

Safety Precautions (Please read this page)

About pictorial display

This instruction manual and product markings use various pictorial symbols to ensure safe and correct use of the product and to prevent injury to yourself or others, and damage to property. The symbols and their meanings are as follows. Please read the main text only after fully understanding the contents.



caveat

This symbol indicates that ignoring this symbol and handling the product improperly may result in death or serious injury.



Note

This symbol indicates that ignoring this symbol and mishandling the product may result in personal injury or property damage.

Example of pictorial display



The Δ symbol indicates that there is something that requires attention (including danger and warning). The specific attention content is depicted in the diagram.



The circle symbol indicates that an action is prohibited. The specific prohibition content is written in or near the diagram.



● Symbols are used to tell you what to do or give instructions. The specific instructions are shown in the diagram.

▲Warning

* Do not scratch, damage or modify the power cord. Placing a heavy object on it, heating it or pulling on it may damage the power cord, resulting in a fire or electric shock. If the power cord is damaged (exposed core, broken wire, etc.), contact your retailer for a replacement.



* Do not insert or drop metal objects or flammable objects into the unit through the heat vents, etc. This may result in fire or electric shock. Be particularly careful in homes with children. If a foreign object gets inside the unit, first turn off the power switch on the unit, unplug the power cord from the outlet, and contact your retailer. Continuing to use the unit in this condition may result in fire or electric shock.



* If the product is used in an abnormal state, such as emitting smoke, a strange smell, or making an abnormal noise, it may cause a fire or electric shock. Immediately turn off the power to the product and be sure to unplug the power cord from the outlet. After making sure that smoke has stopped, contact your retailer.

Unplug the power cord from the outlet.

* Be careful not to let water get inside the unit or get it wet. If water or other liquid gets inside the unit, first turn off the power switch on the unit, unplug the power cord from the outlet, and contact your retailer. Continuing to use the unit in this state may result in a fire or electric shock.



* Do not use with any voltage other than the indicated power supply voltage (100V AC). 火災, 感電の原因と



* This unit can only be used in Japan. Do not connect to a direct current (DC) power source such as on a ship. This may cause a fire.

* Do not modify or disassemble this unit. Doing so may result in fire or electric shock. For internal inspection, maintenance, or repair, please contact your dealer or our service center.

Do not disassemble



* Do not place vases, flower pots, cups, cosmetics, medicines, containers containing water, etc. on this unit as these may cause a fire or electric shock if spilled or get inside.



* Do not use in the bath or shower room as it may cause fire or electric shock.

Prohibited from use in water areas



Safety Precautions (Please read this page)



- * A vacuum tube amplifier runs on a high voltage DC (direct current) power supply.
This high voltage is extremely dangerous. Do not open the case or attempt to disassemble or adjust the amplifier yourself. Doing so may result in fire or electric shock. Also, do not operate the amplifier with the case open.
This may cause fire or electric shock.



▲Attention

- * For safety reasons, when cleaning the product, be sure to unplug it from the outlet.
* If you will not be using the unit for an extended period of time, such as when traveling, be sure to unplug the power cord from the outlet for safety reasons.
- * When moving the unit, be sure to turn off the power switch, unplug the power cord from the outlet, and remove all external connection cords, such as those connecting other devices, before doing so, as this may result in a fire or electric shock.



Unplug the power cord from the outlet.

- * Do not insert or remove the power plug with wet hands as this may result in electric shock.

Do not touch with wet hands



- * Do not place in the following locations, as this may result in breakdown, fire, or electric shock.

Near heaters or other heat sources, near windows or other places exposed to direct sunlight or rain, poorly ventilated places with a lot of humidity or dust, or unstable places with vibrations or tilts.



- * Do not block the ventilation holes of this unit. Blocking the ventilation holes may cause heat to build up inside the unit, which may lead to a fire.

This unit has ventilation holes at the top and bottom to prevent the internal temperature from becoming too high. Please do not use the unit in the following ways:

Turn the unit upside down, on its side or on its back.

Do not push the unit into a small, poorly ventilated space such as a bookcase or a closet.

Do not use the unit with a tablecloth on it or place it on a carpet or futon.

- * When unplugging the power cord, do not pull on the power cord as this may damage the cord and result in a fire or electric shock. Always unplug by holding the plug.



- * If there is dust on the blades or the connecting surface of the power plug, wipe it off thoroughly as this may cause a fire.



- * Before turning on the power, please turn the amplifier volume (volume knob) to minimum.

Sudden loud noises may occur, which may cause hearing damage.



Please note

- * Please adjust the volume to an appropriate level depending on the time and place. Even small sounds can easily be heard at night, so please be careful when listening to music at night.

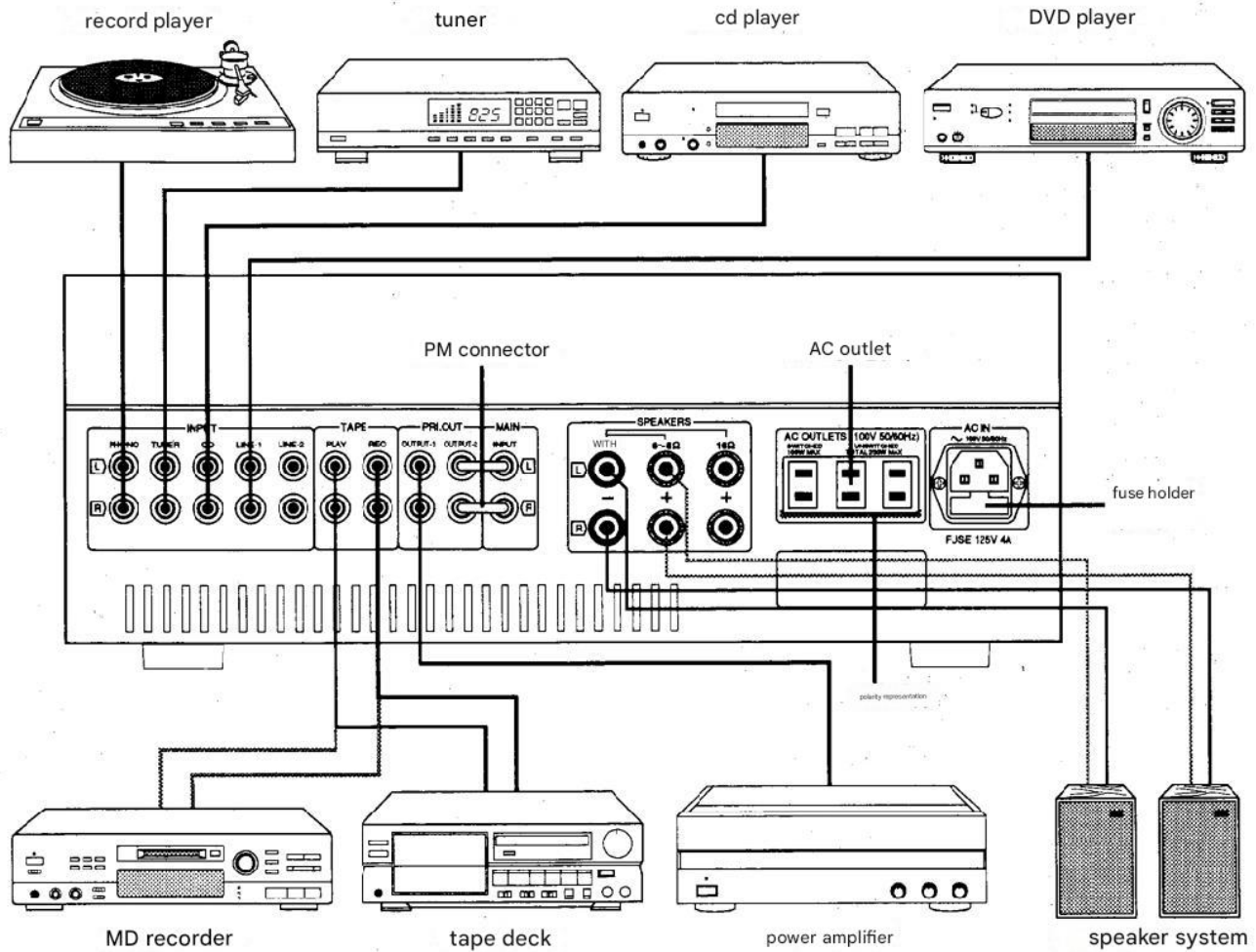


Under copyright law, you may not use any recordings or videotapes you have made from broadcasts, CDs, tapes, video disks, or commercially available soft tapes for any purpose other than personal enjoyment without the permission of the copyright holder.

Caution when using vacuum tube amplifiers

For those who are using a vacuum tube amplifier for the first time, we will explain the characteristics of vacuum tube amplifiers and points to note.

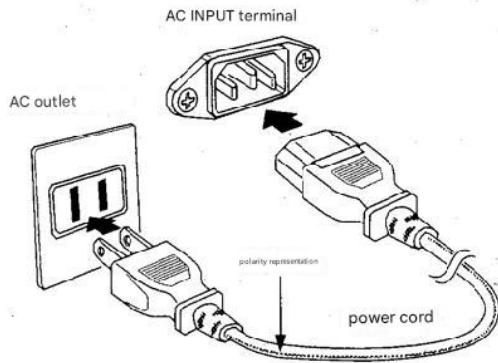
- * Immediately after turning on the power switch, the internal heater of a vacuum tube may momentarily glow very brightly. This is because when a current is passed through the heater at a low temperature, the internal resistance of the heater is small, so a large current flows, causing the heater to glow much brighter than usual. As the heater gradually warms up, the internal resistance increases due to the temperature rise, and the heater will maintain a constant brightness. Therefore, it is not abnormal for the heater to glow immediately after turning on the power.
- *The electrolytic capacitors used are of high quality, but due to the nature of the electrolyte, if the device is left without electricity for a long period of time, the electrolyte may deteriorate. We recommend that you power the device on at least once every six months, even if you are not using the device.
- *After turning on the power, a rustling noise may be heard until the operation of the vacuum tube stabilizes. This is not a problem, but due to the characteristics of the vacuum tube, it takes some time for the operation to stabilize after turning on the power. The operation will stabilize in about 3 to 5 minutes. From the viewpoint of sound quality, it is necessary to warm up for about 30 minutes until the operation stabilizes.
- *When turning on the power, always turn on the device that is the program source first, and then turn on this amplifier last. For example, turn on the tuner first, then the amplifier, and so on, leaving an interval between each device. On the other hand, when turning off the power, do the opposite: turn off this amplifier first, and then the program source device. This unit does not use a muting circuit that can deteriorate sound quality, so if you turn on this amplifier first and then turn on the program source device, or turn off the program source device without turning off this amplifier, an unexpected loud shock noise may occur. However, this noise will not damage the speakers.
- *Vacuum tube amplifiers, especially their output tubes, generate a considerable amount of heat. When installing this amplifier, please take into consideration airflow (convection). Leave at least 30cm of space above the amplifier, and avoid placing it directly on a carpet. This will cause heat to build up and shorten the amplifier's lifespan. The temperature will continue to rise for about 40 minutes after turning on the power, but will stabilize after that.
- *The power transformer used is specially designed and manufactured. Be sure to use a 100V power supply. The power transformer may make a slight hum due to vibration of the internal insulation, but this is not a malfunction.
- *General household 100V power sources have hot and cold (earth side), and the sound quality may change if you insert the AC plug into the outlet reversed. If there is a difference in sound quality when you switch the left and right outlets, select the one with the better sound quality and insert it.
- *Do not repeatedly turn the power switch on and off. When turning the power off and on again, wait at least 30 seconds before turning it back on. If you turn the power on immediately, a large current will flow and damage the vacuum tubes.



Connecting the power cord

The power cord of this unit is an inlet type (plug-in type). Make sure to insert the plug of the power cord (amplifier side) securely into the socket on the rear panel.

If the power cord is short and you have to use an extension cord, use a cord that is the same size as the unit's power cord or has a higher current capacity.



Power cord polarity indication and connection

The power cord of this unit has a polarity marking, and sound quality may improve if you match the polarity of the AC outlet you are plugging it into. If the household AC outlet has a polarity marking (usually the socket on the earth side is longer), make sure to match the side of the power cord with the white line printed on it with the earth side before inserting it.

*The polarity markings on the AC outlet on the rear of the unit correspond to the polarity of the power cord, so you can match the polarity with the device you are connecting.

About AC outlets

It is convenient to plug in the power plugs of devices connected to this amplifier, such as a tuner or record player.

SWITCHED (Capacity 100W): Power supply is turned ON/OFF in conjunction with the power switch.

UNSWITCHED (250W total capacity): Power is always supplied regardless of the power switch.

*It is dangerous if the total power consumption of the devices you connect exceeds the specified power capacity. Please check the power consumption before connecting.

*Use a power cord plug with polarity indication (white line or W mark).

When inserting an AC power cord, make sure that the earth side of the plug matches the polarity marking (white wire) on the AC outlet.

Connection (program source connection)

Notes on connection

- * Before making any connections, be sure to unplug the power cord from the outlet or press the power switch to turn off the power.
- * Before connecting, please also carefully read the instruction manual for the audio device you are connecting to this unit.
- * Please check the left and right channels carefully and connect them correctly (L to L, R to R).
- * Make sure to insert the plug securely; an incomplete connection may cause noise.

record player connection

The PHONO terminal of this unit is designed for high output cartridges such as MM type.

Connect the output cord of the record player to the PHONO terminal.

Connect the L plug of the output cord to the L terminal, and the R plug to the R terminal.

Terminal on the main unit side



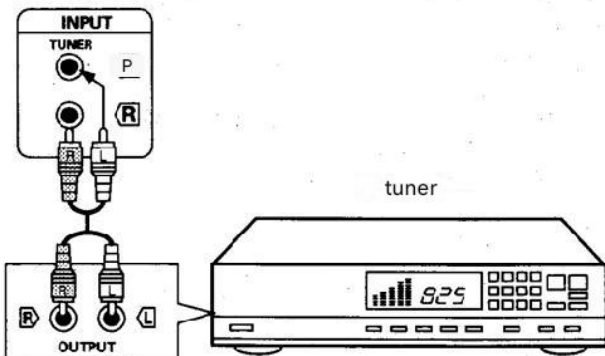
Do not connect a record player with a built-in phono equalizer to the PHONO terminal.

In this case, please use the UNE-1 and LINE-2 terminals.

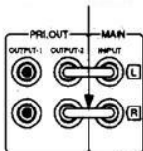
Tuner connection

Connect the tuner's output (OUTPUT) terminal to the TUNER terminal of this unit with a pin-plug cord.

Terminal on the main unit side



PM connector



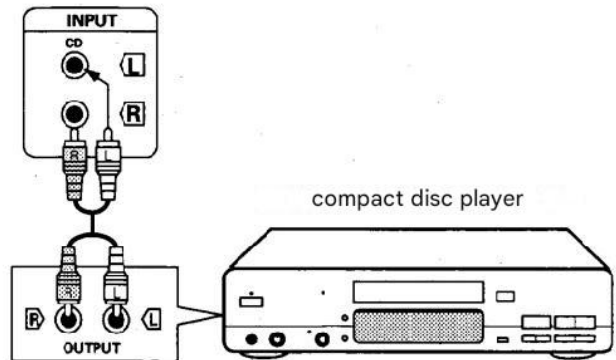
About the PM connector

This unit has a PM connector connecting the PRE OUT (OUTPUT-2) terminal and the MAIN INPUT terminal so that the preamplifier and main amplifier can be operated separately. Therefore, removing this PM connector will cut off the circuits between the preamplifier and main amplifier. If you are connecting a different preamplifier or main amplifier, unplug it, but if you are using it for any other purpose, be sure to leave this PM connector plugged in.

Connecting a compact disc player

Connect the OUTPUT terminal of the compact disc player to the CD terminal of this unit with a pin-plug cord.

Terminal on the main unit side



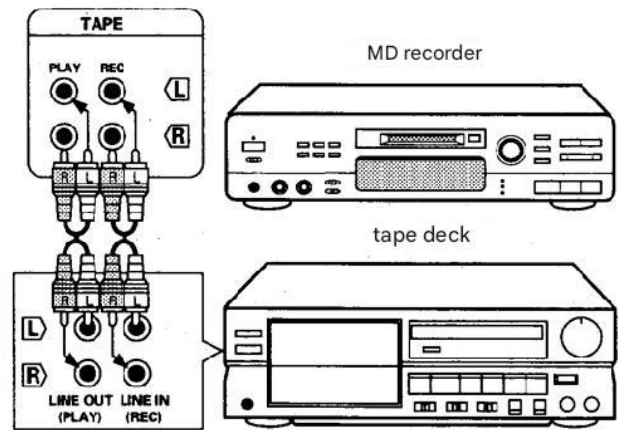
Tape deck connection

Connect a tape deck, DAT, or MD recorder here.

Connection for recording: Connect the input (UNE IN/REC) terminal of a tape deck etc. to the TAPE REC terminal of this unit with a pin-plug cord.

Connection for playback: Connect the output (UNE OUT/PLAY) terminal of a tape deck etc. to the TAPE PLAY terminal of this unit with a pin plug cord.

Terminal on the main unit side



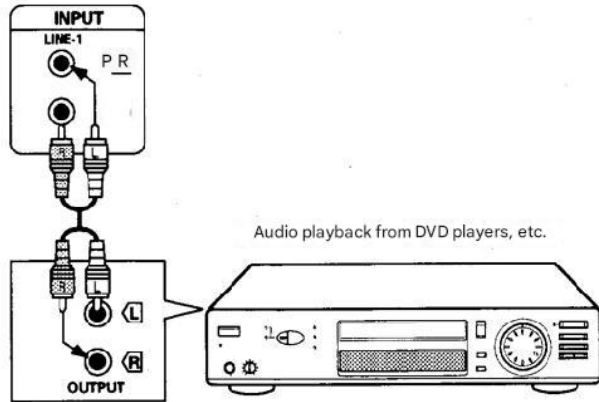
- * DAT, MD recorder or Hi-Fi video deck connected to TAPE terminal
You can use it by connecting it as shown above. *DAT..... Digital audio tape recorder
- * MD...Mini Disc
- * DVD: Digital Versatile Disc

Connections (program source/speaker system connections).

LINE-1, LINE-2 terminal connection

The LINE-1 and LINE-2 terminals have electrical performance equivalent to the CD and TUNER terminals, so please use them as audio playback terminals for DVD players, TV tuners, etc. Connect the output (OUTPUT) terminal of the device you are using to the LINE-1 or LINE-2 terminal of this unit with a pin plug cord.

Terminal on the main unit side



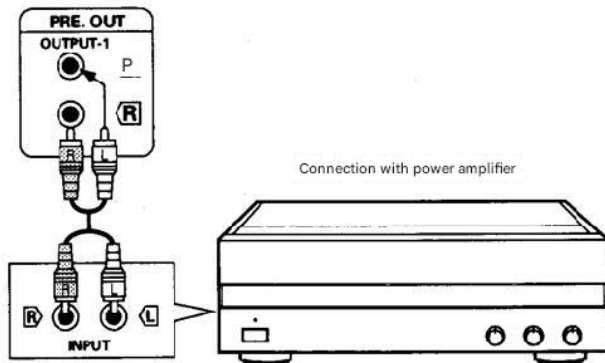
Connecting a preamplifier or main amplifier

This unit can only output the preamplifier (control amplifier). There are two preamplifier output circuits that operate the preamplifiers and one main amplifier input circuit that operates only the main (power) amplifier.

*Normally, the preamplifier output terminal (OUTPUT-2) and the main amplifier input terminal (INPUT) are connected with a PM connector. When using this unit as a main amplifier, pull out the PM connector.

Connect the other main amplifier input to the preamplifier output terminal, and the other preamplifier output to the main amplifier input terminal using a pin plug cord.

Terminal on the main unit side



Connecting the speaker system

When connecting speaker systems, connect the speaker system on the left side (viewed from the front) to the L terminal, and the speaker system on the right side to the R terminal.

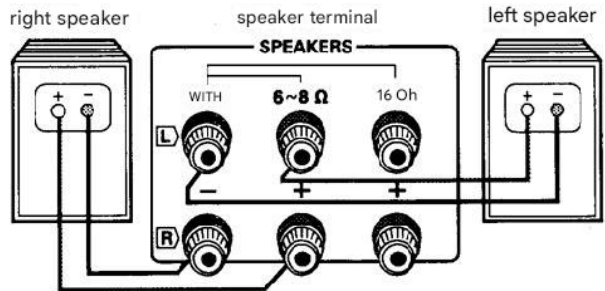
Also, be sure to connect the speaker terminals and the speaker system with the same polarity (+ to +, - to -). If you connect either the left or right polarity incorrectly, the center sound will seem missing, the position of the instruments will not be clear, and the sense of stereo direction will be lost.

Please note

*The rotating part (nut) of the speaker terminal is designed to come off if it is pushed beyond the appropriate range. Be careful not to lose it.

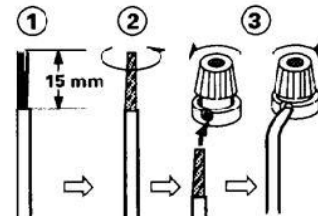
*Make sure that the speaker cord is properly inserted so that its core wire makes contact with the metal part inside the speaker terminal.

If the speaker cord is not fully inserted or is inserted too far and the wire is pinched by the insulation, no sound will come from the speaker. Also, be careful not to let the core of the speaker cord protrude from the terminal and come into contact with other terminals.



Connecting speaker cords

1. Strip the end of the cord.
2. Twist the core wire.
3. Loosen the speaker terminal, insert the core of the cord, and tighten the terminal.

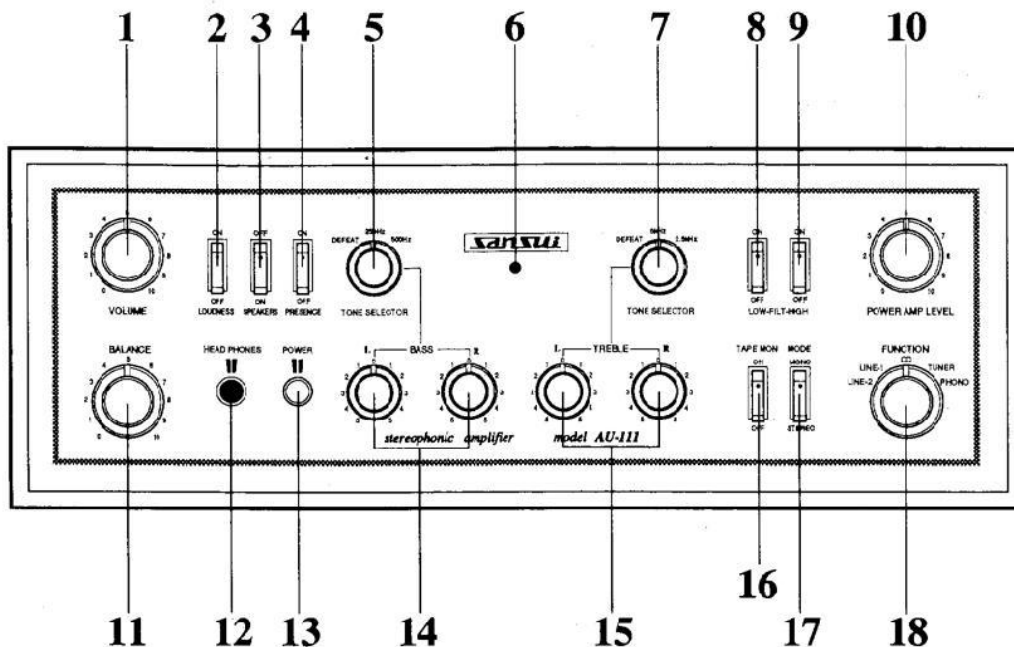


About speaker impedance

The speaker impedance must be greater than 80 and less than 160.

Connect the 80 speaker (+ side) to the 82 speaker terminal (+ side).

Connect the 160 speaker (+ side) to the 160 speaker terminal (+ side).



1 Volume control (VOLUME)

Turning the knob to the right to adjust the volume of the speakers or headphones increases the volume, and turning it to the left decreases the volume.

2 LOUDNESS switch (LOUDNESS)

The human hearing has the tendency to become less sensitive to low and high frequencies as the volume decreases, so low and high frequencies sound thin at low volumes. When this switch is pressed to the "ON" position at low volumes, low and high frequencies are moderately boosted to maintain the audible balance. When set to the "OFF" position, the loudness circuit is disconnected and the frequency response is flat.

3 SPEAKERS Switch

When listening to the performance through a speaker system, press this switch to the "ON" position. When listening to the performance through headphones, press this switch to the "OFF" position.

*Please use speakers with an impedance of 80 or higher.

4 Presence switch (PRESENCE)

When adjusting the bass range with the tone control, the unnecessary midrange range is also boosted at the same time, resulting in a flat acoustic response. However, by pressing this switch to the "ON" position, you can effectively boost only the bass range. When set to the "OFF" position, the presence circuit is disconnected, resulting in a flat frequency response.

5 Tone Selector/Bass (TONE SELECTOR / BASS)

This switch changes the frequency of the bass tone control rise and fall points.
 DEFEAT...The bass tone control circuit is disconnected, resulting in a flat response for the bass range only.
 250 Hz....The frequency of the rise and fall points of the bass tone control is 250 Hz.
 500 Hz....The frequency of the rise and fall points of the bass tone control is 500 Hz.

6 Power indicator

It lights up when the unit is turned on to let you know it is working, and goes out when the unit is turned off.

7 Tone Selector/Treble (TONE SELECTOR/TREBLE)

This switch switches the frequencies of the rise and fall points for the treble sound adjustment.
 DEFEAT...The treble tone control circuit is disconnected, resulting in a flat response for the treble range only.
 5 kHz....The frequency of the treble tone control's rise and fall points is 5 kHz.
 2.5 kHz....The frequency of the treble tone control's rise and fall points is 2.5 kHz.

8. Low filter switch (LOW FILT)

When this switch is in the "ON" position, it reduces the humming of the motor when playing records and other unpleasant low frequency noises. When in the "OFF" position, the filter circuit is disconnected.

9 High filter switch (HIGH FILT)

When this switch is in the "ON" position, it reduces relatively high frequency noise such as scratch noise (crunching noise) from poor quality records and high frequency noise (fluorescent light noise in the case of radios). When in the "OFF" position, this filter circuit is disconnected.

10. Power amplifier level adjustment knob (POWER AMP LEVEL)

This knob adjusts the audio input level to the power amplifier when using this unit as a power amplifier by separating the preamplifier and power amplifier. Turning it to the right increases the audio input level, and turning it to the left decreases the audio input level. When using this unit as a normal integrated amplifier, adjust it to almost maximum (9-10) and adjust the volume with the volume control knob.

11 Balance control (BALANCE)

When playing in stereo, this knob adjusts the balance between the left and right volumes. While listening to the sound, adjust it so that the volume from the left and right speakers is equal.

12. HEAD PHONES jack (HEAD PHONES) When you cannot play loud music in the listening room late at night, or when you want to monitor the sound, plug your headphones into this jack. Simply plug them in here to enjoy stereo playback.

The sound from the speaker will not be muted even if the headphone plug is inserted into the jack. When using headphones only, set the speaker switch to "OFF".

13 Power switch (POWER)

Press this switch to turn the power on and the power indicator will light up. Press it again to turn the power off and the power indicator will go out.

14 Bass adjustment knob (BASS L/R)

This knob adjusts the strength of the bass. Turning it clockwise from 0 (FLAT) makes it stronger, and turning it counterclockwise makes it weaker. L adjusts the left channel, and R adjusts the right channel.

*The bass frequency that can be adjusted varies depending on the tone selector setting.

15 Treble adjustment knob (TREBLE L/R)

This knob adjusts the strength of the treble range. Turning it clockwise from 0 (FLAT) makes it stronger, and turning it counterclockwise makes it weaker. L adjusts the left channel, and R adjusts the right channel. *The treble range that can be adjusted varies depending on the tone selector setting.

16 Tape monitor switch (TAPE MON) When recording using a 3-head tape deck, pressing this switch to the "ON" position activates the tape monitor circuit, allowing the sound of the tape being recorded to be played back through this amplifier at the same time.

*When playing back on a tape recorder, this switch should also be in the "ON" position.

When playback of the tape or other source has finished, set the tape monitor switch to the "OFF" position. The program source selected with the function switch will no longer be played.

17 Mode switch (MODE)

This switch switches between stereo and mono playback. **STEREO:** Set this switch to this position when listening to stereo broadcasts, stereo recorded records, stereo recorded tapes, etc.

MONO: Set to this position if you want to listen to mono playback.

*When set to the "MONO" position, the same sound comes out of both speakers even if the input signal is only the left channel or only the right channel.

18. Function switch (FUNCTION) This switch is used to select the program source you want to listen to.

PHONO...Set to this position when listening to records using a record player connected to the PHONO terminal.

TUNER...Set this to this position when listening to broadcasts using a tuner connected to the TUNER terminal.

CD... Set this to this position when listening to a compact disc using a compact disc player connected to the CD connector.

LINE-1... Set to this position when using a device connected to the LINE-1 terminal.

LINE-2... Set to this position when using a device connected to the LINE-2 terminal.

operate

before you start playing

Before you start playing, check the position of each knob and switch.

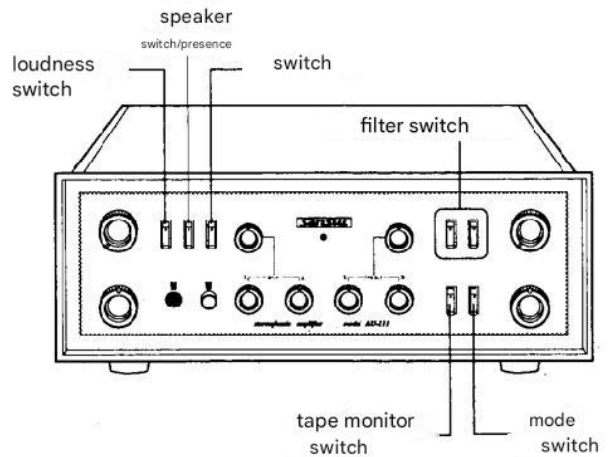
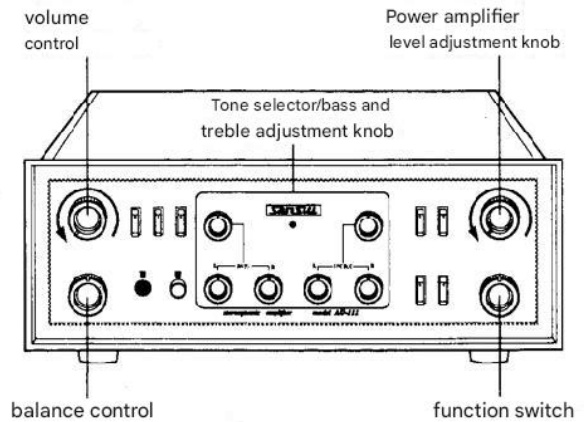
- * Turn the volume control and power amplifier level adjustment knob all the way to the left to set them to the minimum volume "0" position.
- * The balance control should be in the middle position "5".
- * Tone selector in DEFEAT position.
- * Set the bass and treble adjustment knobs to the center position.
- * If you want to listen to the performance through a speaker system, set the speaker switch to the "ON" position. When listening to the performance through headphones, set the speaker switch to the "OFF" position.
- * Set the loudness switch, presence switch, low/high filter switch and tape monitor switch to the "OFF" position and the mode switch to the stereo position.

Get started with the following steps

1. Turn on the power to the CD player or other devices connected to this unit.
2. Press the power switch to turn on the unit. It will take about 3 to 5 minutes for the unit to become stable.
3. Operate the CD player or other device connected to this unit to play the desired program source.
4. Set the function switch on this unit to the "CD" position.
5. Gradually turn the power amplifier level control knob on this unit (set the knob to position 5 to 10).
6. Gradually turn the volume control on the unit to adjust the volume.
7. Adjust the sound quality by adjusting the bass and treble controls, the loudness switch, the presence switch, and the low/high filter switch.

- Before switching the function switch, be sure to set the volume control of this unit to the minimum "0" position.

When switching the power off, always turn off the unit first, then the program source.



record playback

1. Set the function switch to the PHONO position.
2. Operate the record player and play the record.
3. Adjust the volume, sound quality, etc. and enjoy playing.

*The PHONO terminal on this unit is designed for high output cartridges such as MM type.

*When the low filter switch is set to "ON", it is possible to reduce the humming sound of the motor when playing records and other unpleasant low-frequency noises.

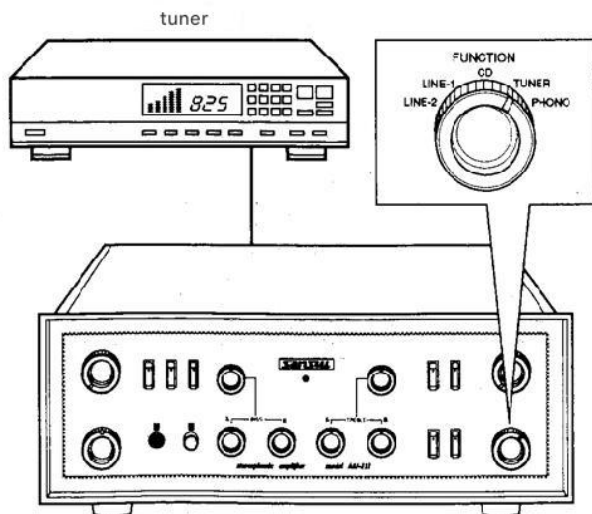
*If you hear a buzzing or humming noise, please check that the pin plugs are not properly connected.

If you are using a high impedance (300 to 1000) MC cartridge:
This is possible by installing an optional input transformer (A-603S) in the MT9P socket inside the unit.



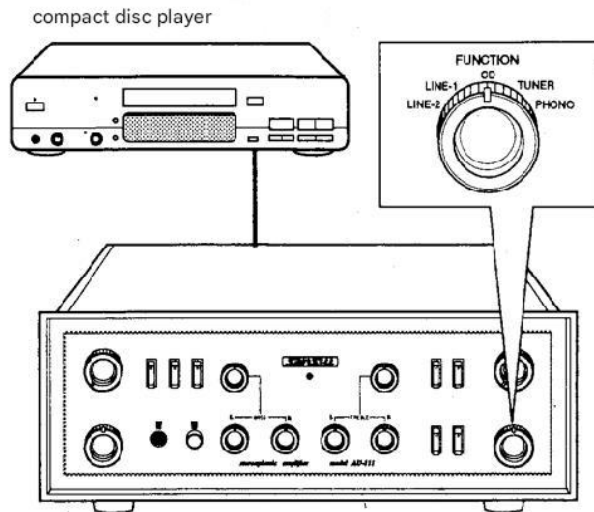
Broadcast reception

1. Set the function switch to the "TUNER" position.
2. Operate the tuner to receive the broadcast.
3. Adjust the volume, sound quality, etc. to enjoy the broadcast.



Compact disc playback

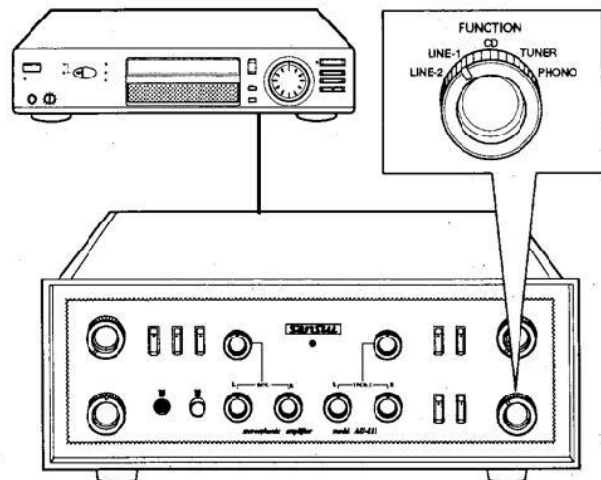
1. Place the function switch in the "CD" position.
2. Operate the compact disc player to play the compact disc.
3. Adjust the volume, sound quality, etc. and enjoy playing.



Playback from a device connected to the LINE terminal

1. Set the function switch to the "LINE-1" or "LINE-2" position depending on the device you are playing.
2. Operate the connected device and make it operational.
3. Adjust the volume, sound quality, etc. and enjoy playing.

Audio playback from DVD players, etc.

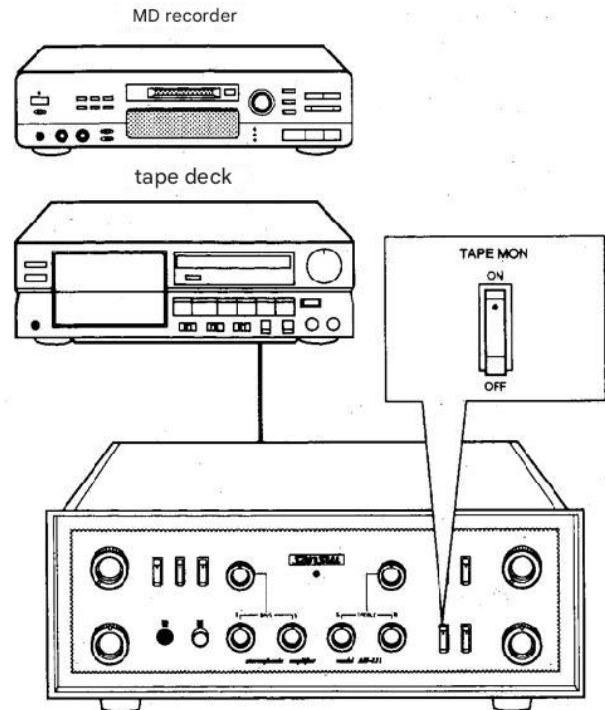


tape playback

To play back audio from a tape deck, DAT, MD or VCR connected to the TAPE PLAY terminal, do the following:

1. Set the tape monitor switch to the "ON" position.
2. Operate the tape deck or other device to start playback.
3. Adjust the volume, sound quality, etc. and enjoy playing.

When playback of the tape or other material has finished, set the tape monitor switch to the "OFF" position.
The program source selected with the function switch will no longer be playable.



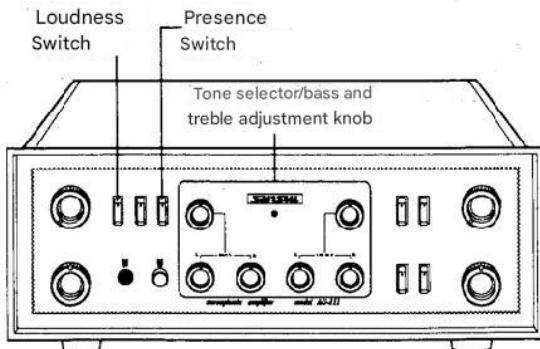
About tone control

The tone control is used to correct changes in sound quality caused by the characteristics of the speaker system or cartridge, or sound absorption or reflection due to room conditions, or to adjust the sound quality to your liking.

To adjust the frequency, select the frequency with the tone selector and turn the left and right bass and treble knobs. To increase the bass and other low frequencies, turn the bass adjustment knob to the right of the center, or to the left to decrease it.

High-pitched sounds such as cymbals will be stronger when the treble adjustment knob is turned to the right of center, and weaker when turned to the left.

This unit has a wide range of sound quality adjustments thanks to the combination of bass and treble tone selectors and bass and treble adjustment knobs that can be adjusted independently for the left and right sounds, allowing you to obtain the sound quality you desire.

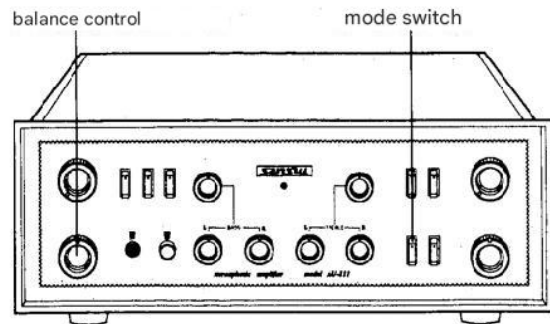


About stereo balance

The stereo balance is affected by the placement and efficiency of the left and right speakers, the layout of furniture, etc. If the volume of the left and right speakers differs and the playback sound sounds unbalanced, adjust the stereo balance with the balance control.

To achieve the balance, set the mode switch to the "MONO" position, play the program source at a volume that you normally listen to, and turn the balance control so that the sound comes from the center of the left and right speakers.

Once the adjustment is complete, return the mode switch to the "STEREO" position.



Operation (How to record)

tape recording

You can record records, CDs, broadcasts, or program sources from devices connected to the LINE-1 and LINE-2 terminals to a tape deck or MD recorder connected to the TAPE recording (REC) terminal.

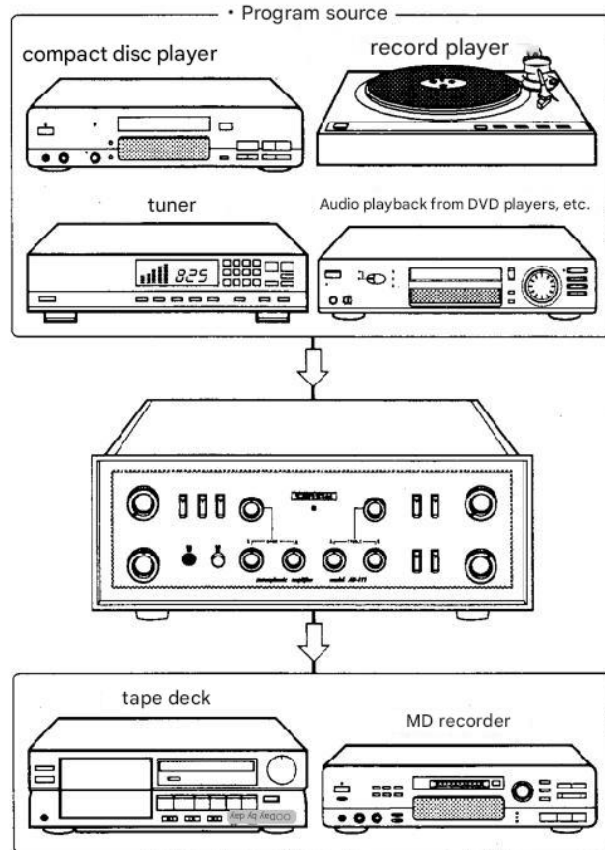
When recording records, CDs, or program sources from devices connected to the LINE-1 and LINE-2 terminals.

1. Set the function switch according to the program source to be recorded (record, CD, LINE, etc.).
2. Start playing the program source.
3. Operate the tape deck or MiniDisc recorder to record. Adjust the bell and start recording.

When making analog recordings using an MD recorder, adjust the recording level before starting recording.

*The volume, balance, bass and treble controls do not affect the recording level or quality of the signal being recorded.

Under copyright law, you may not use any recordings you have made from broadcasts, records, tapes, video discs, or commercially available soft tapes for any purpose other than personal enjoyment without the permission of the copyright owner.

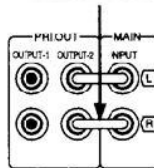


How to use a preamplifier or main amplifier

This unit has preamplifier output circuits (2 systems) that allow you to extract output from just the preamplifier (control) and a main amplifier input circuit (1 system) that operates just the main (power) amplifier.

*Normally, the preamplifier output terminal (OUTPUT-2) and the main amplifier input terminal (INPUT) are connected with a PM connector.

PM connector



When using this unit as a preamplifier

Connect the other main amplifier input to the preamp output terminal. Adjust the volume and sound quality with the knobs on this unit.

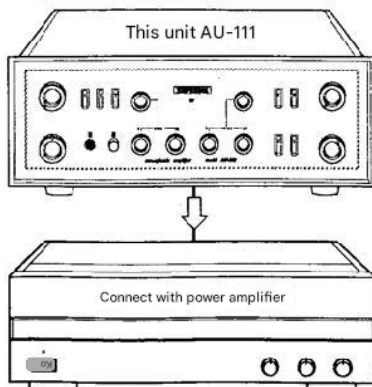
When using this unit as a main amplifier

Pull out the PM connector and connect the output of another preamplifier to the main amplifier power terminal.

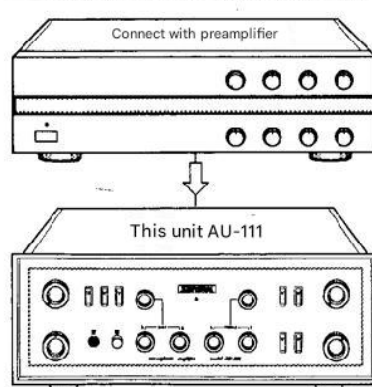
In this case, the presence switch and the headset Since all switches and knobs other than the jack will not function, please adjust the volume and tone on another preamplifier.

*Please make sure to leave this PM connector plugged in when not using the main amplifier.

Using this unit as a preamplifier



Using this unit as a power amplifier

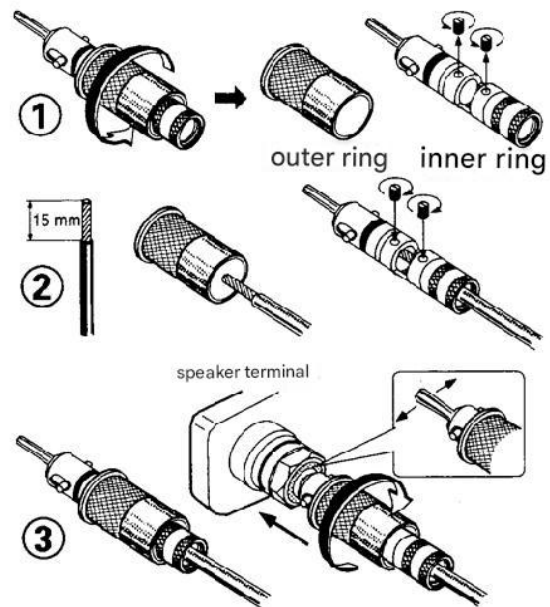


References

Connecting speaker cords

An example of using commercially available speaker cord connectors (banana type)

1. Remove the outer ring of the bracket and loosen the two screws on the inner ring.
2. Peel off the insulation from one end of the cord, twist the core wires, pass them through the outer ring first, then insert the core wires into the inner ring and tighten the two screws.
3. Lightly tighten the outer ring. Insert the connector into the speaker terminal, then tighten the outer ring again. The tip of the metal fitting will open and lock into the speaker terminal.



Installing commercially available casters

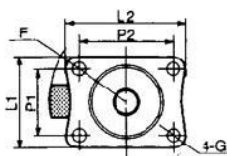
Setting up the unit can be made easier by replacing the legs at the rear of the base plate with commercially available track-type casters (2 pieces).

Truck type caster reference model number

Nylon wheels: No.420-G-N25-1

How to exchange

1. Remove the two legs from the rear of the unit.
 2. Attach the track-type casters with screws.
- *Screws must not protrude more than 3mm into the set.
*When setting up, please be careful not to subject it to impact or drop it.

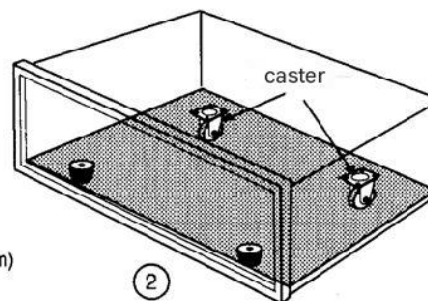
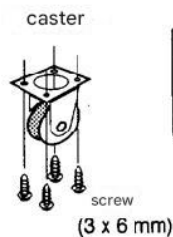
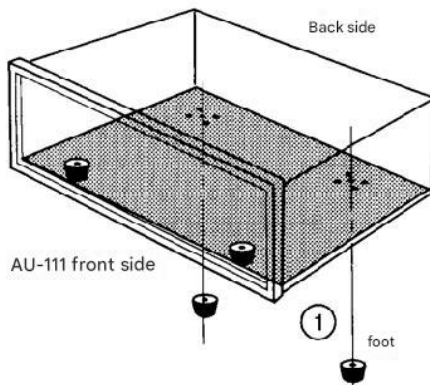


nylon car

Product number	Model number	Allowable load (kgf)	net weight (g)	Code No.
1	No.420-G-N25-1	10	30	9713
2	No.420-G-N32-2	18	40	9714
3	No.420-G-N38-3	28	70	9715

Size chart (nylon wheels)

Product number	D	E	F (Turning radius)	G	H	J	L1	L2	P1	P2	W
1	φ 25	9	R23	φ 4.2	36	1.4	30	35	23	26	12
2	φ 32	11	R28	φ 4.2	42	1.6	32	38	24	30	14
3	φ 38	13	R32	φ 5.3	50	1.8	38	46	28	36	16



Power amplifier section

Rated output (20Hz~20kHz, both channels operating simultaneously)

8 Ω, 16 Ω 40 W + 40 W

Maximum practical output (both channels operating simultaneously)

8 Ω, 16 Ω 45W+45W

Total harmonic distortion

When the output is fixed (8Ω) 0.8% or less

1/2 rated output (82) Less than 0.25%

Intermodulation distortion (60 Hz:7,000 Hz=4:1, SMPTE method)

8 Oh 0.8% or less

Damping factor (1kHz)

..... 15 (8 Ohms)

Frequency response (1W)

..... **10 Hz ~ 50 kHz ± 1 dB**

Input Sensitivity/Input Impedance (1kHz)

..... 2.5 V/150 KΩ

Signal to noise ratio (A network, short circuit)

..... 110 dB or more

residual noise 0.5 mV (Terminals 6 to 80)

Headphone terminal output

..... **160 mW / 33Ω**

Speaker output terminal load impedance

..... **6 Ω ~ 16 Ω**

Preamp section

Input sensitivity/input impedance (1kHz)

PHONO(MM) 4.0 mV/100 KΩ

When using PHONO(MC HIGH) A-603S

..... **250 μV / 30~100 Ω**

PHONO(MM) 4.0 mV/100 KΩ

TUNER 250 mV / 300 KΩ

LINE-1, 2 ..250 mV/300 KΩ

CD.. 250 mV/300 KΩ

TAPE PLAY.. 250 mV/300 KΩ

Output voltage (1kHz)

REC OUT 250 mV

PRE OUT 2.1 V

Channel Separation (1kHz)

PHONO(MM) 55 dB

TUNER 60 dB

LINE-1, 2 60 dB

CD 60 dB

TAPE PLAY 60 dB

tone control

BASS (fo=250 Hz) + 14 dB, -13 dB (50 Hz)

BASS (fo=500 Hz) + 17 dB, -17 dB (50 Hz)

TREBLE (fo=2.5 kHz) + 10 dB, -10 dB (10 kHz)

TREBLE (fo=5 kHz) + 6.5 dB, -6.5 dB (10 kHz)

filter

High (fo=6 kHz) -27 dB (20 kHz)

Low (fo=70Hz) -25 dB (20 Hz)

Loudness (volume: -30 dB)

..... + 10 dB (50 Hz)

..... + 5 dB (10 kHz)

Presence (fo=125 Hz)

..... + 7.5 dB (20 Hz)

others

Power supply voltage **AC 100 V**

power frequency 50Hz/60Hz

Rated power consumption (Electrical Appliance and Material Control Law)

..... **210 W**

Dimensions (including legs, knobs, and terminals)...Width 460 mm

..... Height 197 mm

..... Depth: 433 mm

Standard mass (weight) 26.0kg (main unit only)

Use vacuum tubes

12AX7 6

6AQ8 1

12BH7A 2

6L6GC 4

accessories

power cord 1

operating instructions 1

circuit diagram 1

*The design and specifications of this unit may change without prior notice for improvement purposes.

Subject to change.

How to care for it

If the main body (bonnet or panel surface) becomes dirty, wipe it with a soft dry cloth.
Do not use thinner, benzene, alcohol, etc. as they will damage the surface.

Trouble and repair requests

Before requesting service

Symptoms that seem to be amplifier malfunctions may be caused by the way the amplifier was used or by other devices. Before requesting service, please read this instruction manual again carefully and check the connections and operation.

symptoms	reason	process
●The power does not turn on even when I press the power switch.	The power cord is not securely plugged into the outlet.	Please re-insert it.
●No sound comes from either or both speakers.	Speaker cords are not properly connected.	Please reconnect the speaker cord.
●The playback sound is unnatural and the sound image is not localized.	The speaker polarity (+/-) is incorrect.	Reconnect with the correct polarity.

About after-sales service

Warranty: This product comes with a warranty.

Please check the details such as the store stamp and date of purchase, and keep it in a safe place.

If the required information is not filled in or is lost, the warranty may be void even during the warranty period.

Warranty period: This product is covered for 2 years from the date of purchase.

(Vacuum tubes are excluded.)

If a malfunction occurs within this period under normal use, it will be repaired in accordance with the terms of the warranty.

Repairs after the warranty period has expired Please contact our consumer consultation service or the store where you purchased the product. If the product can be restored to its original functionality through repair, we will provide a paid repair service at your request.

The minimum retention period for replacement parts*1 for this product will be 8 years*2 after production is discontinued.

*1: Repair parts are parts that are used to maintain the functionality of this product.

This is a necessary part.

*2: This period is based on guidance from the Ministry of International Trade and Industry.

Request for service

Even after checking (taking measures), the problem did not return to normal, and the amplifier was deemed broken.

If this occurs, unplug the power cord from the outlet and contact your dealer or the nearest Fuji Electric service center with the following information:

(If the product was purchased within the last two years, please present the warranty card.)

Name, address, contact number

Model: Vacuum tube stereo integrated amplifier
AU-111 vintage 1999

Please let us know as much detail as possible about the malfunction.

●Date of purchase: XX/XX/XX

Please note

*We may not be able to accept repairs after the product has been modified or disassembled.

*Warranty charges may apply for wiring modifications or damage caused intentionally or carelessly, even if the product is within the warranty period.