-3 dB)
+0, -0.1 dB (20 Hz~20 kHz)

POWER AMP DIRECT 0.8 Hz~150 kHz (-3 dB)

Tone controls
BASS 50 Hz, +10 dB~-10 dB
TREBLE 20 kHz, +10 dB~-10 dB

Loudness control (volume at -30 dB)
50 Hz, +9 dB

Muting -20 dB

Output voltage and impedance
TAPE 1, 2/DAT REC OUT 150 mV
Channel balance, AUX 250 Hz~6,300 Hz ± 1 dB
Channel separation, AUX 1 kHz 55 dB

■ DIGITAL SECTION

Harmonic distortion 0.002%
Total harmonic distortion 0.003%
S/N 110 dB
Dynamic range 99 dB
Frequency response
2 Hz~20 kHz, +0.3 dB, -0.3 dB

■ GENERAL

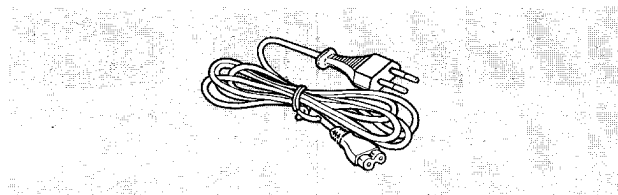
Power consumption 765W
Power supply
For continental Europe AC 50 Hz/60 Hz, 220V
For United Kingdom, Australia and others
AC 50 Hz/60 Hz, 110V/127V/220V/240V
Dimensions (W×H×D) 430 × 158 × 397 mm
(16-15/16" × 6-7/32" × 15-5/8")
Weight 13.2 kg (29.04 lb.)

Notes:

- Specifications are subject to change without notice.
Weight and dimensions are approximate.
- Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

Accessory

- AC power supply cord (Refer to page 5.)..... 1
- For United Kingdom and some areas, the power cord is directly attached to the unit.
- Configuration of AC power supply cord differs according to area.



Suggestions for Safety

■ Use a standard electrical AC wall outlet

1. Use from an AC power source of high voltage, such as for air conditioners, is very dangerous.

Be extremely careful not to make a connection to the electrical outlet for a large air conditioner or central-heating unit which uses high voltage, because there is the possibility of fire.

2. A DC power source cannot be used.

Be sure to check the power source carefully, especially on a ship or other place where DC is used.

■ Connection and removal of the power cord plug

1. Wet hands are dangerous.

A dangerous electric shock may result if the plug is touched by wet hands.

2. Don't pull the power cord.

Always grasp the plug; never pull the cord itself.

■ Never attempt to repair or reconstruct this unit

A serious electric shock might occur if this unit is repaired, disassembled or reconstructed by unauthorized persons, or if the internal parts are accidentally touched.

■ For families with children

Never permit children to put anything, especially metal, inside this unit. A serious electric shock or malfunction could occur if articles such as coins, needles, screwdrivers, etc. are inserted through the ventilation holes, etc. of this unit.

■ Turn off after use

If the unit is left for a long time with the power on, this will not only shorten its useful operation life, but may also cause other unexpected trouble.

■ If water is spilled on the unit

Be extremely careful if water is spilled on the unit, because a fire or serious electric shock might occur. Immediately disconnect the power cord plug, and consult with your dealer.

■ Place the unit where it will be well ventilated, and away from direct sunlight

Place this unit at least 10 cm (4") away from wall surfaces, etc., and away from direct sunlight. Be careful that curtains and similar materials do not obstruct the ventilation holes.

■ Keep the unit away from heaters, etc.

Heat can damage the external surfaces as well as internal circuits and components.

■ Avoid spray-type insecticides

Insecticides might cause cracks or "cloudiness" in the cabinet and plastic parts of this unit. The gas used in such sprays might, moreover, be ignited suddenly.

■ Never use alcohol or paint thinner

These and similar chemicals should never be used, because they may damage the finish.

■ If trouble occurs

If, during operation, the sound is interrupted or indicators no longer illuminate, or if abnormal odor or smoke is detected, immediately disconnect the power cord plug, and contact your dealer or an Authorized Service Center.

Before Use

Be sure to disconnect the mains cord before adjusting the voltage selector.

Use a minus (–) screwdriver to set the voltage selector (on the rear panel) to the voltage setting for the area in which the unit will be used.

(If the power supply in your area is 117 V or 120 V, set to the "127 V" position.)

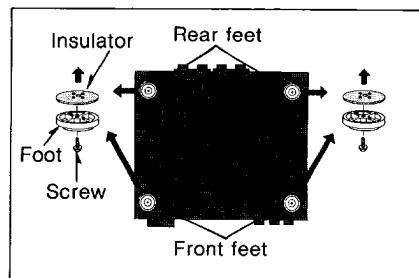
Note that this unit will be seriously damaged if this setting is not made correctly. (There is no voltage selector for some countries; the correct voltage is already set.)

Connections

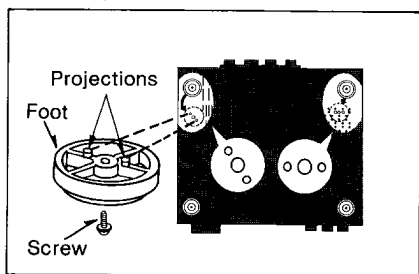
Placement with other equipment

If this unit is to be placed on top of a component that has a lesser depth dimension, be sure to first change the location of the rear "feet" of this unit, as described below.

- 1 Remove the screws from the 4 feet of this unit, and then remove the 4 insulators.



- 2 Re-install the front feet in their former positions, and install the rear feet in the positions shown in the illustration. (Be sure to fit the projections into the holes correctly before tightening the 4 screws).

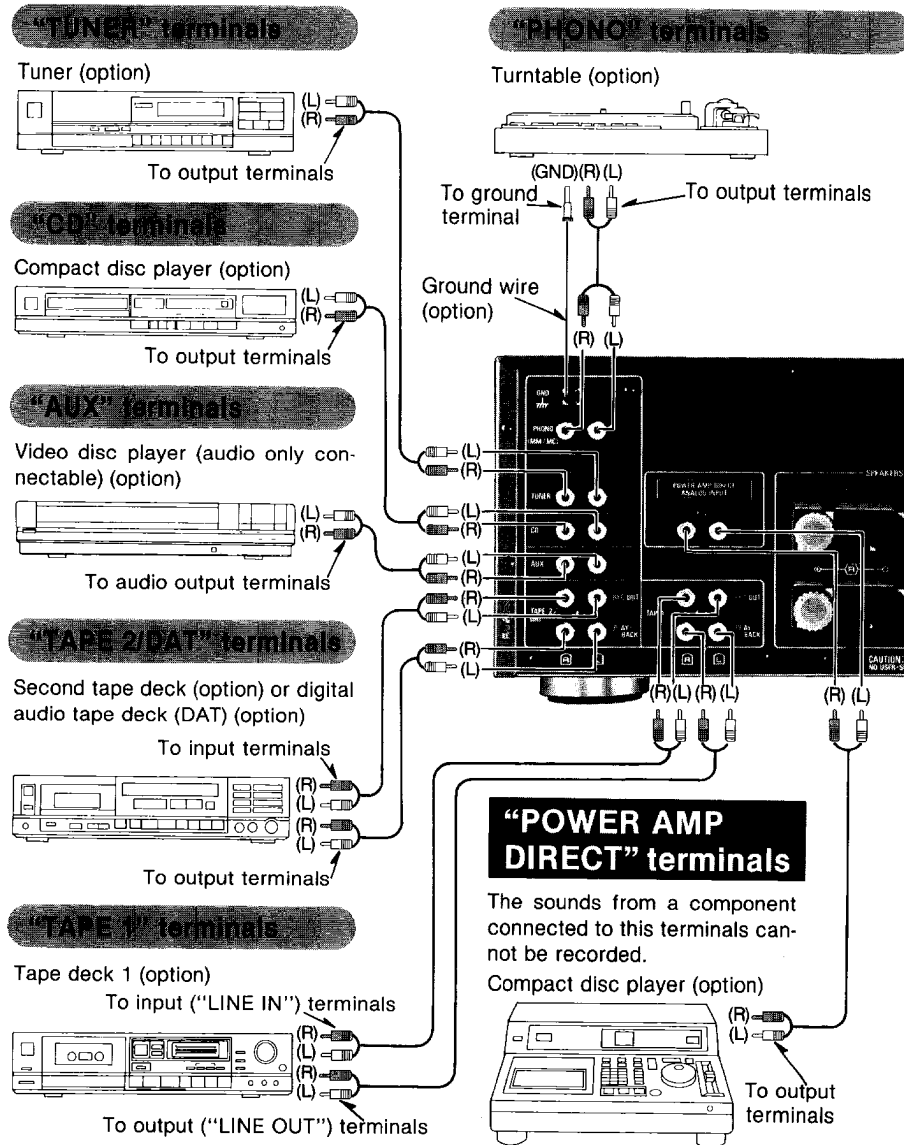


Note:

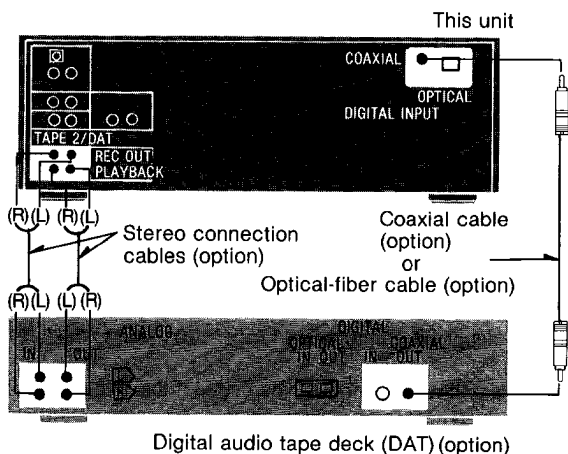
If the feet are later re-installed at their original locations, be sure to use the insulators in the way that they were originally installed.

Connections to analog terminals

Make connections to each component in the system by using stereo connection cables (option).



About the "DIGITAL INPUT" terminals and digital audio tape deck (DAT) connections



- If connections are made to this unit from a "DIGITAL OUT" ("OPTICAL" or "COAXIAL") terminal of the digital audio tape deck and, at the same time, from its "ANALOG" ("LINE IN" and "LINE OUT") terminals, make the connection from the "ANALOG" terminals of the DAT deck to the "TAPE 2/DAT" terminals of this unit.
If the "ANALOG" terminals of the DAT deck are connected to the "TAPE 1" terminals of this unit, a "loop" may occur of the digital signals and the analog signals.
- Sounds from the component connected to the "DIGITAL INPUT" terminals of this unit can be recorded only by the tape deck connected to the "TAPE 1" terminals.
(Refer to "Recording" on page 10.)
For detailed information concerning DAT recording, refer to the operating instructions of the DAT deck.

Note: Careful note should be taken of the following points. If these points are not heeded, a malfunction of the unit's operation could occur.

1. Only analog-type components should be connected to the analog input terminals.
2. Only digital-type components should be connected to the digital input terminals.
3. Optical-fiber cables must absolutely never be bent.

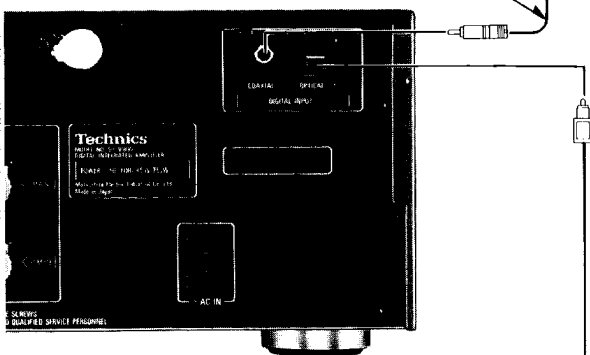
Connections to "DIGITAL INPUT" terminals

This terminal can be used for the connection of a compact disc player equipped with a "DIGITAL" terminal or a digital audio tape deck (DAT) used for playback only, etc.

Compact disc player (option)



Coaxial cable (option)

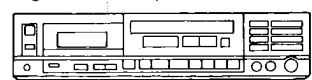


About the "COAXIAL" terminal

This terminal is a 75-ohm coaxial terminal; using a toroidal pulse transformer, it functions to provide electrical oscillation between components, thereby preventing signal deterioration resulting from noise generated within the ground loop, etc.

This terminal can be used for the connection of a compact disc player equipped with a "DIGITAL" terminal or a digital audio tape deck (DAT) used for playback only, etc.

Digital audio tape deck (DAT) (option)



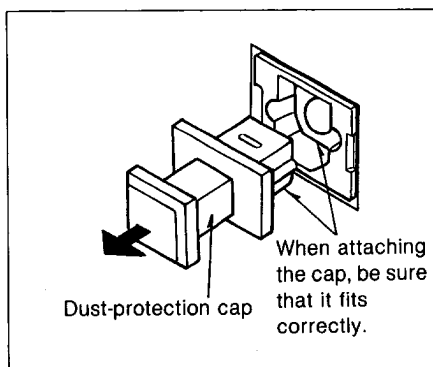
To "OPTICAL OUT" terminal

Optical-fiber cable (option)

About the "OPTICAL" terminal

This terminal is an optical-connector terminal; because electric signals are converted to optical signals for transmission, there is no adverse effect upon the signals as a result of externally generated electrical noise, thus making possible the transmission of digital audio signals of extremely high quality.

A dust-protection cap is used to cover and protect the "OPTICAL" terminal. Remove this cap only when the "OPTICAL" terminal is to be used.



Note:

Be sure to use the dust-protection cap to again cover the "OPTICAL" terminal when it is not being used. This cover serves to prevent the entry of dust, etc. into the terminal, because such foreign material can cause incorrect operation.

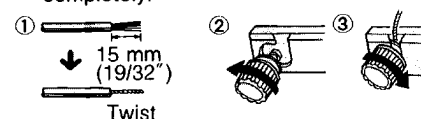
"SPEAKERS" terminals

Load impedance:

- When only the "MAIN" or only the "REMOTE" terminals are used: 4–16 ohms
- When both the "MAIN" and the "REMOTE" terminals are used simultaneously: 8–16 ohms

Connection of speaker wires

- ① Strip off the outer covering, and twist the center conductor.
- ② Turn 5~6 times.
- ③ Insert wire and tighten screw completely.

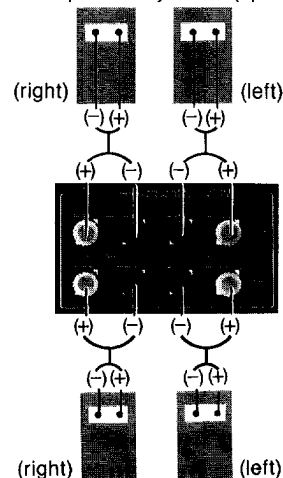


Notes:

1. To prevent damage to circuitry, never short-circuit plus (+) and minus (–) speaker terminals.
2. Be sure to only connect positive (+) cords to positive (+) terminals, and negative (–) cords to negative (–) terminals.



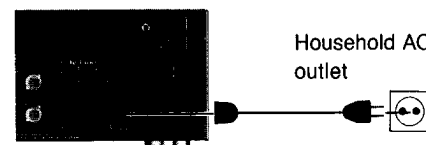
Main speaker systems (option)



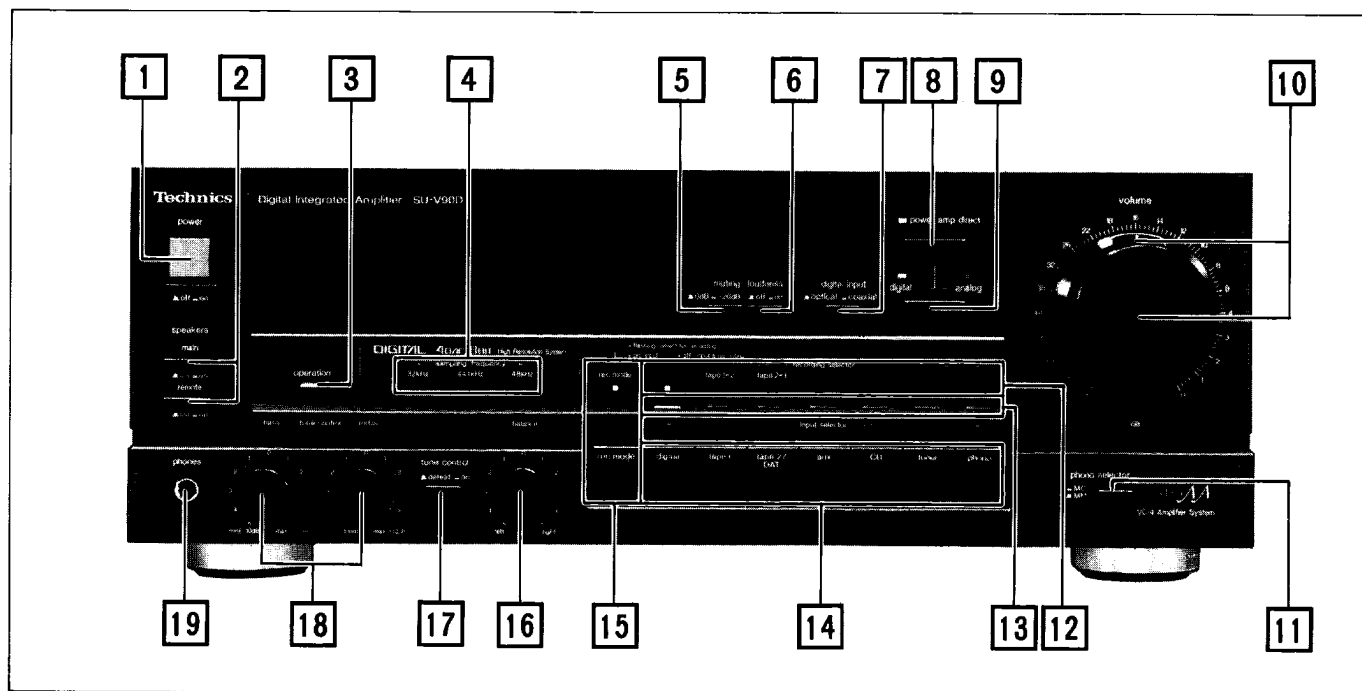
Remote speaker systems (option)

AC power supply cord (included)

- For United Kingdom and some areas, the power cord is directly attached to the unit.
- Fit a suitable plug to the AC power supply cord.
- Configuration of AC power supply cord differs according to area.



Front Panel Controls and Functions



1 Power switch (power)

2 Speaker selectors (speakers)

These selectors are used to turn the speaker systems on and off.

3 Operation Indicator (operation)

This indicator illuminates approximately 5 seconds after the power is switched ON, indicating that this unit is in the operational condition. If there is any abnormal condition of the output signals to the speaker systems (such as, for example, a short-circuit of the speaker connection wires, etc.), this abnormal condition will be detected, the protection circuitry will function, and this indicator will stop illumination.

4 Sampling frequency indicators (sampling frequency)

These indicators function to illuminate to indicate the detection of the sampling frequency of the digital signals input to the "DIGITAL INPUT" terminals on the rear panel of this unit. (Illumination occurs when digital signals are received, even a digital component is not in the play mode.)

32 kHz: For digital signals with the sampling frequency of 32 kHz mode

44.1 kHz: CD and others

48 kHz: For digital signals with the sampling frequency of 48 kHz mode

5 Audio muting switch (muting)

Set to the "— 20 dB" position when a disc is being changed or to temporarily reduce the volume level (approx. 1/10).

6 Loudness switch (loudness)

Set to the "on" position when listening to music at low volume. Auditory perception of sound in the low frequency range falls off at low volume, but when the switch is in this position, this deficiency is compensated for, so that the full impact of the musical performance can be enjoyed.

7 Digital input selector (digital input)

This selector is used when a component connected to one of the "DIGITAL INPUT" terminals (on the rear panel of this unit) is to be used as the sound source. (Refer to page 5.)

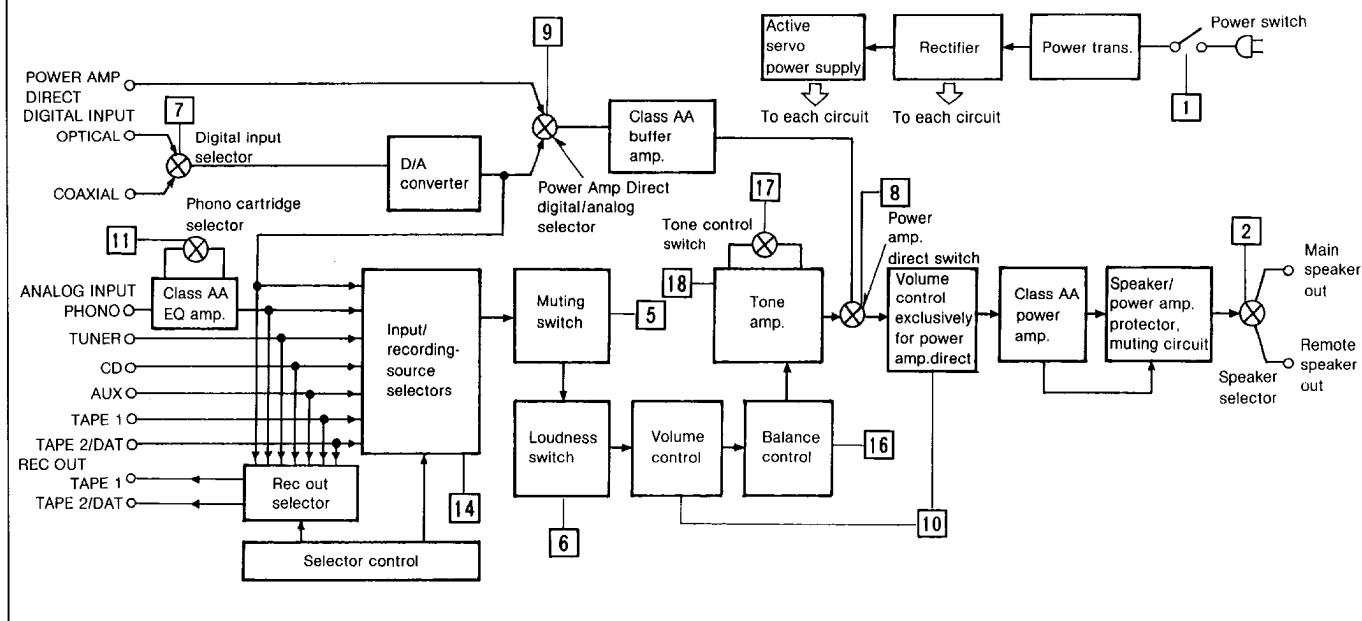
8 Power amplifier direct switch/indicator (power amp direct)

When this switch is switched ON (Indicator will illuminate.), a superior level of tone quality can be obtained, because the signals from the component connected to the "POWER AMP DIRECT" terminals or the "DIGITAL INPUT" terminals are sent directly to the sound volume, without passing through the tone control circuit, etc. of this unit.

9 Digital/analog selector/indicators (digital/analog)

This selector is used (when the **power amp direct** is ON) to select, as the signal source, either the component connected to the "DIGITAL INPUT" terminals or the component connected to the "POWER AMP DIRECT" terminals. One of the indicators will indicate which source is selected.

Block diagram



10 Volume control/indicator (volume)

There are two types of volume scale indications: one for when the [power amp direct] is OFF, and one for when it is ON (Indicator will illuminate.). (Refer to page 8.)

11 Phono cartridge selector (phono selector)

This selector should be set to the position which corresponds to the type of cartridge used on the turntable.

MM (■ → ■): Set to this position when using a moving-magnet type cartridge or high-output moving-coil cartridge (1 mV or more).

MC (■ → ■): Set to this position when using a moving-coil type cartridge.

12 Recording output signal indicators (recording selector)

These indicators indicate the sound source which can be recorded.

13 Input signal indicators (input selector)

These indicators indicate the sound source of the sound being heard from the speakers.

14 Input/recording-source selectors

Press to select the sound source to be listened to and/or the sound source to be recorded.

Note that the function of these selectors changes depending upon the setting of the recording-mode selector. (Refer to "Recording-mode selector/indicator".)

15 Recording-mode selector/indicator (rec mode)

This selector is used to select the signal to be recorded by the connected tape deck.

When this selector is pressed, the indicator flashes ON and OFF repeatedly; when one of the input/recording-source selector is then pressed, this indicator changes from flashing to a steady illumination.

If this selector is pressed while one of the recording output signal indicators is illuminated, the recording-mode indicator will change from a steady illumination to repeated flashing; when it is pressed once again, the indicator will be extinguished.

When the recording-mode indicator is not illuminated:

If one of the input/recording-source selectors is pressed, the sound source to be listened to and the recording sound source will both be switched at the same time.

When the recording-mode indicator is flashing:

If one of the input/recording-source selectors is pressed, only the recording sound source will be switched.

When the recording-mode indicator is illuminated:

If one of the input/recording-source selectors is pressed, only the sound source to be listened to will be switched.

16 Balance control (balance)

This control is used to adjust left/right volume balance.

17 Tone control switch (tone control)

Set this switch to the "on" position if you want to adjust the [bass] or [treble] tone quality.

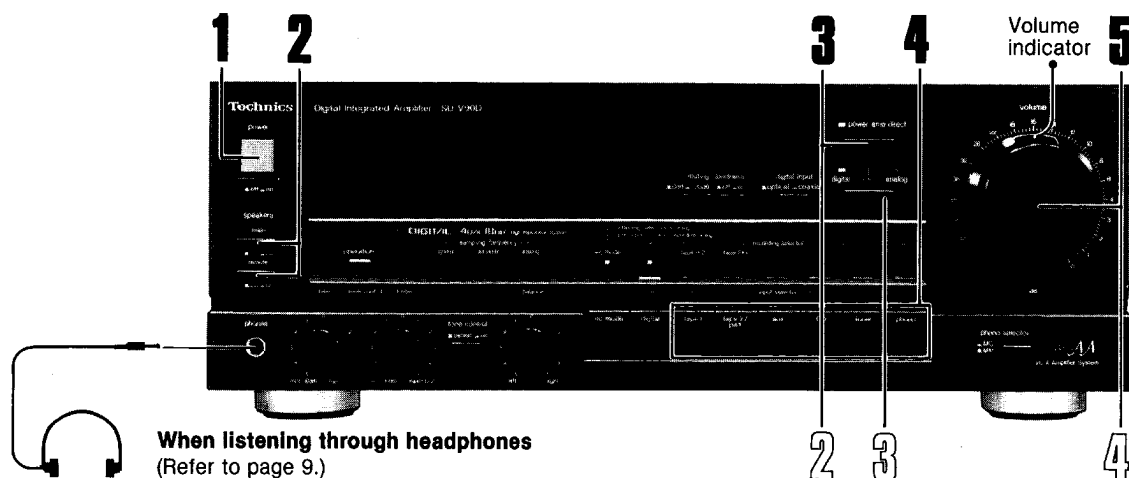
18 Tone controls (bass/treble)

The bass control is for the low-frequency sound range, and the treble control is for the high-frequency sound range.

19 Headphones jack (phones)

Operation

Listening to an analog sound source



When listening through headphones
(Refer to page 9.)

Listening to a component connected to the analog terminals

- 1** Set the **volume** to the "∞" position, and then switch ON the **power**.
- 2** Select the speaker systems to be used by using the **speakers**.
- 3** Switch OFF the **power amp direct**.
(The illumination of the "power amp direct" indicator will go out.)
- 4** Press one of the these selectors to select the component to be used.
tape 1: Press this button to listen to the tapes.
tape 2/DAT: Press this button to listen to equipment connected to the "TAPE 2/DAT" terminals.
aux: Press this button to listen to equipment connected to the "AUX" terminals.
CD: Press this button to listen to compact discs.
tuner: Press this button to listen to radio broadcasts.
phono: Press this button to listen to phono discs.
- 5** Adjust the **volume** to the desired level.
(Refer to the A scale shown below.)
 To adjust the tone quality, (See below.)
 In this instance, the **muting**, **loudness** and **balance** can be also used.

Listening to a component connected to the "POWER AMP DIRECT" terminals

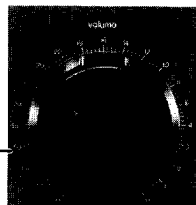
- 1** Follow steps 1 and 2 described at the left.
- 2** Switch ON the **power amp direct**.
(The "power amp direct" indicator and the volume indicator will then illuminate.)
- 3** Set the **digital/analog** to the "analog".
(The "analog" indicator will then illuminate.)
- 4** Adjust the **volume** to the desired level.
(Refer to the B scale shown below.)
 In this instance, the tone quality, etc. cannot be adjusted.

■ To adjust the volume level

The scale used differs according to the method of sound reproduction.

A

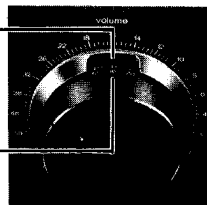
The scale used when the **power amp direct** is OFF



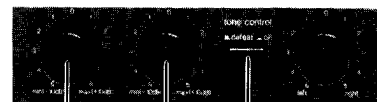
B

(The indicator will illuminate.)

The scale used when the **power amp direct** is ON

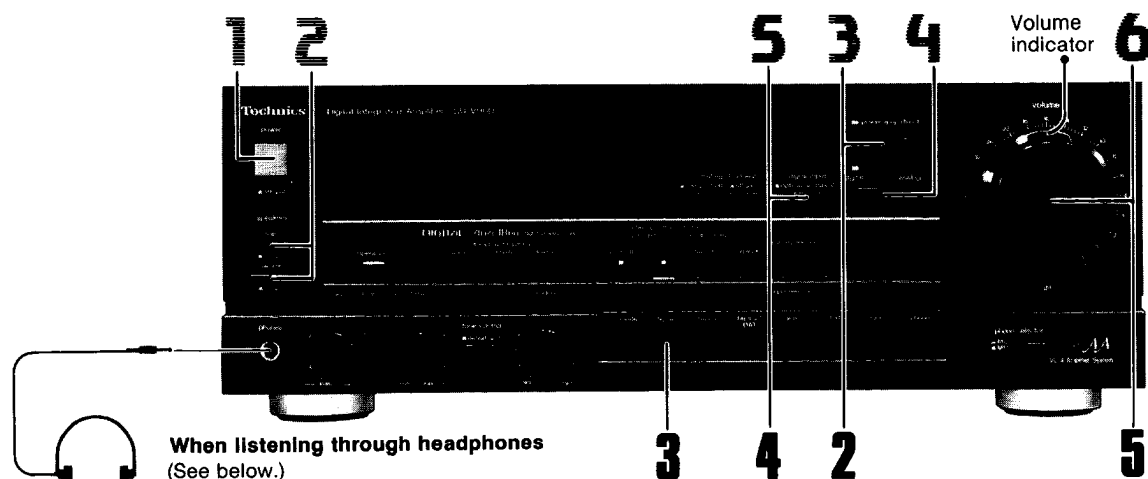


■ To adjust the tone quality



- 1** "on"
- 2** Adjust tone quality as desired.

Listening to a digital sound source



When listening through headphones, the tone control circuit, etc. cannot be adjusted.

- 1** Set the **volume** to the "∞" position, and then switch ON the **power**.
- 2** Select the speaker systems to be used by using the **speakers**.
- 3** Switch ON the **power amp direct**.
(The "power amp direct" indicator and the volume indicator will then illuminate.)
- 4** Set the **digital/analog** to the "digital".
(The "digital" indicator will then illuminate.)
- 5** Select the sound source by using the **digital input**.
optical (→): Make this setting when the component to be used is connected to the "OPTICAL" terminal.
coaxial (→): Make this setting when the component to be used is connected to the "COAXIAL" terminal.
- 6** Adjust the **volume** to the desired level.
(Refer to the B scale on page 8.)
In this instance, the tone quality, etc. cannot be adjusted.

When listening through headphones

Set the **volume** to low position before connecting headphones. If sound from the speakers is not wanted, switch OFF the **speakers**.

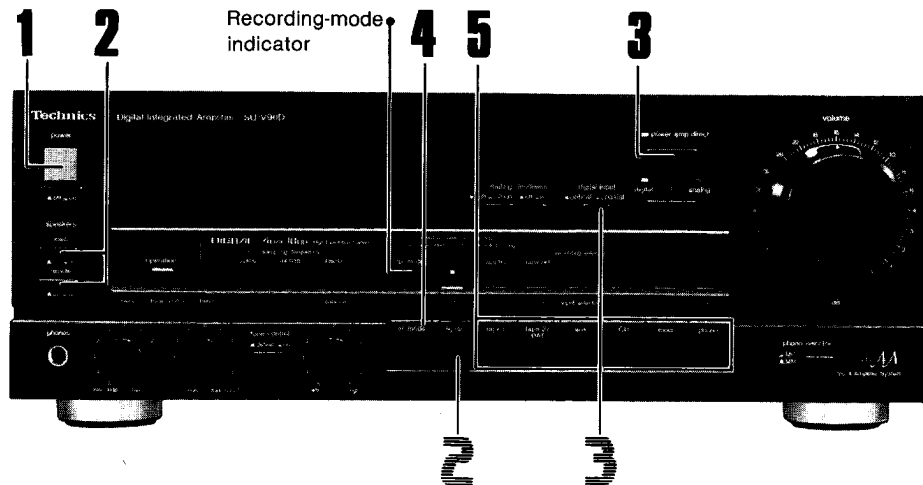
When listening through headphones, the tone control circuit, etc. cannot be adjusted.

- 1** Follow steps 1 and 2 described at the left.
- 2** Switch OFF the **power amp direct**.
(The illumination of the "power amp direct" indicator will go out.)
- 3** Press the **digital**.
(The "digital" input signal indicator will then illuminate.)
- 4** Select the sound source by using the **digital input**.
(Refer to step 5 at the left.)
- 5** Adjust the **volume** to the desired level.
(Refer to the A scale on page 8.)
To adjust the tone quality, (Refer to page 8.)
In this instance, the **muting**, **loudness** and **balance** can be also used.

After use

After listening is finished, set the **volume** to the "∞" position; the power switches of all equipment should then be switched OFF.

Recording



Recording an analog sound source

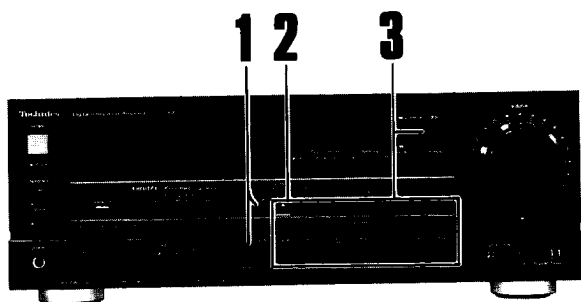
A recording of the sound source can be made while listening to it.

- 1** Set the **volume** to the “∞” position, and then switch ON the **power**.
- 2** Select the speaker systems to be used by using the **speakers**.
- 3** Switch OFF the **power amp direct**.
(The illumination of the “power amp direct” indicator will go out.)
(The recording cannot be made if this switch is not switched OFF.)
Note:
The sounds from a component connected to the “POWER AMP DIRECT” terminals cannot be recorded.
- 4** Check to be sure that the recording-mode indicator is not illuminated.
(If it is illuminated, press the **rec mode** to extinguish it.)
- 5** Select the sound source to be recorded by pressing one of the these selectors.
(The corresponding recording output signal indicator will illuminate.)
- 6** Begin the program source to be recorded.
(For information concerning the component used as the program source, refer to its operating instructions.)
- 7** Adjust the recording level, by using the controls on the tape deck or digital audio tape deck (DAT). Then begin recording.
(For information concerning the component used for the recording, refer to its operating instructions.)

Recording a digital sound source

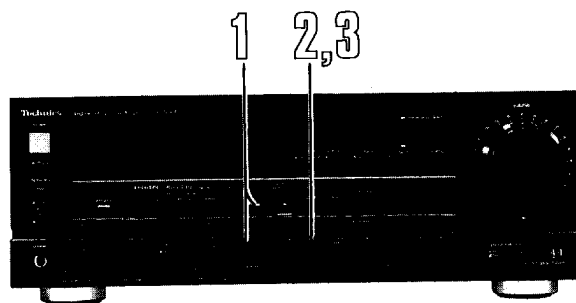
A recording of the sound source can be made while listening to it.

- 1** Follow steps 1 to 4 described at the left.
(To record sounds with passing through the tone control circuit, etc. set the **digital/analog** to the “digital”.)
- 2** Press the **digital**.
(The “digital” of the input indicator and the recording output signal indicator will illuminate.)
- 3** Select the sound source for the recording by using the **digital input**.
- 4** Begin the program source to be recorded.
(For information concerning the component used as the program source, refer to its operating instructions.)
- 5** By using the controls on the tape deck, adjust the recording level. Then begin recording.
Follow your tape deck’s operating instructions.



■ Listening to one sound source while recording another

1. Press the **rec mode**; the recording-mode indicator will then begin flashing.
2. Press the selector corresponding to the program source to be recorded.
(The recording-mode indicator will change from flashing to a steady illumination, and the selected sound source will be recorded.)
3. Press the selector corresponding to the program source to be heard.



■ Edit-Recording

• To record from tape deck 1 to 2

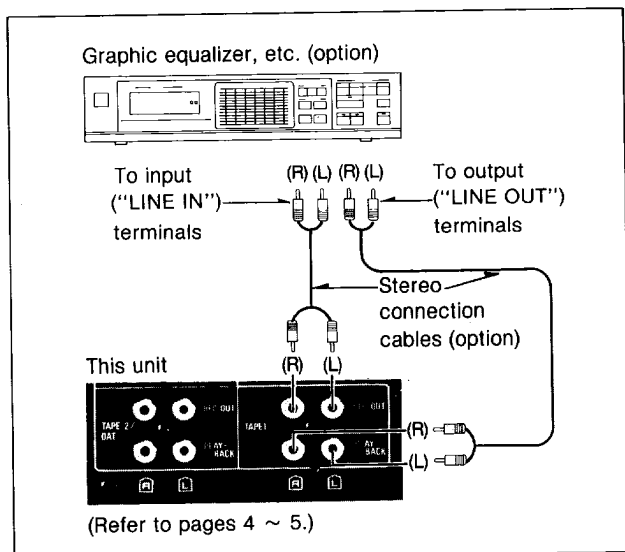
1. Press the **rec mode**; the recording-mode indicator will then begin flashing.
2. Press the **tape 1**.
(The recording-mode indicator will illuminate, and the recording output signal indicator marked "tape 1 ► 2" will illuminate.)
3. If the "tape 1" input signal indicator does not illuminate, press the **tape 1** once again.
(The "tape 1" input signal indicator will be illuminated.)

• To record from tape deck 2 to 1

- Follow the above steps, but pressing the selector marked **tape 2/DAT**.

Using the Graphic Equalizer, etc.

Connections

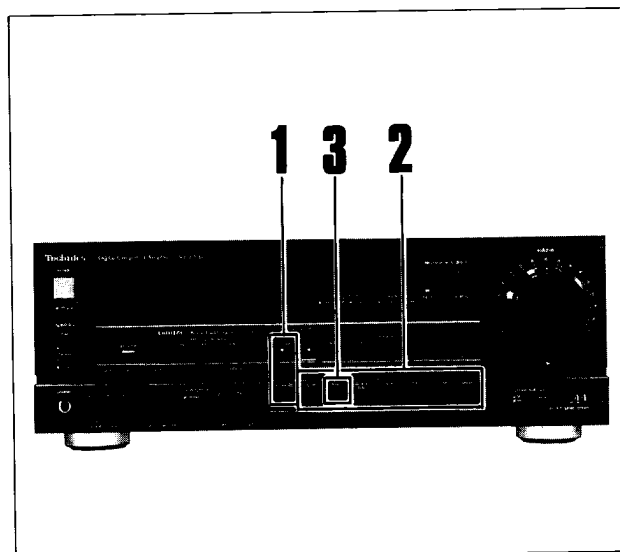


Make connections to the "TAPE 1" terminals on the rear panel of this unit.
The digital components and analog components connected on pages 4 and 5 can be operated.

Note:

The component connected to the "POWER AMP DIRECT" terminals cannot be operated.

Operation



1. Press the **rec mode**; the recording-mode indicator will then begin flashing.
2. Select the component to be used.
For an analog sound source: (Refer to page 8.)
For a digital sound source: (Refer to page 9.)
3. Press the **tape 1**.

Note:

When recording the sounds effected by a graphic equalizer, etc., connect the tape deck to a graphic equalizer.

Troubleshooting Guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.

If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of Authorized service centers (enclosed with this unit) to locate a convenient service center, or consult your Technics dealer for instructions.

	Probable cause(s)	Suggested remedy
Problems noted at all times		
No sound is heard when the power is switched ON.	The power cord plug is not completely inserted.	• Confirm that the power cord plug is connected completely.
	Connections are incomplete or incorrect to the speaker systems, etc.	• Check to be sure that all connection wires are correctly connected.
When listening to stereo sound, the sound of the various musical instruments does not take from its proper position.	The input/recording-source selectors, "power amp direct" and/or "digital/analog" settings are incorrect.	• Check to be sure that the selection of the desired sound source is made correctly.
	The speaker selectors are incorrectly set to the "off" position.	• Set to the "main" or "remote" position.
When listening to stereo sound, the sound of the various musical instruments does not take from its proper position.	The positive (+) and negative (–) connections of the speaker connection wires are reversed.	• Reconnect the speaker connection wires so that the positive and negative connections are correct.
When listening to stereo sound, the left and right sounds are reversed.	The left and right connections of the speaker connection wires are reversed.	• Check the speaker connection wires and connect them correctly if necessary.
	The left and right connections of the connection cables connected to other equipment are reversed.	• Check to be sure the connection cables to other equipment and connect them correctly if necessary.
Sound is not heard from the speaker system on one side.	The speaker connection wires are disconnected.	• Check and correct the connections of the speaker connection wires.
	The "balance" is set too far to one side.	• Set so that sounds are heard at the center, between the speaker systems.
Sound does sound, but the music or no sound is heard when the song is repeated.	The protection circuitry has functioned because the positive and negative speaker connection wires are "shorted".	• Switch off the power, and, after determining and correcting the cause, switch on the power once again.

Maintenance

To clean this unit, use a soft, dry cloth.

If the surfaces are extremely dirty, use a soft cloth, dipped into a soap-and-water solution or a weak detergent solution.

Wring the cloth well before wiping the unit.

Wipe once again with a soft, dry cloth.

Never use alcohol, paint thinner, benzine, nor a chemically treated cloth to clean this unit.

Such chemicals may damage the finish of your unit.