

STEREO POWER AMPLIFIER**TA-N77ES****OPERATING INSTRUCTIONS** page 2

Before operating the unit, please read this manual thoroughly and retain it for future reference.

MODE D'EMPLOI page 10

Avant la mise en service de cet appareil, prière de lire attentivement ce mode d'emploi que l'on conservera pour toute référence ultérieure.

BEDIENUNGSANLEITUNG Seite 18

Vor der Inbetriebnahme lesen Sie diese Anleitung sorgfältig durch und bewahren Sie sie zum späteren Nachschlagen auf.



For the customers in the United States

OWNER'S RECORD

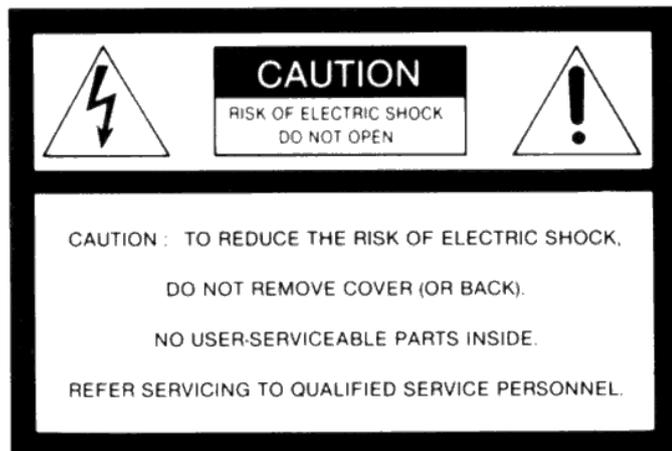
The model and serial numbers are located at the rear. Record the serial numbers in the spaces provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. TA-N77ES

Serial No. _____

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For the customers in the United Kingdom

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.

For the customers in Canada

CAUTION:

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

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Features

Super legato linear system

This unit employs super legato linear system which drives low impedance speakers and assures powerful reproduction without low crossover distortion and switching distortion over the wide range.

Spontaneous twin drive power supply circuit

Condensers having large capacity are used for the voltage amplification drive stage of class A and power output stage of class B. Thus, a stable output and high quality sound are obtained, resulting in exclusion of power interferences. The class A stage realizes a stable operation free from interference of the power stage even when an instantaneous or strong output is received.

G chassis

A one-piece, hard chassis, named "Gibraltar", reduces distortion caused by vibrations.

This reduces air vibrations from the floor and speakers and also reduces vibrations caused by the power transformer and power transistors.

Precautions

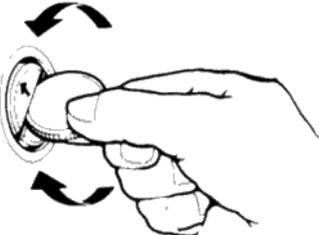
- Before operating the unit, be sure that the operating voltage of your unit is identical with that of your local power supply. See OPERATING VOLTAGE on page 4.
- Unplug the unit from the wall outlet if it is not to be used for an extended period of time. To disconnect the cord, pull it out by grasping the plug. Never pull the plug out by the cord.
- Avoid installing or leaving the unit in a location:
 - near heat sources such as radiators, airducts or heaters
 - subject to direct sunlight
 - exposed to rain or moisture
 - where it is liable to come into contact with dust or dirt
 - that is unventilated, such as a bookcase
- Should any liquid or solid object fall into the unit, unplug the stereo system and have the unit checked by qualified personnel before operating it any further.

If you have any question or problem concerning your unit that is not covered in this manual, please consult your nearest Sony dealer.

For the customers in the USA

For detailed safety precautions, see the leaflet "IMPORTANT SAFEGUARDS".

Operating voltage

USA and Canada	Operates on 120 V AC, 60 Hz
Other countries	Operates on either 120 V, 220 V or 240 V AC, 50/60 Hz The voltage selector is located on the rear panel. If the selector must be reset, disconnect the AC power cord and set the selector to the proper voltage of your local power supply. 

System connections

Connection notes

- The power cord should be connected last of all, first making sure that the POWER switch is turned off.
- The cable connectors should be fully inserted into the jacks.
A loose connection may cause hum and noise.
- Cord plugs and jacks are color coded. Red plugs and jacks are for right-channel and white ones for left-channel.

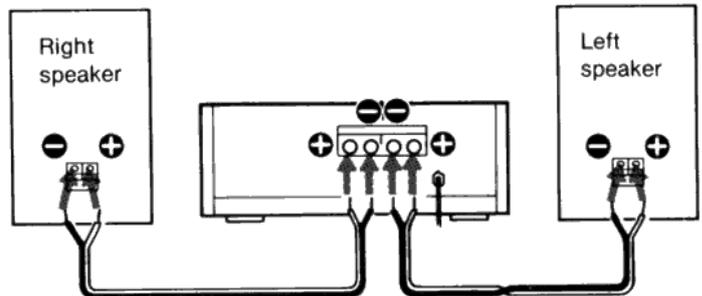
Speaker connection

The unit provides screw-type binding SPEAKER terminals. Speaker cords whose diameter is up to 4mm (6/32 inches) can be connected to the terminals. Connect a speaker system having a large allowable input suited to the rated output of the amplifier.

This unit has terminals for two pairs of speaker systems, A and B, which can be selected individually or simultaneously by means of the SPEAKER selector.

How to connect

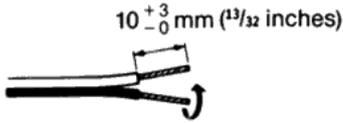
Before connecting, be sure to turn off the power.



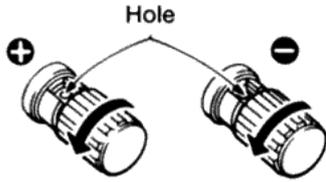
Speaker cords

The largest available size of speaker cord is recommended. It will minimize power loss in the wiring, and retain the advantages of the amplifier's high damping factor.

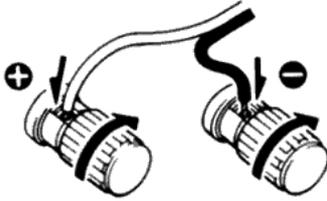
- 1 Strip approx. 10 mm ^{+3}_{-0} mm of outer covering from the speaker cord and twist the core.



- 2 Turn the SPEAKER terminal in the direction of arrow so that the hole for the core appears.



- 3 Fully insert each twisted core into the hole and tighten it by turning the terminal in the direction of arrow.



After completing the steps, confirm if the connection is secure by slightly pulling on the speaker cord.

CAUTION

Correct connection prevents exposure of core and assures safety even if you touch the base of the SPEAKER terminal.

Speaker cord coding

Generally speaker cords are color-coded or marked to indicate the + - polarities. Follow the coding to prevent faulty connections.

Right terminals: for right speaker

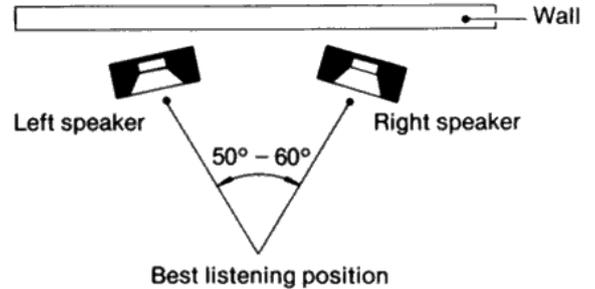
Left terminals: for left speaker

+ (red) cord: for + connection

- (black) cord: for - connection

Speaker installation

The distance between speakers, or the speakers and a listener depends mainly on the room size. Generally it is recommended that the speaker/listener relationship be an equilateral triangle configuration (as illustrated). If the speaker separation is too wide, and undesirable "hole in the middle" effect occurs.



Place the right and left speakers in similar acoustic environments, otherwise you will obtain unbalanced sound. For example, placing one speaker near an open door or archway will decrease the apparent bass from that speaker.

Best sound is usually obtained in a room with carpeting on the floor, heavy draperies and upholstered furniture. Since each room has its own individual acoustic characteristic, which is a function of its size, construction and furnishing, some experimentation with speaker placement is generally necessary before the correct balance of stereo image and bass response is obtained. This will be time well spent, resulting in your enjoyment of the maximum capabilities of your music system.

If the + - connection is incorrect

The base tones will seem to be missing and the position of the instruments becomes obscure.

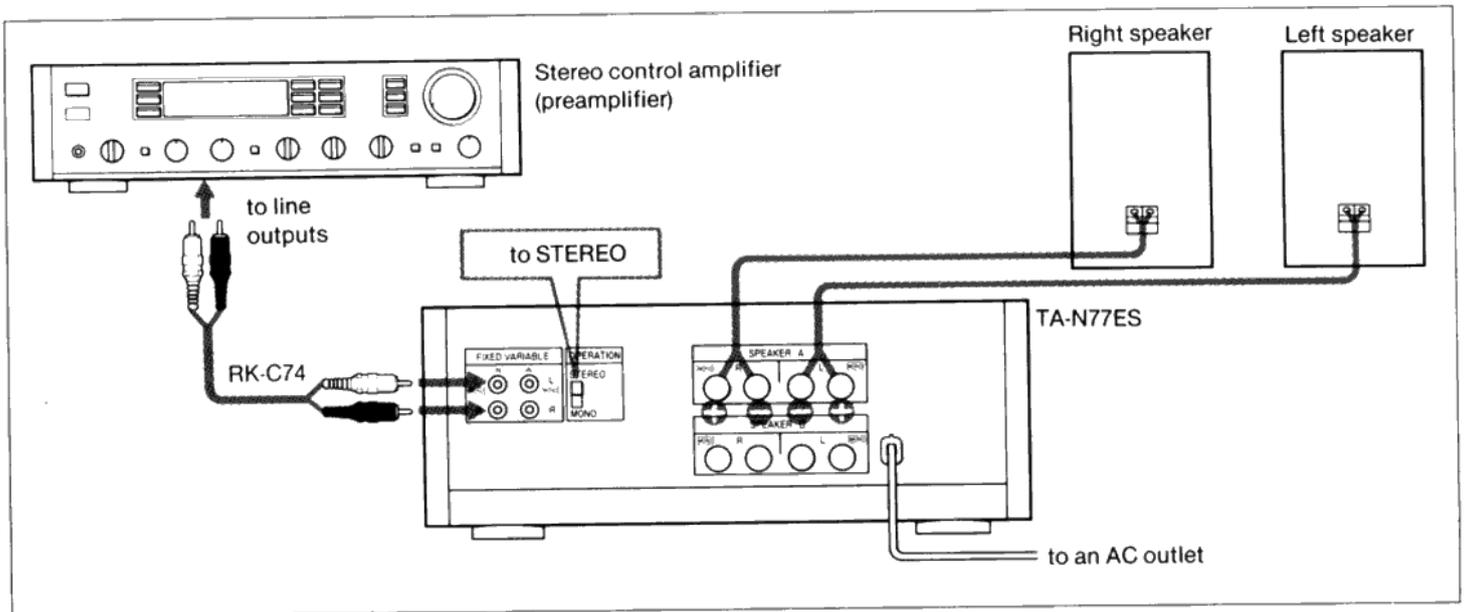
Preamplifier connection

The unit provides two kinds of input jacks, FIXED and VARIABLE, which can be switched by means of the INPUT selector located on the front panel.

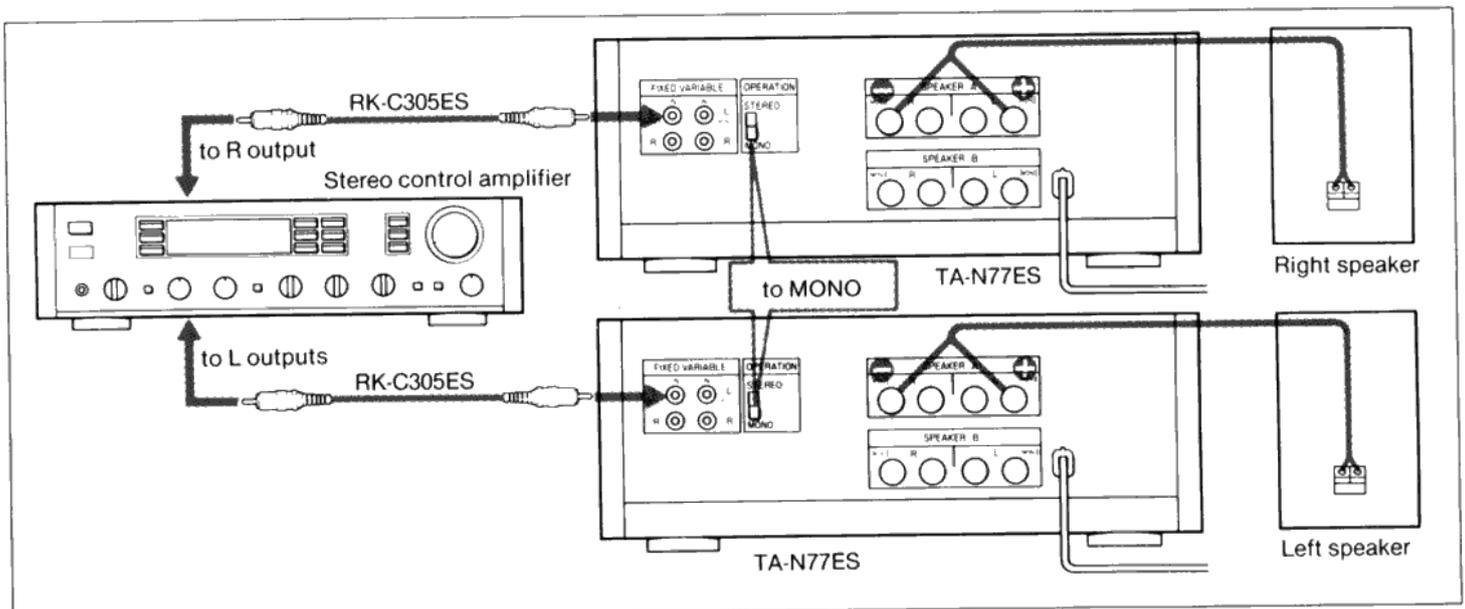
FIXED input jacks: Normally connect a preamplifier to these jacks. When these jacks are used, the sound level is controlled by the attenuator on the connected preamplifier.

VARIABLE input jacks: A CD player, etc., can be directly connected to these jacks to enjoy the digital sound. In this case, the LEFT and RIGHT ATTENUATORS on the front panel control the sound level.

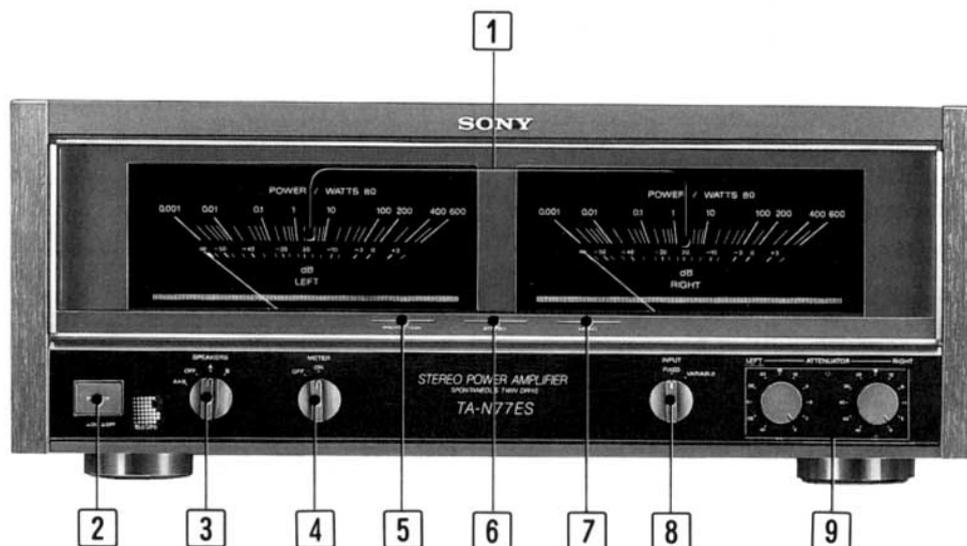
Connection as a stereo power amplifier



Connection as a monaural power amplifier



Function of controls



1 Left and right meters

When a speaker system having a nominal impedance of 4 ohms is used, the needles of the meters oscillate twice as when 8-ohm speakers are used.

2 POWER switch

3 SPEAKERS selector

Selects speaker system A or B, or both. For headphone monitoring on the connected preamplifier, set to OFF.

4 METER switch

Switches meter deflection on or off.

5 PROTECTION indicator

Lights up for approx. 8 seconds immediately after turning on the unit. This indicates that the built-in muting circuit is activated.

In normal operating conditions, this does not light. If it lights up (speaker sound is not heard) while operating, an abnormality has occurred. In this case, disconnect the AC power cord and check the connected components and speaker systems.

6 STEREO indicator

Lights up when OPERATION is set to STEREO and a stereo program is played.

7 MONO indicator

Lights up when OPERATION is set to MONO and a monaural program is played.

8 INPUT selector

Selects input source connected to the input jacks on the rear panel; FIXED or VARIABLE.

9 ATTENUATORS and indicator

Control input signal sound level from the preamplifier connected to the VARIABLE input jacks. The indicator lights up to indicate that the ATTENUATORS are activated.

Specifications

Audio power specifications

POWER OUTPUT AND TOTAL HARMONIC DISTORSION:

With 4 ohm loads, both channels driven, from 20 – 20,000 Hz; rated 270 watts per channel minimum RMS power, with no more than 0.006% total harmonic distortion from 250 milliwatts to rated output.

With 8 ohm loads, both channels driven, from 20 – 20,000 Hz; rated 200 watts per channel minimum RMS power, with no more than 0.004% total harmonic distortion from 250 milliwatts to rated output.

Other specifications

Item	Condition	Model except for North Europe	Model for North Europe
Continuous RMS power output (both channels driven simultaneously)	4 ohms 20 Hz – 20 kHz THD 0.006%	270 W + 270 W	—
	6 ohms 20 Hz – 20 kHz THD 0.005%	230 W + 230 W	190 W + 190 W
	8 ohms 20 Hz – 20 kHz THD 0.004%	200 W + 200 W	160 W + 160 W
Dynamic power	1 ohm	660 W	530 W
	2 ohms	800 W	640 W
	4 ohms	520 W	420 W
	6 ohms	370 W	300 W
	8 ohms	300 W	240 W
Power bandwidth (IHF)	4 ohms, 0.02%	10 Hz – 100 kHz	—
	8 ohms, THD 0.02%	10 Hz – 100 kHz	
Dynamic headroom ('78 IHF)	4 ohms	2.8 dB	—
	8 ohms	1.8 dB	
Total harmonic distortion	4 ohms, at 10 watt output	0.004%	—
	6 ohms, at 10 watt output	0.003%	
	8 ohms, at 10 watt output	0.0018%	

Intermodulation (IM) distortion 60 Hz: 7 kHz = 4:1	4 ohms at rated output	0.006%	—
	6 ohms at rated output	0.005%	
	8 ohms at rated output	0.004%	
Damping factor	8 ohms, 1 kHz	100	
Slew rate	—	150 V/μsec 300 V/μsec (inside)	
Residual noise	network A	less than 35 μV	
Frequency response	—	1 Hz – 200 kHz $\pm \frac{0}{-3}$ dB	
Input sensitivity	—	1 V, 30 kohms	
S/N (network) '78 IHF	FIXED VARIABLE	120 dB (A)	

General

System

Super legato linear, purecomplementary SEPP power amplifier, powerful power supply

Power requirements

Model for USA and Canada: 120 V AC, 60 Hz
Model for other countries: 120, 220, or 240 V AC adjustable, 50/60 Hz

Power consumption

Model for USA: 380 watts
Model for Canada: 950 VA
Model for the United Kingdom: 490 W
Model for North European countries: 330 W
Model for European countries and other countries: 510 W

Dimensions

Approx. 470 x 185 x 440 mm (w/h/d)
(18⁵/₈ x 7³/₈ x 17³/₈ inches)

Weight

including projecting parts and controls
Approx. 25 kg (55 lb 2 oz), net

Design and specifications subject to change without notice.

Troubleshooting guide

Before going through the check list below, first refer back to the connection and operating procedures. Should any problem persist after you have made these checks, consult your nearest Sony dealer.

Trouble	Cause	Remedy
No audio	Faulty connection	<ul style="list-style-type: none">• Check the connections.
	Faulty setting	<ul style="list-style-type: none">• Check the setting of the SPEAKERS selector.• Check the setting of the INPUT selector.• Check the setting of the ATTENUATORS if the VARIABLE input jacks are used.
Monaural sound is heard even though a stereo program is played.	Faulty setting of the OPERATION selector	<ul style="list-style-type: none">• Set the OPERATION selector correctly. See page 6.

