

Technics

STEREO INTEGRATED AMPLIFIER

SU-X902
SU-X502

OPERATING INSTRUCTIONS



Notes:

- Specifications differ according to the area code.
- The "EB" area code, for example, indicates United Kingdom specifications.
- The "EB" 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.

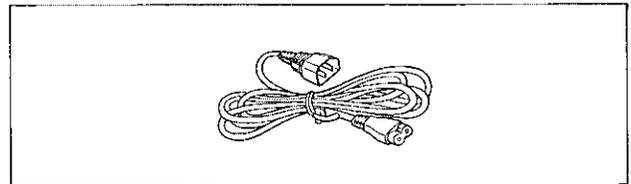
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These operating instructions are applicable to models SU-X502 and SU-X902.

Accessory

- AC power supply cord (Refer to page 6.) 1
- The configuration of AC power supply cord differs according to area.



Technical Specifications (DIN 45 500)

■ AMPLIFIER SECTION

DIN power output

SU-X902

1 kHz THD: 1 % 2 × 100 W (8 Ω)

SU-X502

1 kHz THD: 1 % 2 × 60 W (8 Ω)

Total harmonic distortion

rated power at 1 kHz 1 % (8 Ω)

Harmonic distortion

half power at 1 kHz (analog section) 0.009 % (8 Ω)

Residual hum and noise

0.3 mV

Damping factor

30 (8 Ω)

Input sensitivity and impedance

PHONO 3 mV/47 kΩ

TUNER, TAPE 150 mV/22 kΩ

CD, VDP, VCR 200 mV/22 kΩ

Maximum input voltage (1 kHz, RMS)

PHONO 100 mV

S/N (rated power 8 Ω)

PHONO 75 dB (IHF, A: 79 dB)

TUNER, CD, TAPE, VDP, VCR 82 dB (IHF, A: 83 dB)

Frequency response

PHONO RIAA standard curve

±0.8 dB (30 Hz~15 kHz)

SU-X902

TUNER, CD, TAPE, VDP, VCR 15 Hz~60 kHz (-3 dB)

SU-X502

TUNER, CD, TAPE, VDP, VCR 15 Hz~55 kHz (-3 dB)

CD, DAT, AUX (digital section) 15 Hz~20 kHz (-0.5 dB)

Tone controls

BASS 50 Hz, +10 dB~-10 dB

TREBLE 20 kHz, +10 dB~-10 dB

Muting

-20 dB

Super bass

60 Hz, +8 dB

Output voltage

TAPE, VCR REC OUT 150 mV

Channel balance, TUNER, 250 Hz~6,300 Hz ±1.0 dB

Channel separation, (TUNER, 1 kHz) (A SPEAKER) 55 dB

Headphones output level and impedance

SU-X902

660 mV/330 Ω

SU-X502

520 mV/330 Ω

Load impedance

A or B, A and B 8 Ω~16 Ω

SURROUND 8 Ω~16 Ω

■ VIDEO SECTION

VIDEO OUTPUT

1 Vpp/75 Ω

VCR MONITOR

1 Vpp/75 Ω

■ GENERAL

Power consumption

SU-X902

450 W

SU-X502

330 W

Power supply

AC 50 Hz/60 Hz, 230-240 V

Dimensions (W × H × D)

360 × 129 × 305 mm

(14-3/16" × 5-3/32" × 12")

Weight

SU-X902

7.5 kg (16.5 lb.)

SU-X502

6.5 kg (14.3 lb.)

Notes:

1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

Suggestions for Safety

■ Use a standard AC wall outlet

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

There is the possibility that a fire might be caused by making such a connection.

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.

■ Grasp the plug when disconnecting the power supply cord

1. **Wet hands are dangerous.**

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

2. **Never place heavy items on top of the power supply cord, and never force it to bend sharply.**

■ AC outlet on rear panel (not equipped for some countries)

1. **Any equipment connected here should have the specified power consumption or less.**

This outlet is exclusively for the connection of other audio equipment, such as a tape deck. Be sure the power consumption does not exceed the wattage specified near the AC outlet.

2. **Never connect other electrical appliances, such as an iron or toaster.**

If appliances with a large power consumption are connected, an accident might occur as a result of overheating.

■ Place the unit where it will be well ventilated

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

■ Avoid places such as the following:

In direct sunlight or in other places where the temperature is high.

In places where there is excessive vibration or humidity.

Such conditions might damage the cabinet and/or other component parts and thereby shorten the unit's service life.

■ Be sure to place the unit on a flat, level surface

If the surface is inclined, a malfunction may result.

■ 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.

■ Take particular care if children are present

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.

■ 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.

■ 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 might cause flaking or cloudiness of the cabinet finish.

■ Disconnect the power supply cord if the unit will not be used for a long time

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 troubles.

■ 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.

For United Kingdom

("EB" area code model only)

The "EB" indication is shown on the serial number tag.

The plug of the AC power supply cord must only be connected to electronic apparatus equipped with suitable sockets.

Otherwise cut off and dispose of the plug, and fit an appropriate one in accordance with the instruction below.

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 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.

Under no circumstances must either of the above wires be connected to the earth terminal of a three pin plug.

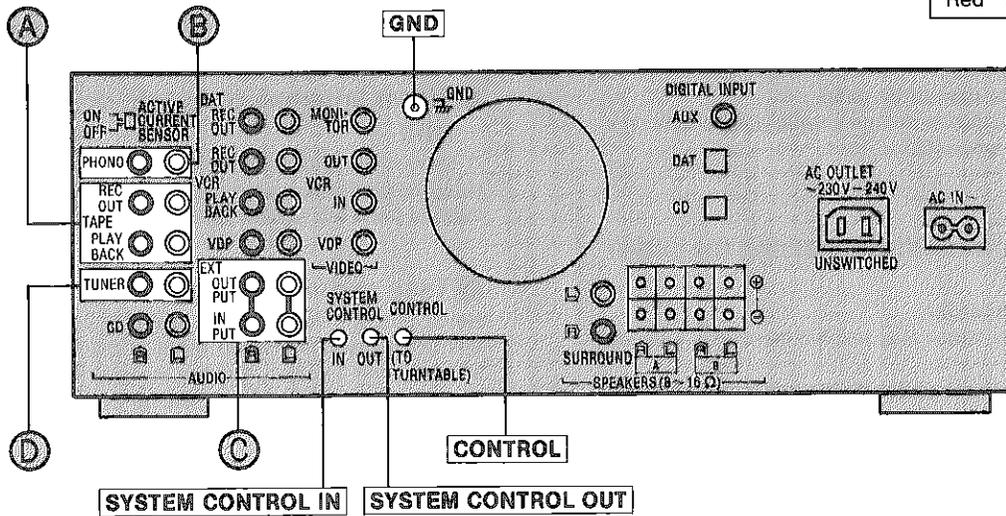
This apparatus was produced to BS 800.

Connections

Make connections to each component in the system by using stereo connection cables (not included).

See the operating instructions of the tuner (ST-X902L) for details.

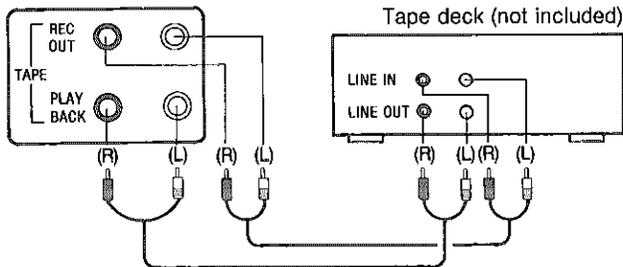
Stereo connection cable



Connecting audio components

A "TAPE" terminals

Connect a tape deck.

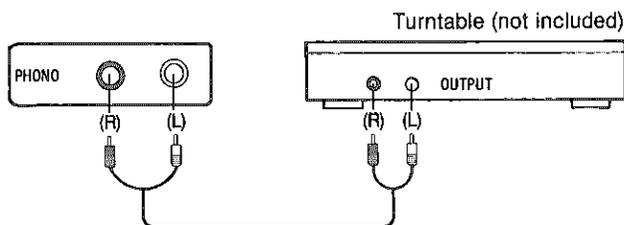


■ "SYSTEM CONTROL OUT" terminal

This terminal is used to connect a Technics tape deck with the "SYSTEM CONTROL IN" terminal.

B "PHONO" terminals

Connect a turntable.



■ "GND" terminal

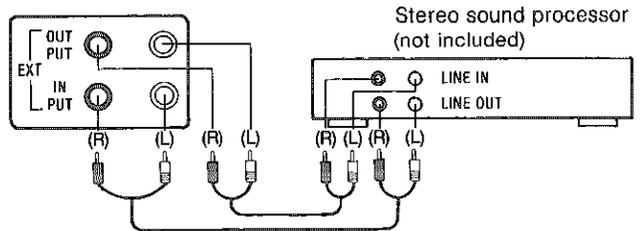
This terminal is for use with a turntable which has a ground wire.

■ "CONTROL" terminal

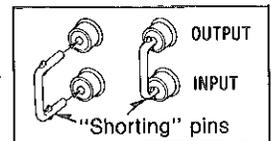
This terminal is used to connect a Technics turntable with the "REMOTE/SYNCHRO REC" terminal.

C "EXT" terminals

Connect a stereo sound processor.

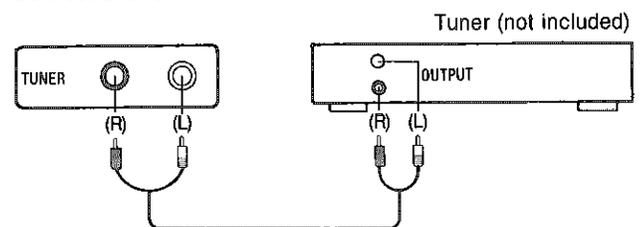


Note:
When these terminals are not in use, be sure to insert the "shorting" pins (included).



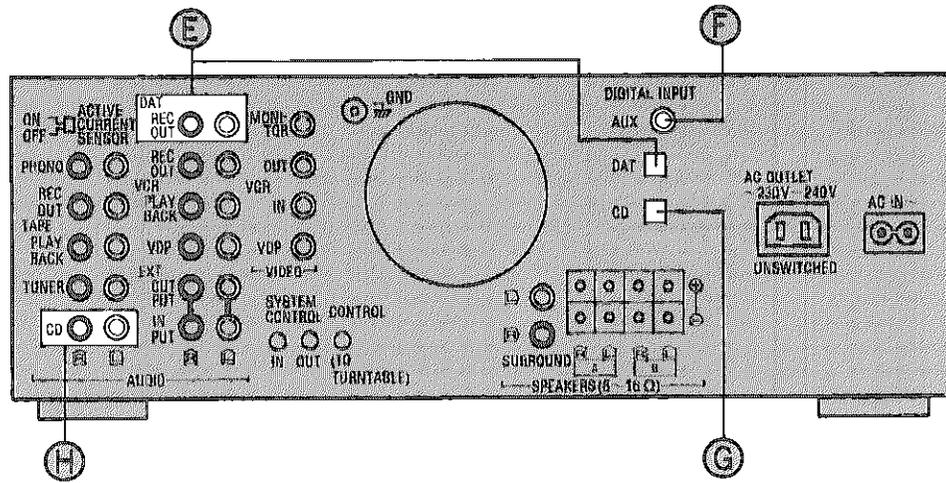
D "TUNER" terminals

Connect a tuner.



■ "SYSTEM CONTROL IN" terminal

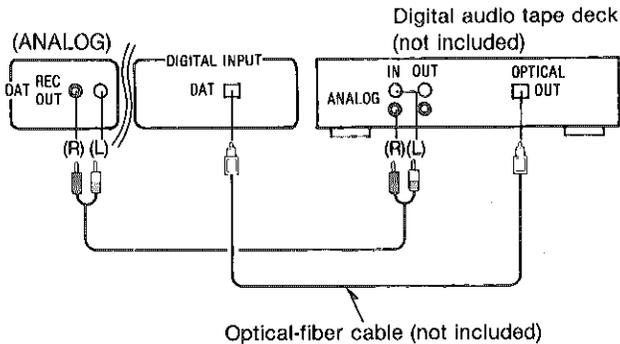
This terminal is used to connect a Technics tuner with the "SYSTEM CONTROL OUT" terminal.



Connecting audio components

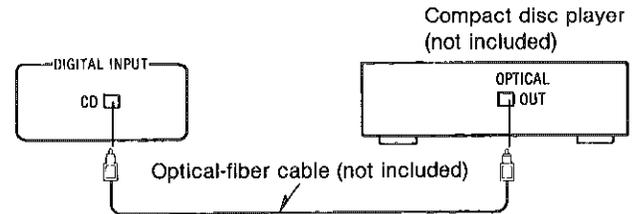
E "DAT" terminals (ANALOG/DIGITAL)

Connect a digital audio tape deck.
Recordings can be made to the digital audio tape deck.



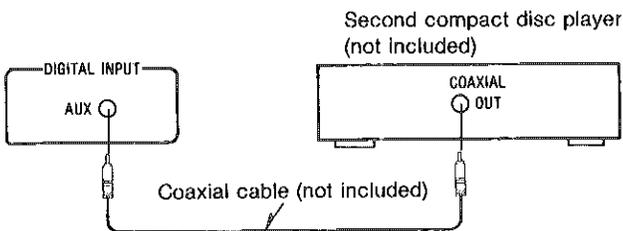
G "CD" terminal (DIGITAL)

Connect a compact disc player.



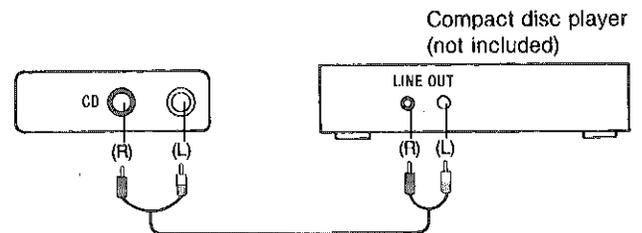
F "AUX" terminal (DIGITAL)

Connect a second compact disc player, etc.



H "CD" terminals (ANALOG)

Connect a compact disc player.

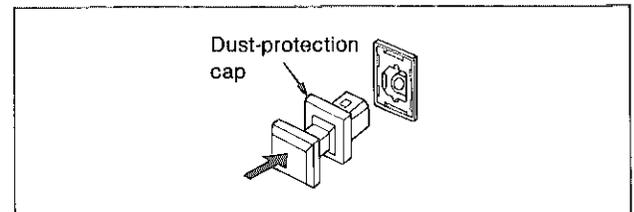


■ "DIGITAL INPUT" (DAT, CD) terminals of this unit

These terminals are protected by dust-protection caps to avoid damage by dust, etc.

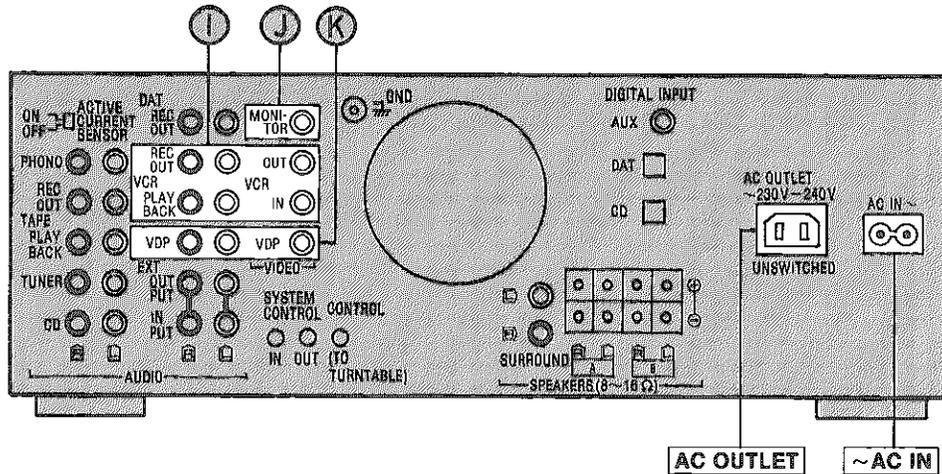
Remove the caps only when the "DIGITAL INPUT" terminals are to be used.

When these terminals are not being used, attach the caps as shown in the illustration at right.



Connections (continued)

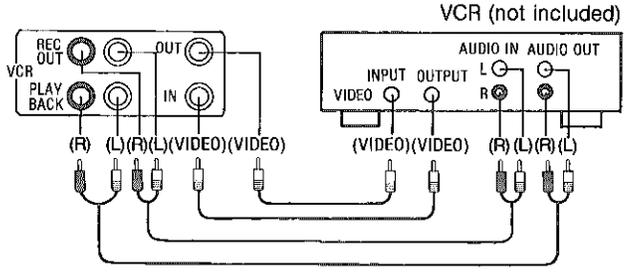
Make connections to each component by using stereo connection cables (not included) and video connection cables (not included).



Connecting video equipment

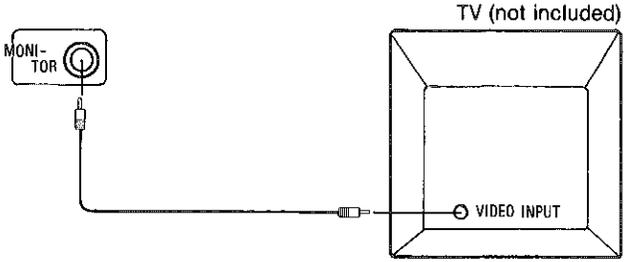
I "VCR" terminals

Connect a VCR.



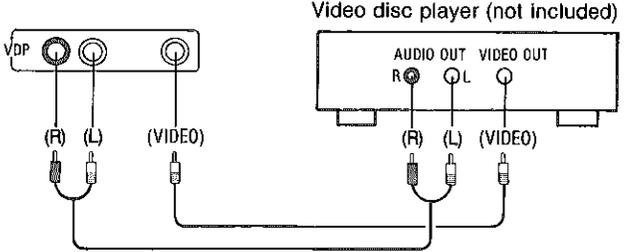
J "MONITOR" terminal

Connect a TV.



K "VDP" terminals

Connect a video disc player.



AC outlet ("AC OUTLET")

Do not connect video equipment (such as a TV, etc.) to the AC outlet of this unit. (This outlet is intended for audio equipment.) Do not exceed the indicated power ratings when connecting to this outlet.

"UNSWITCHED" outlet:

Power is always available, regardless of power switch. Audio equipment rated up to 60 W can be connected here.

Note:

The configuration of the AC outlet differs according to area.

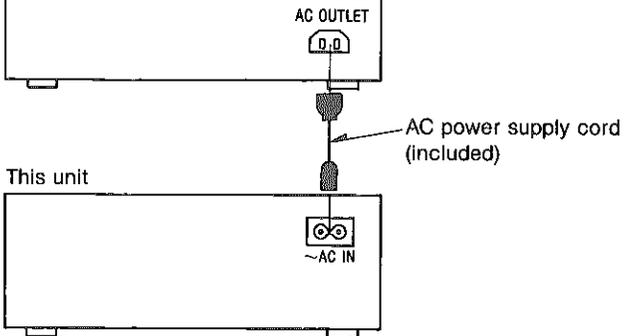
AC power supply cord

Connect the AC power supply cord (included) after all other cables and cords are connected.

Notes:

- Configuration of the AC outlet and AC power supply cord differs according to area.
- If this unit is not to be connected with the tuner, the cord is to be connected to the household AC outlet.

Tuner (not included)

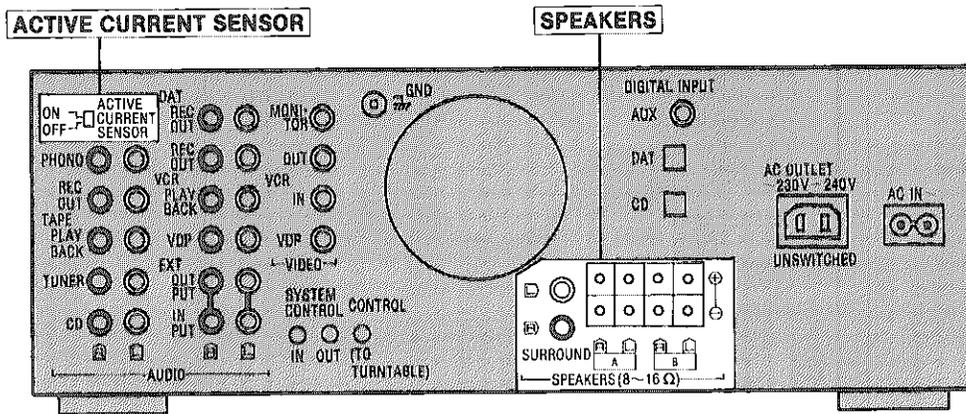


For United Kingdom

Cut off and dispose of the plug and replace with a suitable plug. (Refer to "For United Kingdom" on page 3.)

Household AC outlet

Fit a suitable plug to the AC power supply cord.

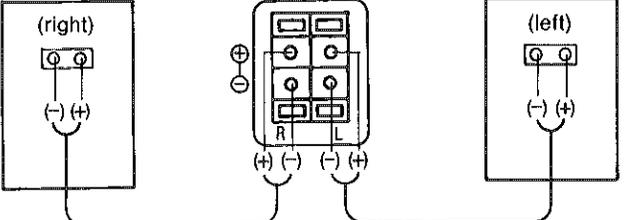


Connection of speaker systems

Three pairs of speaker systems (main, second, surround-sound) can be connected to this unit. Speaker systems that can be connected to any of the speaker connection terminals of this unit are speaker systems with an impedance of 8 to 16 ohms. Make connections to each speaker system by using speaker cords (not included).

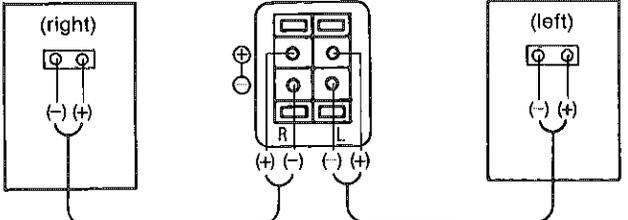
Main speaker systems (not included)

Connect to the "A" terminals.



Second speaker systems (not included)

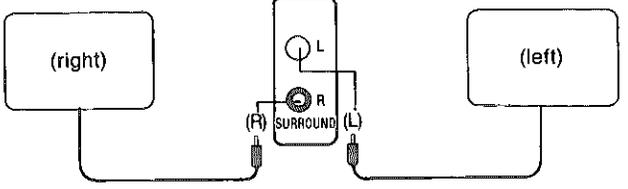
Connect to the "B" terminals.



Surround-sound speaker systems (not included)

Connect to the "SURROUND" terminals.

- Be sure to connect both speaker systems. If only one side is connected, no sound will be heard.



How to use the active current sensor

The selector is used to enjoy powerful super-bass sound.
ON: Switch ON when connecting the Technics system speakers (SU-X902: SB-CS90, SU-X502: SB-CS90/CS70).
OFF: Switch OFF when connecting speakers other than Technics system speakers.

- Notes:**
- When connecting speakers other than system speakers, sound from the speakers may not be heard if the selector is pressed ON, because the protecting circuit on the amplifier becomes active.
 - The active current sensor activates only for the speaker systems connected to the "A" terminals.

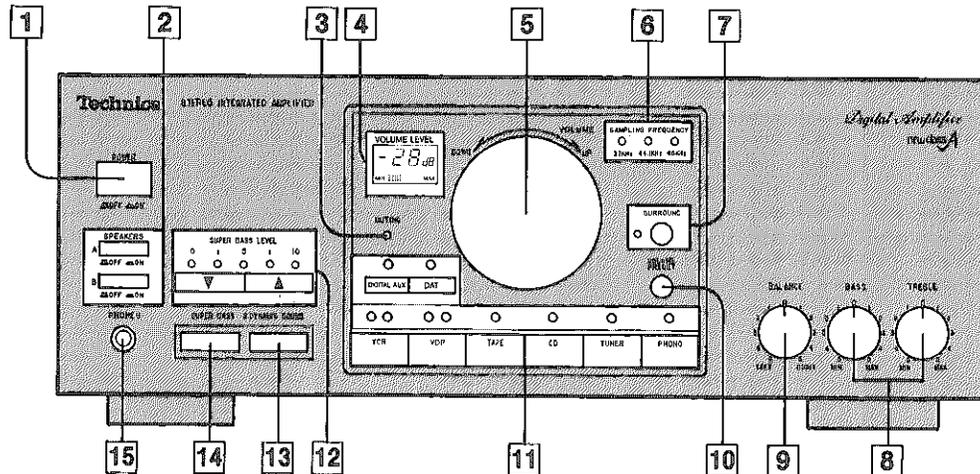
To connect cords to terminals

- ① Strip off the outer covering, and twist the center conductor. 15 mm (19/32") Twist
- ② Tilt the lever back and insert the cord.
- ③ Close the lever and pull the cord gently to be sure that it is secure.

Note:
Be sure to only connect positive (+) cords to positive (+) terminals, and negative (-) cords to negative (-) terminals.

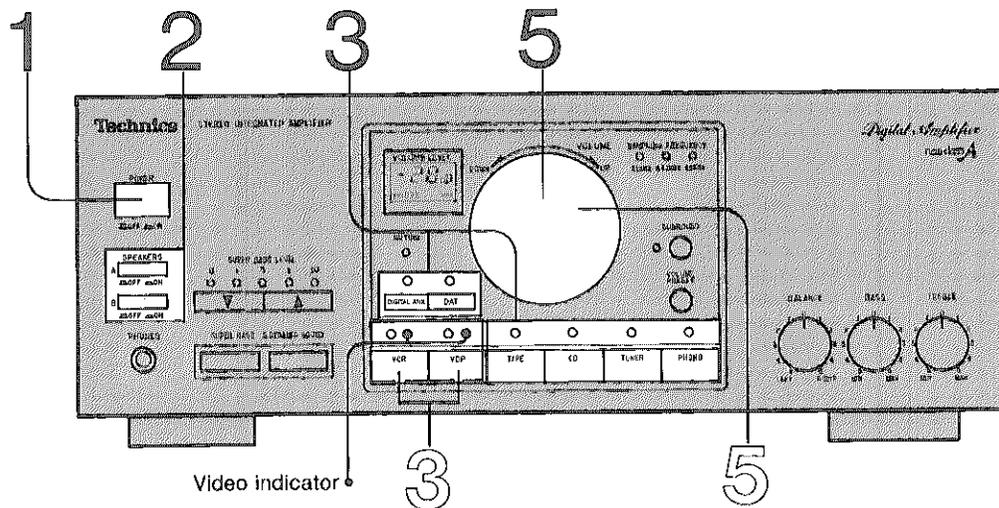
Note:
To prevent damage to circuitry, never short-circuit the plus (+) and minus (-) speaker wire.

Front Panel Controls and Functions



- 1 Power switch (POWER)**
- 2 Speaker selectors (SPEAKERS)**
These selectors are used to select the speaker systems to be used.
A: Sound can be heard from the speakers connected to the "A" and "SURROUND" terminals.
B: Sound can be heard from the speaker systems connected to the "B" terminals.
When this selector is pressed, sound cannot be heard from the speaker systems connected to the "SURROUND" terminals.
Note:
When only one speaker system is connected to the amplifier, no sound will be heard if both speaker selectors are pressed.
- 3 Muting indicator (MUTING)**
The indicator illuminates when the muting switch of the remote-control transmitter is pressed to temporarily turn down the volume.
When releasing the muting with this unit, turn down the volume level to the minimum.
- 4 Volume-level indicator (VOLUME LEVEL)**
The volume level is indicated in decibels (dB).
The dB indication numerically shows the attenuation characteristic of the amplifier; the indication ranges from "-- dB" (minimum) to "0 dB" (maximum).
The volume level becomes greater as the indication changes from -78 to -77 to -76 dB.
- 5 Volume control (VOLUME)**
- 6 Sampling frequency indicators (SAMPLING FREQUENCY)**
The appropriate indicator will illuminate whenever a digital signal with one of the sampling frequencies listed below is detected at the "DIGITAL INPUT" terminals on the rear panel of this unit.
Note that some digital components (compact disc players, etc.) emit digital signals whenever their power switches are ON.
32 kHz: For digital signals with the 32 kHz mode sampling frequency
44.1 kHz: CD and others
48 kHz: For digital signals with the 48 kHz mode sampling frequency
- 7 Surround-sound button/indicator (SURROUND)**
This button is used to switch the surround-sound effect ON and OFF. (The indicator will illuminate when the switch is pressed to ON.)
- 8 Tone controls (BASS/TREBLE)**
The bass control is used to adjust the low-frequency sound range, and the treble control is used to adjust the high-frequency sound range.
- 9 Balance control (BALANCE)**
This control is used to adjust the left/right volume balance.
- 10 Volume preset button (VOLUME PRESET)**
This button can be used to retain the volume level for timer operation in the memory.
- 11 Input selectors/Indicators**
These selectors are used to select the sound source to be heard, such as a disc, radio broadcasts, etc. The corresponding indicator illuminates during operation to indicate the selected sound source.
- 12 Super bass level control buttons/indicators (SUPER BASS LEVEL)**
These buttons are used to adjust the strength of bass sounds in the super bass control. The adjustment level is also displayed.
- 13 Super dynamic sound button/indicator (S. DYNAMIC SOUND)**
This button is used to emphasize bass sound at low volume. The button itself illuminates when turned ON.
- 14 Super bass button/Indicator (SUPER BASS)**
The low-range sound can be reinforced when this button is pressed.
The button itself illuminates when turned ON.
- 15 Headphones jack (PHONES)**

To Enjoy Playback



To enjoy audio sources

- 1** Switch ON the power.
- 2** Select the speaker systems [main (A)/surround-sound and/or second (B)] to be used.
- 3** Select the sound source.
DIGITAL AUX: Press to listen to sound from equipment connected to the "DIGITAL INPUT: AUX" terminal.
DAT: Press to listen to digital audio tapes.
TAPE: Press to listen to tapes.
CD: Press to listen to compact discs.
Note:
 If there is analog input simultaneously with digital input, the digital input takes precedence.
 When the compact disc player connected to the "ANALOG" terminals is to be played back, switch OFF the power of the compact disc player connected to the "DIGITAL" terminal.
TUNER: Press to listen to radio broadcasts.
PHONO: Press to listen to phono discs.
- 4** Begin operation of the system component(s) to be used.
 Refer to the operating instructions of each component.
- 5** Adjust the volume level.

To enjoy video sources

- 1** Switch the TV power ON and select the VCR from the "TV/VCR" selector.
- 2** Follow steps 1 and 2 as described at left.
- 3** Select the video source.
VCR: Press to watch the video
VDP: Press to watch video discs.
Note:
 The video indicator (orange colour) indicates the selected video source.
- 4** Play back the video source.
- 5** Adjust the volume level.

To enjoy playback with the BGV function

Using BGV, the sound from compact discs, etc., and the video images from video discs, etc., can be combined and played back.

- 1. Select the desired video source.**
- 2. Select the desired audio source.**
- 3. Playback the selected audio and video sources.**

About the Direct-Operation Function

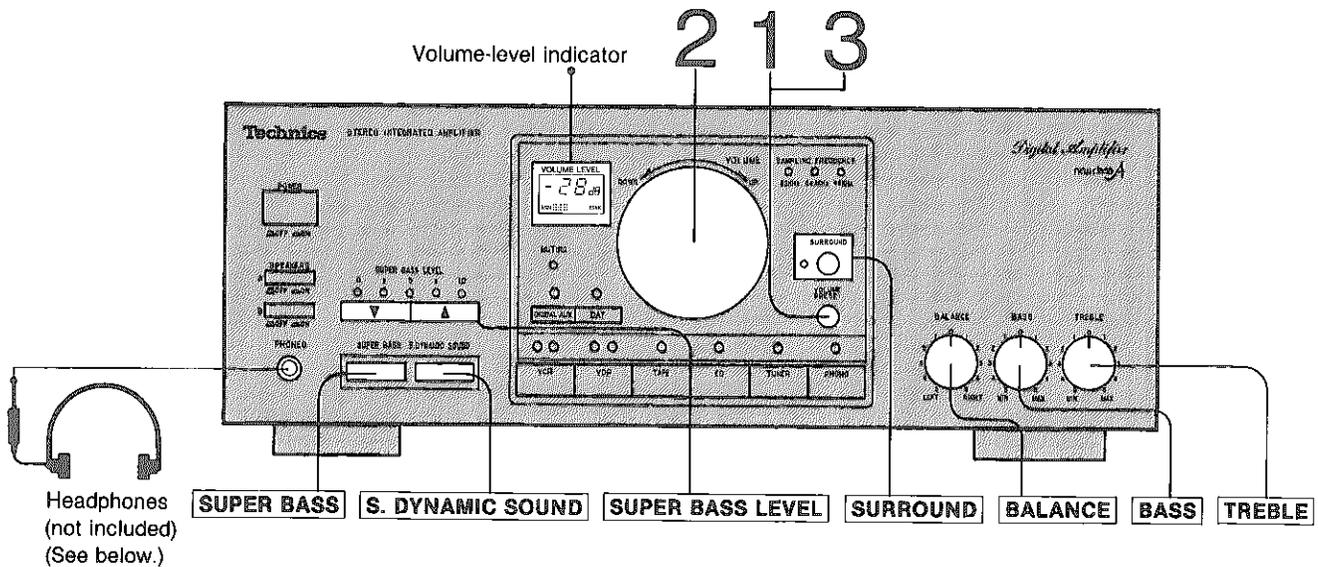
The direct-operation function is a convenient function for changing from one performance to another by simply beginning the performance to be heard next at that component, without the necessity of pressing the corresponding input selector of this unit.

- This function can be used only when connected to another Technics component equipped with a control terminal. (Refer to page 4.)
- Be sure to refer to the operating instructions for each component to assure proper connection.

The sound source can be selected by using the following keys on the components.

- **Listening to phono discs**
 Press the start key of the turntable.
- **Listening to radio broadcasts**
 Press the desired preset-channel key of the tuner.
- **Listening to tapes**
 Press the playback key of the cassette tape deck.
- **Listening to compact discs**
 Press the play key of the compact disc player.

To Enjoy Playback (continued)



When listening to music

SURROUND

Press this button to activate the surround-sound effect. (The indicator will illuminate.)

Note:

The surround-sound effect is only effective for phono discs, compact discs, tapes that are recorded in stereo, and for FM and other broadcasts that are broadcast in stereo. It has no effect for monaural AM broadcasts, or for any other monaural source. When listening to a sound source recorded by the surround-sound method, press this button so that the illumination stops. Note that the surround-sound effect is not recorded by a digital audio tape deck.

The effect by using surround-sound speaker systems

(left)

(right)

An effect similar to the dynamic sound of a concert hall

SUPER BASS / SUPER BASS LEVEL

① Press the super bass button to boost super low-frequency sound.

(The button itself will illuminate.)

② Adjust the super bass level control buttons to the desired level.

(Adjusted level will be displayed.)

S. DYNAMIC SOUND

Press this button to emphasize the bass sound at low volume. (The switch itself illuminates.)

BALANCE

Adjust the balance for the left/right volume.

BASS

Adjust the low-frequency sound to the desired tone quality.

TREBLE

Adjust the high-frequency sound to the desired tone quality.

During recording:

Operation of controls or switches other than the surround-sound switch has no influence upon recording.

Volume level setting for timer operation

You can preset the desired volume level for timer operation by following the procedures below.

This preset level can be recalled with "fade-in" during the timer operation even if the volume level has been changed after it was first set.

- 1 Press the volume preset button. (The volume-level indicator will flash on and off continuously.)
- 2 Adjust the volume level.
- 3 Press the volume preset button again. (The preset level will be retained in the memory.)

Notes:

- Refer to the operating instructions of the appropriate unit(s) for details of timer operation.
- The volume-preset function is for timer use only.

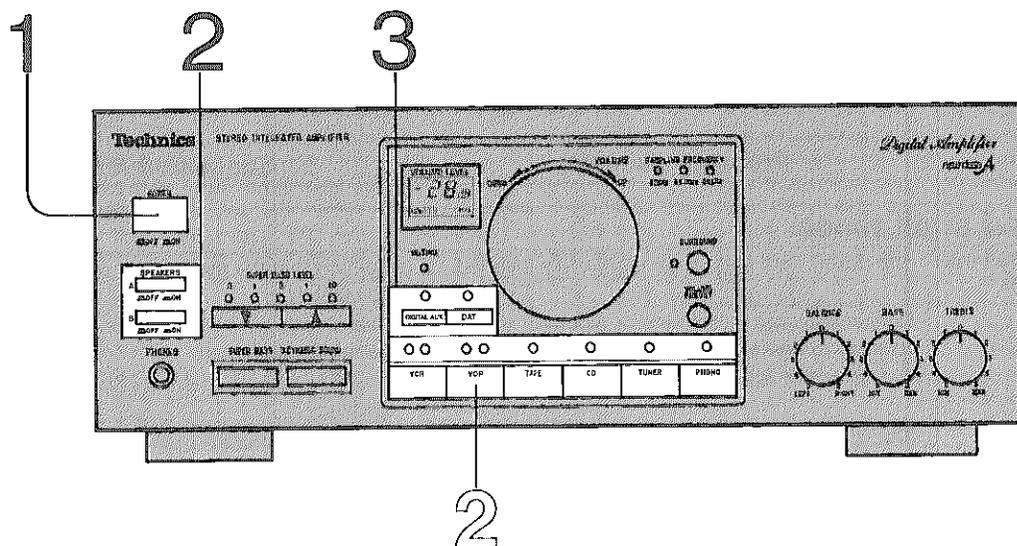
When listening through headphones

- Reduce the volume level before connecting headphones.
- Sound from the speakers will not be heard when the headphones are connected to the headphones jack.
- Avoid listening for a long time at a volume level so high that it irritates the ears.

After listening is finished

Use the volume control to reduce the volume level, and then switch OFF the power of each unit.

Recording



To record from compact discs, etc.

- 1 Switch ON the power.
- 2 Select the speaker systems [main (A)/surround-sound and/or second (B)] to be used.
- 3 Select the program source to be recorded.
- 4 Begin the operation of the sound source to be recorded.
Refer to the operating instructions of each component.
- 5 Adjust the recording level by using the controls on the tape deck or digital audio tape deck. Then begin recording.
Refer to the operating instructions of the tape deck or digital audio tape deck.

■ To record on the VCR

1. Follow steps 1-4 as described above.
2. Begin recording on the VCR and start playing back the audio source.

Synchro-recording

“Synchro-recording” is a convenient feature that can be used to start a tape recording of the sound from a phono disc or compact disc by simply starting the play of that disc; moreover, the recording mode automatically changes to the pause mode when the disc play ends.

- This function can be used only when connected to another Technics component equipped with a control terminal. (Refer to page 4.)
- Be sure to refer to the operating instructions for each component to assure proper connection.

To record video discs on the VCR

- 1 Follow steps 1 and 2 as described at left.
- 2 Press the “VDP” input selector.
- 3 Begin recording on the video and start playing back the video disc.
Refer to the operating instructions of each component.

To record on the VCR using the BGV function

Using BGV, the sound from compact discs, etc., and the video images from video discs can be combined and recorded.

1. Press the “VDP” input selector.
2. Select the desired audio source.
3. Begin recording on the VCR and start playing back the video disc and audio source.
Refer to the operating instructions of each component.

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.

Problem	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.
	The incorrect input selector has been pressed.	• Check to be sure that the correct selector is pressed.
	The speaker selector is set incorrectly.	• Set it to the correct position.
When listening to stereo sound, the sound lacks depth (i.e. thin bass, tinny sound).	One of the speakers is connected out of phase [(+)→(-), (-)→(+)].	• Reconnect the speakers, maintaining proper polarity [i.e., (+)→(+), (-)→(-)].
When listening to stereo sound, the left and right sounds are reversed.	The left and right speaker connections, source connections, or stereo sound processor connections are reversed.	• Check all connections and correct them if necessary.
A low-pitched noise ("hum" or "buzz") is heard.	The power cord or a fluorescent light, etc., is near the connection wires.	• Try separating this unit as far as possible from the electric appliance.
Sound is not heard from one of the speaker systems.	The speaker wires are disconnected.	• Check and correct the connections of the speaker wires.
	The balance control is set too far to one side.	• Set so that sounds are heard at the center, between the speaker systems.
Sound stops during a performance, or no sound is heard when the power is switched ON.	The protection circuitry has functioned because the positive and negative speaker connection wires are "shorted" or speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.	• Switch OFF the power, and, after determining and correcting the cause, switch ON the power once again. • Use speaker systems of the proper impedance rating.

Maintenance

To clean this unit, use a soft, dry cloth.
For very dirty surfaces, dip a soft cloth in a weak soap-and-water solution or a weak detergent solution and wring well. After cleaning, wipe with a soft, dry cloth.

Never use alcohol, paint thinner, benzine, or a chemically treated cloth to clean this unit.
Such chemicals may damage the unit's finish.

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