

Integrated Stereo AV Amplifier

Operating Instructions

TA-AV631X

WARNING

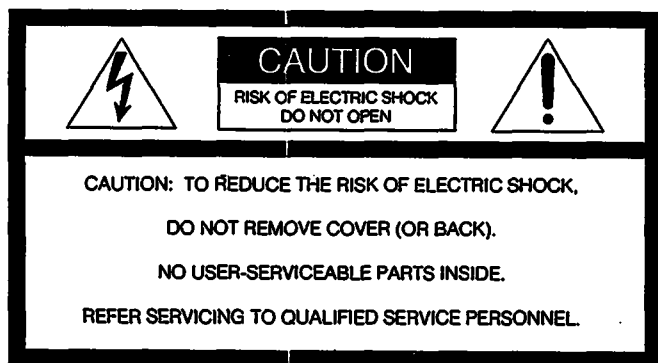
OWNER'S RECORD

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

Model No. TA-AV631X 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.

* The graphical symbols are on the rear enclosure.

Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION

You are cautioned that any change or modifications not expressly approved in this manual could void your authority to operate this equipment.

Table of Contents

Introduction	
Precautions	3
Getting Started	
Unpacking	3
Choosing a good location	3
Remote commander	4
Hooking up the system	6
Connecting audio equipment	6
Connecting speakers	7
Using Your Stereo	
Getting ready to enjoy surround sound	8
Positioning the speakers	8
Placement of speakers and selecting the PRO LOGIC MODE	8
Adjusting the speaker volume	9
Adjusting the delay time of the rear speakers	10
Adjusting the audio controls	10
Adjusting volume	10
Adjusting the left and right sound balance	10
Adjusting the sound quality	10
Reinforcing the bass sound	10
Selecting the speaker system	10
Listening to a program source	11
Listening with the surround effect	11
Recording	12
Storing other manufacturer's operating codes onto the supplied remote commander	13
Programming signals of other audio/video equipment ...	13
Programming a new signal onto a previously programmed button	14
Controlling equipment	14
General	
Specifications	15
Troubleshooting	Back cover

Precautions

On safety

- Operate the unit only on 120 V AC, 60 Hz.
- Should any solid object or liquid fall into the unit, unplug it and have it checked by qualified personnel before operating it any further.
- 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 cord itself.

On operation

Before making program source connections, be sure to turn the power switch off and unplug the unit.

On cleaning the cabinet

Clean the cabinet, panel and controls with a soft cloth lightly moistened with mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzene.

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

If you have any question or problem concerning your unit, please consult your nearest Sony dealer.

Unpacking

Choosing a Good Location

To prevent internal heat buildup in the unit,
place the unit in a location with adequate air circulation.

Do not install the unit:

- near heat sources such as radiators or air ducts.
- in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

Do not place anything on top of the cabinet.

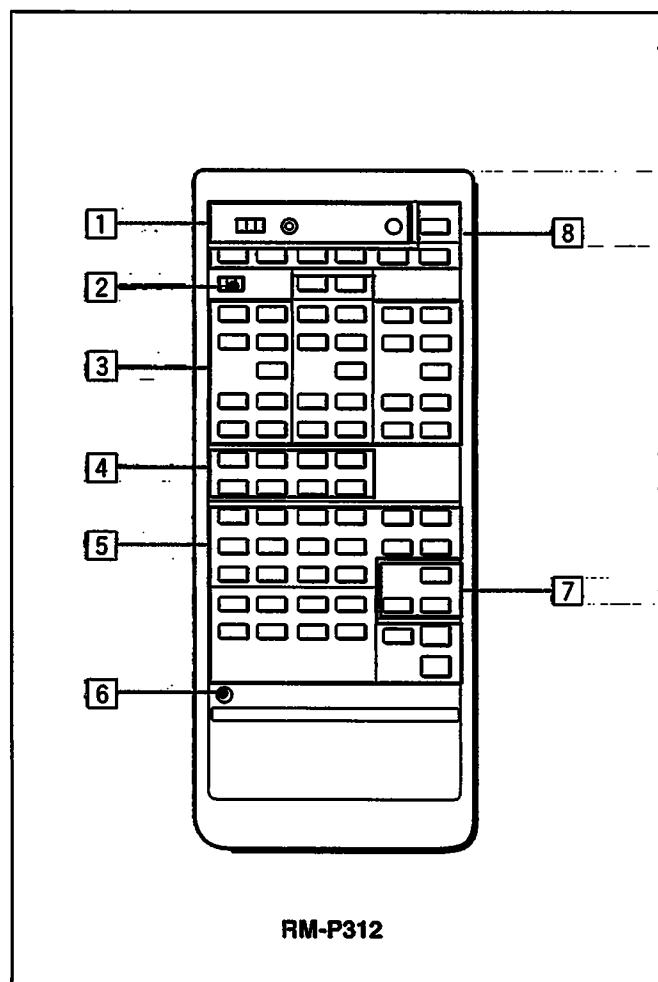
The top ventilation holes must be unobstructed for the proper operation of the unit and to prolong the life of its components.

Do not throw away the carton and packing material!

It will be an ideal container when transporting the unit for repair work, etc.

Remote Commander

The remote commander supplied with this unit can control the unit from a distance. The remote commander is divided into several sections according to the functions as shown below.



RM-P312

The RM-P312 can "learn" various functions of other remote commanders which use infrared rays. When the mode selector is set to SONY STD (Sony standard), buttons on the RM-P312 can be used to perform the functions below:

1 Program control section

Mode selector and indicator

SONY STD: To control Sony equipment.

USER STD: To control equipment whose remote control functions are stored.

LEARN: To store functions of other remote commanders emitting infrared rays.

PROGRAM CLEAR button: Clears the stored functions.

2 MODE selector

Selects the function mode on the remote commander.

1: To select the functions indicated in light gray such as DECK, DAT, CD player and surround mode of amplifier.

2: To select the functions indicated in blue such as VCR, LDP (Laser disc player) and TV.

3 Tape deck/DAT/VCR control section

ANT (antenna) TV/VTR buttons: Selects the output signal from the antenna terminal on the VCR, either a TV signal or VCR programs.

VTR CH (channel) +/- buttons: Select channel on the VCR.

◀◀/▶▶: Fast winding or forwarding

●: Recording

▶/◀: Play

■: Stop

⏸: Pause

REC MODE REV/FWD buttons:

For reverse recording, press REV and ● together.

For forward recording, press FWD and ● together.

4 CD/LD player control section

The combined CD/LD player can be controlled with LDP position.

D.(disc) SKIP: Disc skip (for a CD player equipped with a multi-disc changer)

▶: Play

⏸: Pause

■: Stop

◀◀/▶▶: Manual search

⏮/⏭: Locates a desired selection.

5 Amplifier/TV section

TV/VIDEO button: Selects the input signal of the TV. (for TV)

Program number (1 to 0) and ENTER buttons: Select the channel. (for TV)

SURROUND mode selectors (for the AV control amplifier)

ON/OFF: Turns on/off the surround mode.

MODE: Selects the surround mode.

T.(test) TONE: Outputs test tone to each speakers in succession.

DELAY: Adjusts the delay time.

FUNCTION selectors: Select an input source of the AV control amplifier. (for the AV control amplifier)

CENTER VOL /TV VOL +/- buttons: Control the volume of center speaker or TV. (The CENTER VOL +/- buttons function for the AV control amplifier.)

REAR VOL /TV CH +/- buttons: Control the volume of rear speakers or channel of TV. (The REAR VOL +/- buttons function for the AV control amplifier.)

DBFB button: Turns on/off the DBFB (Dynamic Bass Feed Back). (for the AV control amplifier)

MASTER VOL +/- buttons: Control the amplifier's master volume. (for the AV control amplifier)

6 Reset button

Reset the commander to the initial state.

7 Tuner control section

SHIFT button: Selects a memory page.

PRESET +/- buttons: Select a preset station.

8 Power control section

SYSTEM OFF button: Turns off the power of the whole system: LDP, VCR, TV, and AUDIO.

LDP/MTR1/MTR2/MTR3/TV/AUDIO POWER buttons:
Control the power of each unit.

Note on the ● (recording) button under 3 Tape deck/ DAT/VCR control section

If your recorder is of such type as pressing ● puts it in recording pause mode, first press ● on this commander and then II.

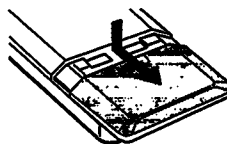
Note

The ◀▶ (play) buttons in 3 and 4 and the SHIFT button and PRESET +/- buttons in 7 can function without pressing one of the FUNCTION buttons in 5 in the following cases:

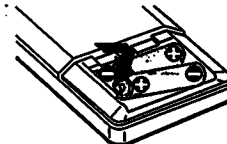
- When the video deck is connected to the VIDEO jacks (switch the MODE on the remote commander to VTR 1).

Inserting the batteries into the remote commander

1 Open the cover.



2 Insert two size-AA (R6) batteries with correct polarity.



Battery life

About half a year of normal operation can be expected when using the Sony SUM-3 (NS) batteries.

When the batteries are exhausted, the commander can no longer operate the unit. Replace both batteries with new ones.

To avoid battery leakage

When the commander is not to be used for a long period of time, remove the batteries to avoid damage caused by battery leakage and corrosion.

To avoid malfunction of the remote commander

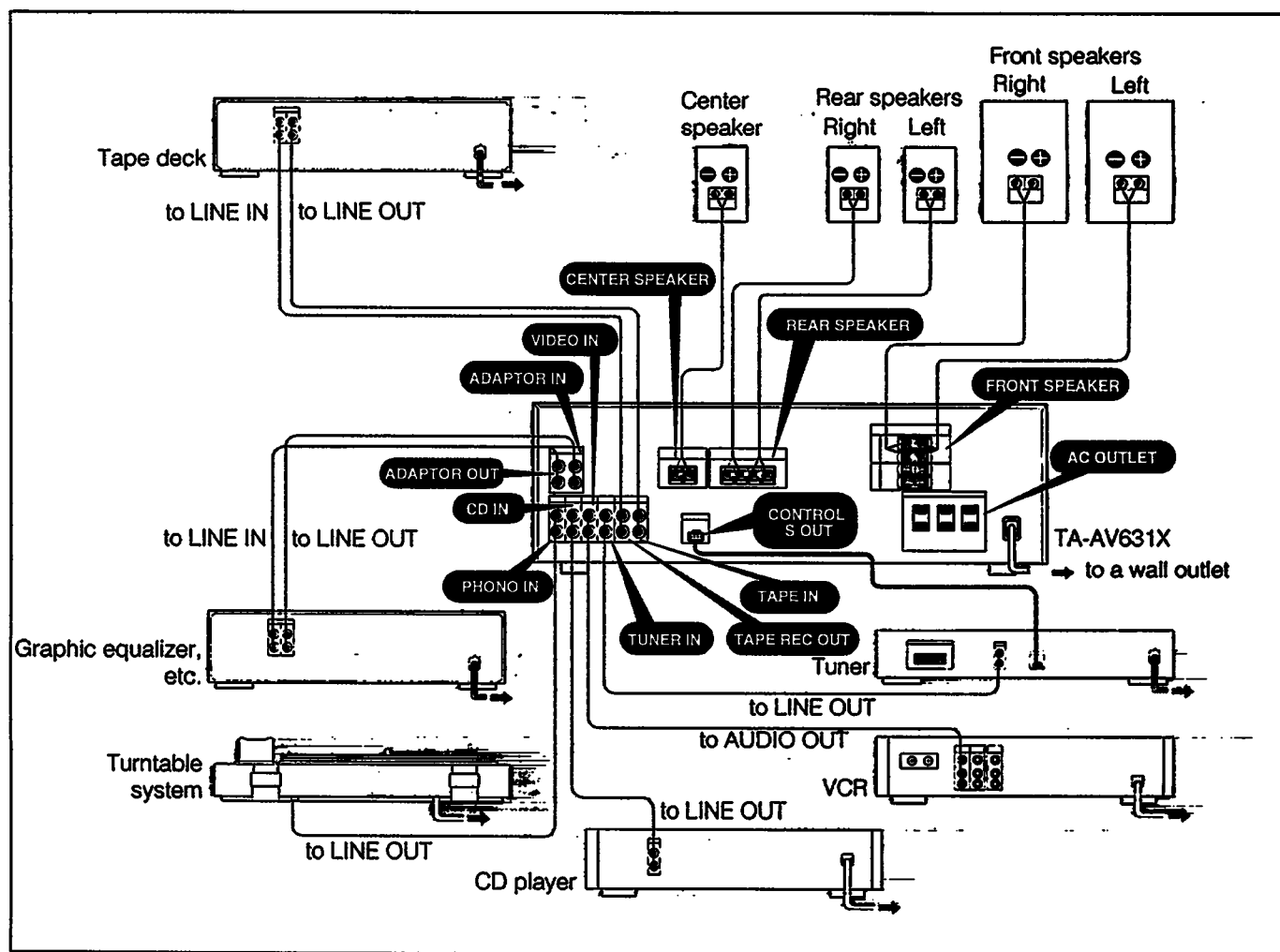
Avoid keeping the remote commander under extremely hot or humid locations.

Hooking Up the System

At first, this section describes about the connections with the other audio/video equipments and speakers. After that, it also shows about the remote control system and AC outlet.

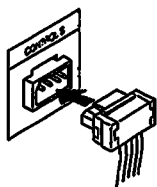
- Connect the AC power cord last. Make sure power is off.
- Jacks and plugs of the connection cord are color-coded as follows:
Red jacks and plugs: For the right channel of audio signals
White jacks and plugs: For the left channel of audio signals
- The cable connectors should be fully inserted into the jacks. Loose connections may cause hum and noise.

Connecting Audio Equipment

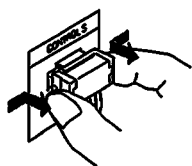


CONTROL S cord (not supplied)

Connect the CONTROL S IN jack of other Sony equipment with the CONTROL S cord for whole audio system remote control.



Push in until it clicks.



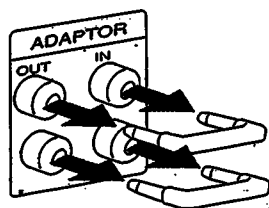
To disconnect.

AC OUTLETs (SWITCHED)

Use these to power audio component whose power consumption is less than the wattage indicated on the AC outlets. These outlets are controlled by the SYSTEM POWER switch on the front panel.

CAUTION

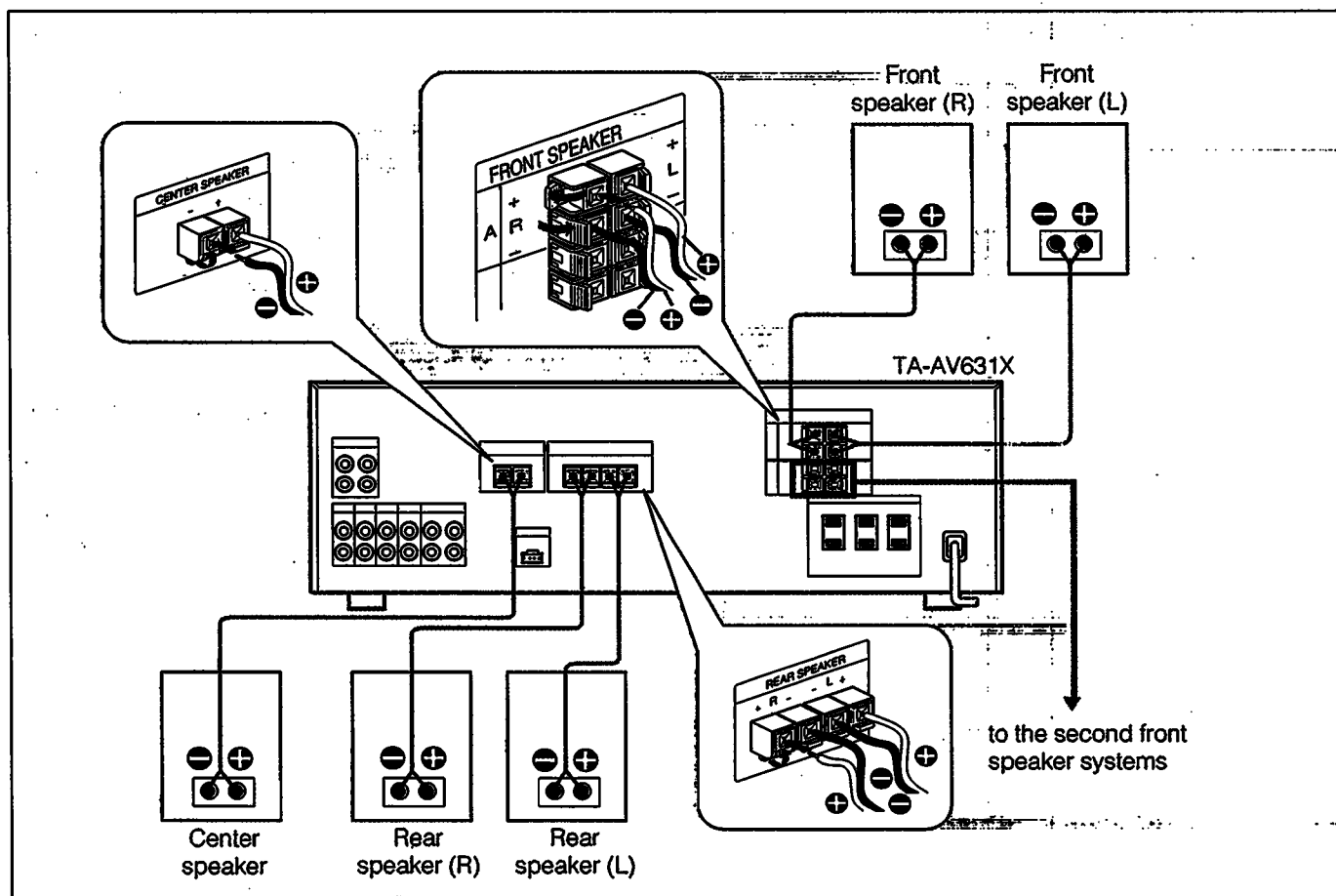
Do not connect any electrical home appliances such as an electric iron, fan, TV or other high wattage equipment to these AC outlets.



Note on the ADAPTOR jacks

Before connecting the unit, remove the shorting plugs. When not using the ADAPTOR jacks, be sure to install the shorting plugs. Otherwise, no sound is heard from the speakers.

Connecting Speakers



Front speakers

Connect the front speaker systems to the FRONT SPEAKER A or/and B terminals. They can be selected individually or simultaneously with the SPEAKERS selector.

Rear speakers

Connect the rear speaker systems to the REAR SPEAKER terminal for enjoying surround sound.

Center speaker

You can connect a center speaker to the CENTER SPEAKER terminal for enjoying surround sound. The sound such as a dialog comes from the center.

Note on speaker impedance and power capacity

This amplifier is designed to work best with speakers of nominal impedance from 8 to 16 ohms (Center speaker: from 4 to 16 ohms). Be sure to use a speaker system with adequate power handling capability.

Note

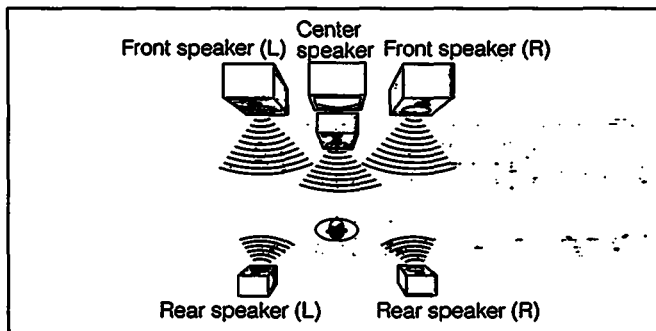
When connecting the speaker cord to the speaker terminal, make sure that the polarity (+ and -) of the speaker cord is correct. If the polarity is reversed at either speaker, the sound will be distorted and will lack bass.

Getting Ready to Enjoy Surround Sound

This section describes about selecting the speaker configuration for the surround system and then adjusting the speaker volume and the delay time of the rear speakers so that you can enjoy the Dolby surround sound.

Positioning the Speakers

Where you place the speakers depends on the size and acoustics of the listening room. The figure below are just examples. We recommend that you experiment to find the speaker direction or location in which the most effective acoustics can be obtained.



Placement of Speakers and Selecting the PRO LOGIC MODE

The Dolby® Pro Logic Surround Decoder has the same functions for playback, such as movie theaters and gives a theater-like experience in your listening room, naturally reproducing the audio sound field.

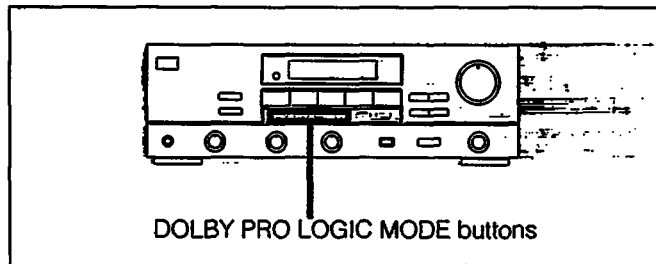
The TA-AV631X incorporates a decoder which reproduces the specially encoded surround sound of Dolby surround video programs.


In the SURROUND mode, a speaker operation mode can be selected to match your speaker system.

A center speaker is required in addition to the basic four speakers.

The setting on which the vocal image will be located on the center of the TV screen is better affect to surround effect.

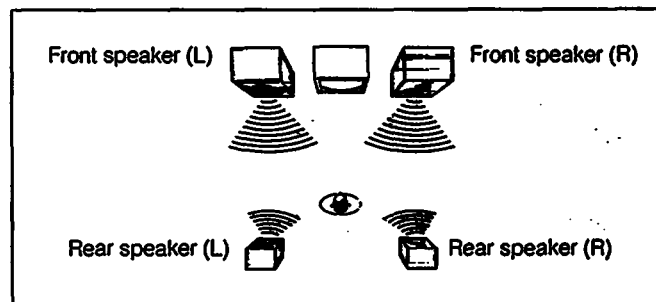
In the SURROUND mode, select the speaker operation mode according to your speaker configuration by pressing the PHANTOM, NORMAL, WIDE or 3 CH button.



* Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licensed under one or more of the following patents: U.S. number 3,959,590. Canadian numbers 1,004,603 and 1,037,877. "DOLBY", "Pro Logic" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

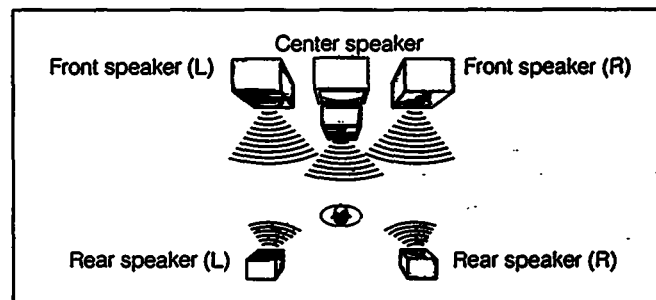
PHANTOM mode

Select this mode when you do not use center speaker. The sound of the center channel can be heard from the front speakers.



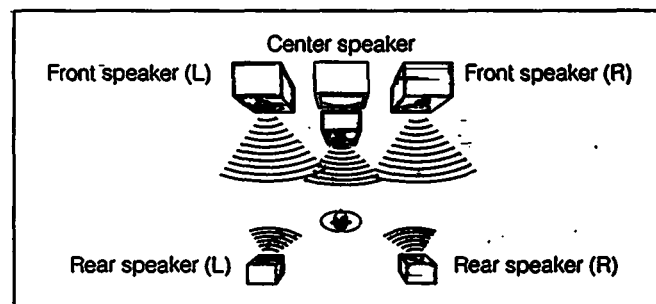
NORMAL mode

Select this mode if you use small center speaker. The bass sound of the center channel is output from the front speakers, as small speaker cannot produce enough bass.



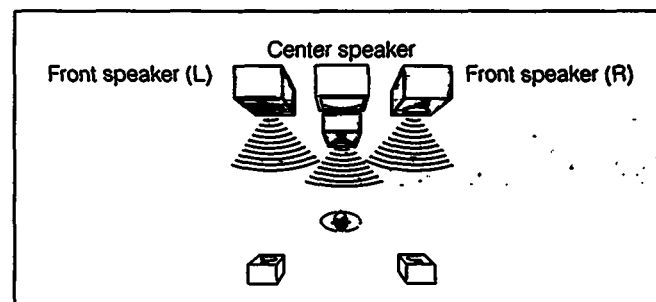
WIDE mode

Select this mode if you use a medium to big center speaker.



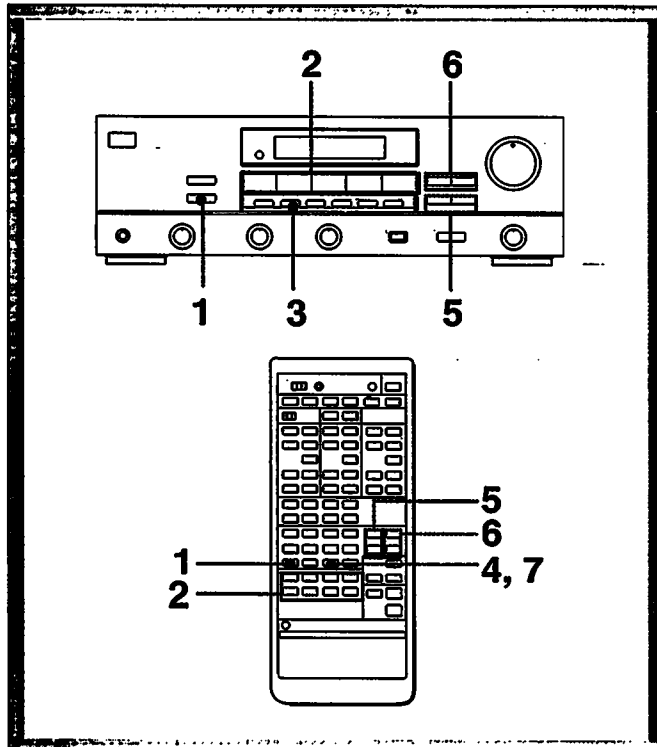
3CH mode

Select this mode when you do not use rear speakers.



Adjusting the Speaker Volume

To adjust the surround sound to the maximum on playing any program sources, adjust the front, rear and center (if connected) speakers to the same volume level. The adjustment must be done with a test tone in the DOLBY PRO LOGIC MODE, but the level once adjusted can be used for all DOLBY PRO LOGIC MODEs. You can adjust the volume level from your listening position by using the remote commander.



- 1** Press the **SURROUND** button on the front panel or **SURROUND ON/OFF** button on the remote commander to set to the **SURROUND ON** mode.
- 2** Select a program source with the function selector and start playback.
- 3** Select the **NORMAL** mode with the **NORMAL** button on the front panel.
- 4** Press the **T. TONE** button on the remote commander.

- 5** Adjust the level of rear speakers with the **REAR LEVEL + or -** button on the front panel or the **REAR VOL + or -** button on the remote commander.

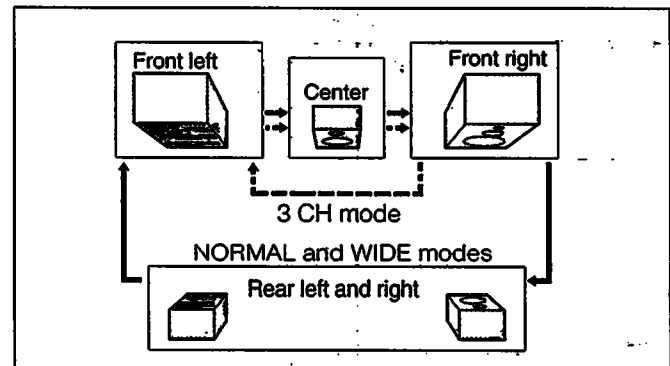
- 6** Adjust the level of center speaker with the **CENTER LEVEL + or -** button on the front panel or the **CENTER VOL + or -** button on the remote commander.

- 7** Press the **T.TONE** button on the remote commander to set to off.

Sequence of the test tone

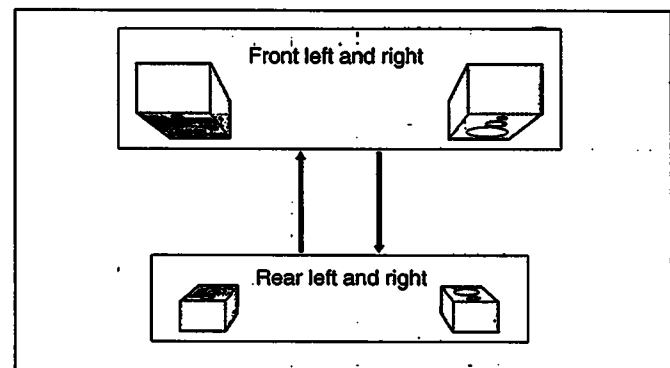
In a system with a center speaker:

The test tone will be output automatically from the front left, center, front right, and the rear speakers in succession.



In a system without a center speaker:

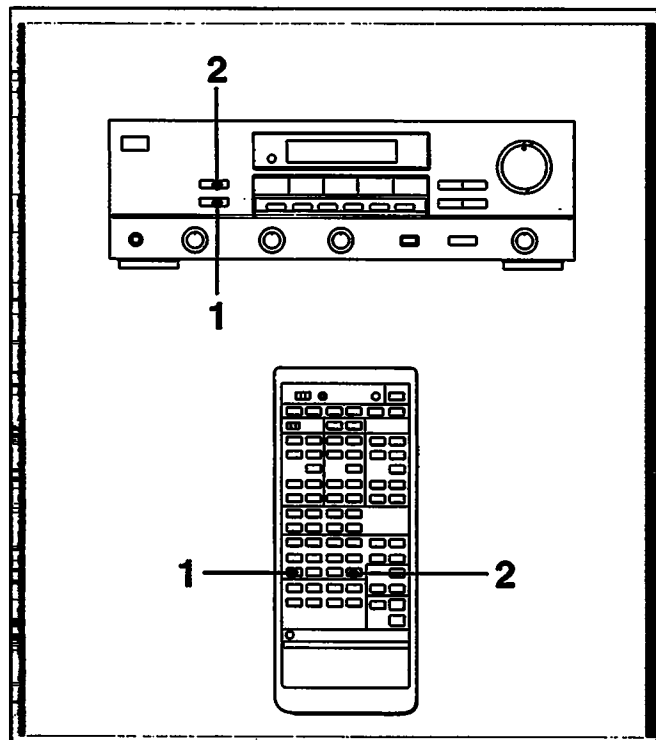
The test tone will be output automatically from the front speakers and rear speakers alternately.



Getting Ready to Enjoy Surround Sound

Adjusting the Delay Time of the Rear Speakers

The delay time is a time between the surround sound from the front and that from rear speakers. Select the delay time 15.0 ms, 20.0 ms or 30.0 ms.



1 Press the **SURROUND** button on the front panel or the **SURROUND ON/OFF** button on the remote commander to set to the **SURROUND** mode.

2 Select the delay time with the **DELAY TIME** button on the front panel or the **DELAY** button on the remote commander.

To turn off the surround effect

Press the **SURROUND** button on the front panel or the **SURROUND ON/OFF** button on the remote commander again.

The normal sound without surround effect will resume.

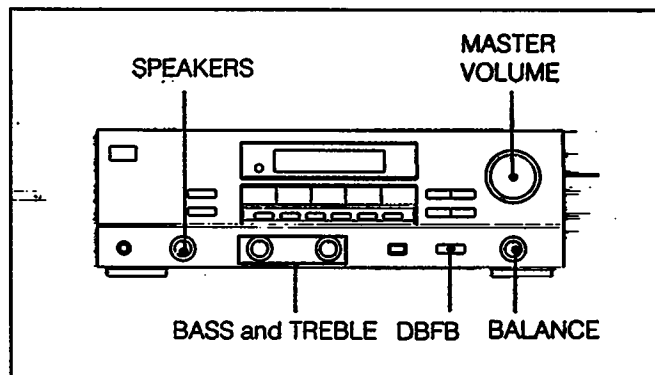
Both level and delay time of the surround is memorized each time after adjusting. They will be restored when the surround mode is resumed.

Note

The delay time for the rear speakers can be adjusted even in the 3 CH mode.

Adjusting the Audio Controls

You can enjoy superb sounds using the audio adjustment functions as shown below.



Adjusting Volume

To increase the sound level, turn the **MASTER VOLUME** control clockwise. To decrease it, turn the control counterclockwise.

Adjusting the Left and Right Sound Balance

To change relative strength of the right and left speaker outputs, adjust the **BALANCE** control.

Adjusting the Sound Quality

To enhance **TREBLE** or **BASS** sound from the front speakers, turn the **TREBLE** or **BASS** control clockwise. To attenuate them, turn the **TREBLE** or **BASS** control counterclockwise.

Reinforcing the Bass Sound

To make bass sound powerful, press the **DBFB** (Dynamic Bass Feed Back) button. The lower the volumes, the more the bass sound is emphasized.

Selecting the Speaker System

To drive speaker system A: Set the **SPEAKERS** selector to **A**.

To drive speaker system B: Set the **SPEAKERS** selector to **B**.

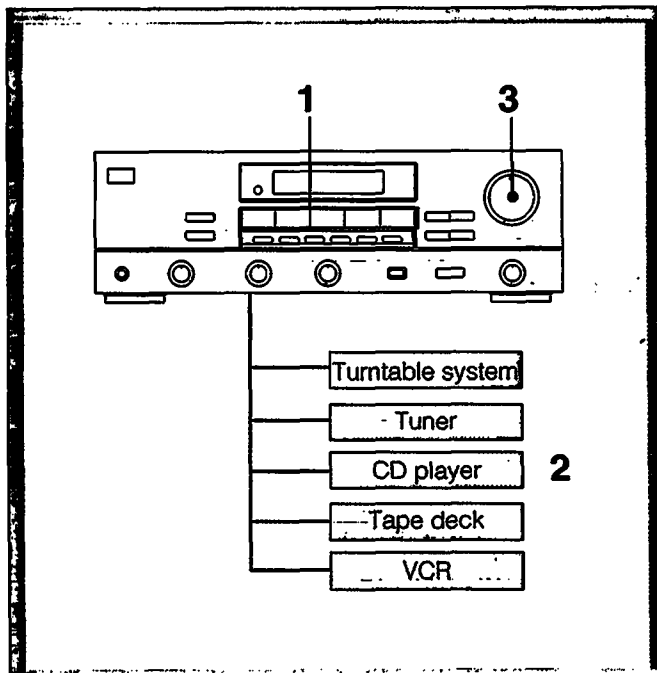
To drive both speaker systems A and B (series connection): Set the **SPEAKERS** selector to **A + B**.

For headphone listening: Connect headphones to the **HEADPHONES** jack and set the **SPEAKERS** selector to **OFF**. To turn off the rear and center speakers, set the **SURROUND** button to off.

IMPORTANT

Speaker systems A and B are series connected. When only one speaker system is connected, no sound can be heard at the A + B position.

Listening to a Program Source



1 Select the program source to be played back.

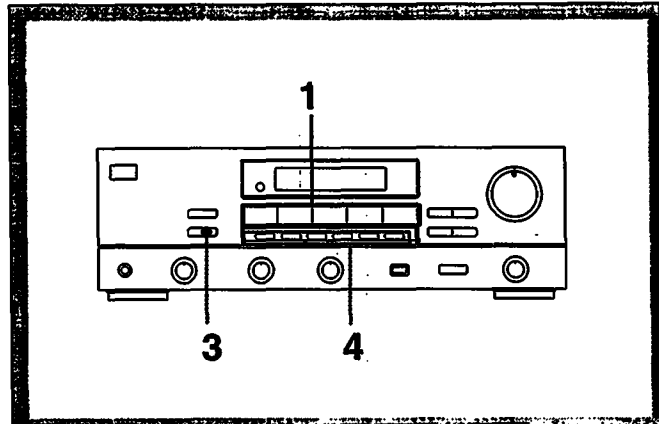


2 Start playback of the selected program.

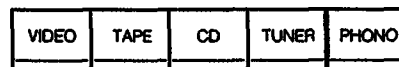
3 Adjust the volume.



Listening with the Surround Effect

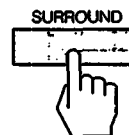


1 Select the program source.

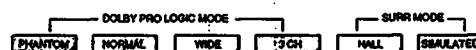


2 Start playback of the selected program.

3 Press the SURROUND button to set to on.



4 Select the surround mode with the DOLBY PRO LOGIC MODE buttons or the SURR MODE* buttons.



* You can select the surround modes with the SURR MODE buttons.

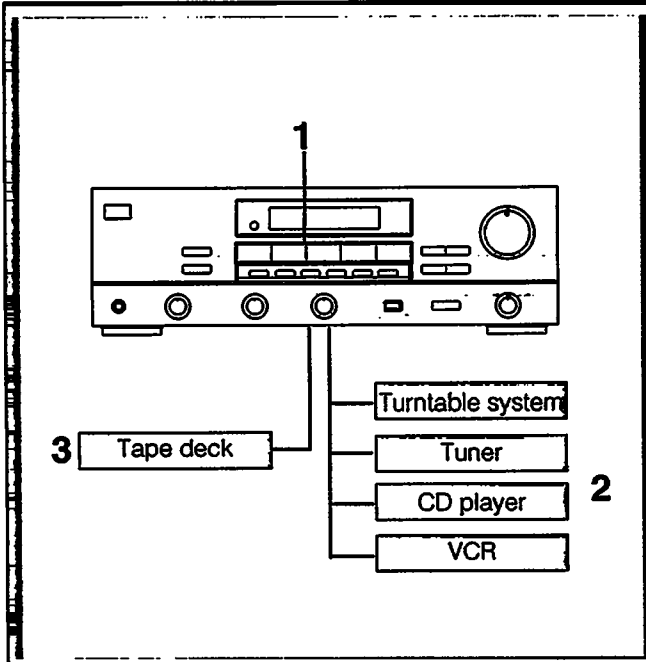
HALL (Hall surround): Provides reverberation effect that is produced in a concert hall.

SIMULATED (Simulated surround): Gives a simulated stereo effect to monaural sound.

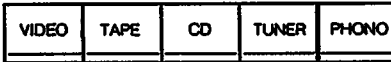
Note

No sound will be heard from the rear and center speakers, unless one of the SURROUND PRO LOGIC MODE or SURR MODE is selected.

Recording



- 1** Select the program source to be recorded other than TAPE.



- 2** Start playback of the selected program.

- 3** Set the tape deck in the recording mode.

Note

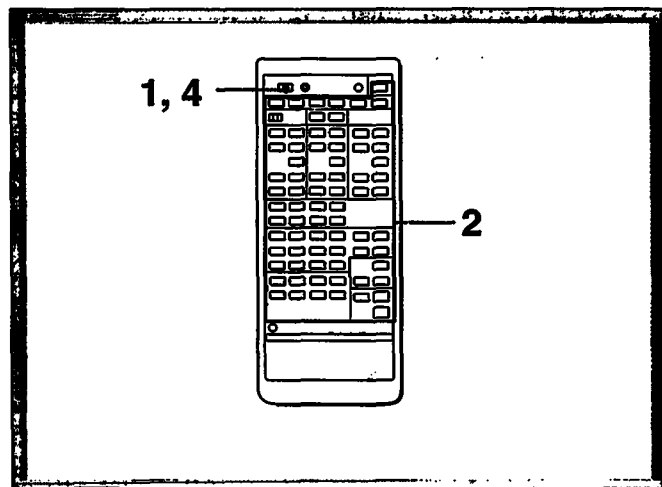
The MASTER VOLUME, TONE, BALANCE, SURROUND controls and the DBFB button have no effect on recording.

Storing Other Manufacturer's Operating Codes onto the Supplied Remote Commander

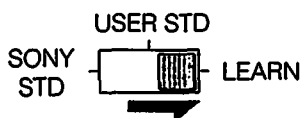
When you manipulate a switch or button on the commander, be sure to point the head of the commander toward the remote control sensor on the front of the AV amplifier. If there is an obstacle between the AV amplifier and the head of the commander, the AV amplifier may not be controlled remotely.

Programming Signals of Other Audio/Video Equipment

The RM-P312 learns various functions of other remote commanders emitting infrared rays and allows you to control most of audio and video equipment from a distance.

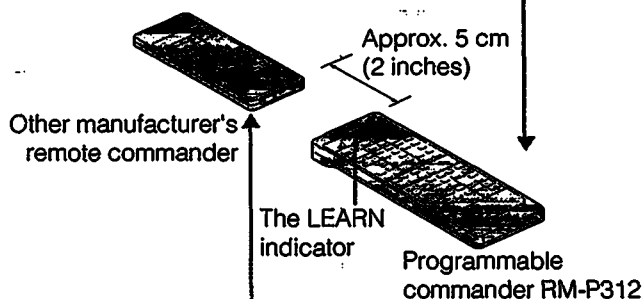
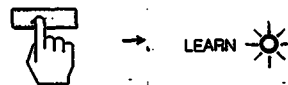


1 Set the mode selector to LEARN.



2 Program a signal.

① Press and hold the button which shall "learn" the remote-control signal until the LEARN indicator lights up.



② Press and hold the button of other manufacturer's remote commander whose signal is to be learned.



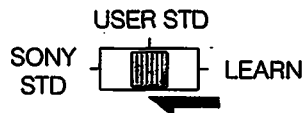
③ Remove your finger(s) from the button(s) after the LEARN indicator goes off.



All buttons of enclosed as number 2 on the left illustration can be programmable.

3 Repeat operation for each button to be programmed.

4 Set the mode selector to USER STD or SONY STD.



The two remote commanders must:

- face straight each other.
- be placed at a distance of approx. 5 cm (2 inches).
- not be moved during programming operation.

After programming

Be sure to test if the equipment really works with the programmed signals.

Number of signals that the commander can learn

It depends on the format of the signal. If you program signals of Sony equipment, approximately 50 - 60 signals can be programmed.

Storing Other Manufacturer's Operating Codes onto the Supplied Remote Commander

Memory capacity

If the LEARN indicator flashes or does not go out in step 2-②, ③, the memory capacity has become full. This occurs when other signals stronger than the remote-control signals have been stored because the signals were programmed in a noisy environment or the remote commanders were placed too far apart from each other.

In this case, clear all the signals following the procedure described below and program again from the beginning under the proper conditions.

Notes on programming

- Remote-control signals of equipment of manufacturers other than Sony can be programmed only when they are compatible with the infrared wireless remote control system. Since the programmable commander can "learn" only the signals output from another remote commander, it cannot control equipment that does not use a remote commander.
- Do not attempt to use the programmable commander with an air conditioner or other household appliances.
- Note that there are some special remote-control signals that cannot be programmed.

Programming a New Signal onto a Previously Programmed Button

Follow the programming procedure.

The previously programmed signal is cleared and replaced by the new signal.

To clear all programmed signals

- 1 Set the mode selector to LEARN.
- 2 Press and hold any button of the programmable area until the LEARN indicator lights up.
- 3 Press PROGRAM CLEAR until the LEARN indicator flashes and goes off.

Note

It is not possible to clear the programmed content of just one button.

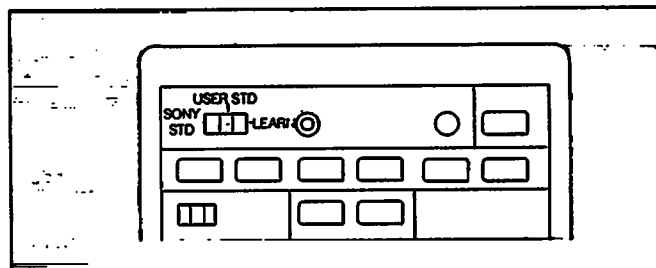
To program a signal onto the ● REC button in the TAPE or VTR section

It is not possible to operate any equipment with only the ● REC button. To program a signal under the ● REC button, press and hold the following buttons at the same time in step 2-①

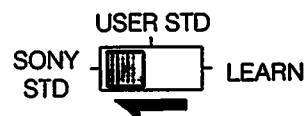
TAPE	DECK/VTR REC MODE REV ●	or	DECK/VTR REC MODE FWD ●
VTR	DECK/VTR REC MODE FWD ●		

Controlling Equipment

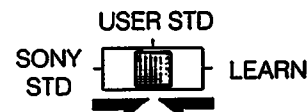
By switching the mode selector as shown below, a single button alternately controls Sony equipment and another manufacturer equipment.



To control Sony equipment



To control equipment with programmed signals



When Sony equipment cannot be remote-controlled

Program the signal in the same way as for equipment from other manufacturers. In this case, even with Sony equipment, set the mode selector to USER STD.

Notes on Battery

If the LEARN indicator does not light when a button is pressed, the batteries are almost exhausted.

When the batteries are exhausted, the remote commander can no longer operate the unit or programming becomes impossible.

If this happens, replace both batteries with new ones. We recommend the use of alkaline batteries for prolonged use. If you leave the batteries out for a long time when replacing, the program will disappear.

If no signal has been programmed

The programmable commander can control Sony equipment even when the mode selector is set to USER STD.

If the equipment works incorrectly

Press RESET.

The programmed contents of the buttons are not cleared by pressing RESET.

Specifications

AUDIO POWER SPECIFICATIONS POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 8-ohm loads, both channels driven,
from 40 - 20,000 Hz; rated 135 watts per
channel minimum RMS power, with less
than 0.9% total harmonic distortion from
250 milliwatts to rated output.

Amplifier section

Power bandwidth (IHF) 30 Hz - 30 kHz (8 ohms)
Dynamic headroom 1.7 dB ('78 IHF)
Harmonic distortion Less than 0.9% at rated output
(Surround OFF)
Frequency response PHONO: RIAA equalization curve
CD, VIDEO, TUNER, TAPE:
10 Hz - 50 kHz ± 3 dB
Rear output 15 W + 15 W (at front off 8 ohms)
Center output 30 W (at front off 4 ohms)
Damping factor 27 (8 ohms, 1 kHz)

Input

Input jack	Jack type	Sensitivity	Impedance	S/N (weighting network, input level)
PHONO	Phono	3.0 mV	50 kilohms	71 dB 75 dB* (A, 3.0 mV)
CD, VIDEO, TUNER, TAPE	Phono	250 mV	50 kilohms	92 dB 83 dB* (A, 250 mV)

**78 IHF

Output

TAPE (REC OUT)	Phono jacks	Voltage 150 mV Impedance 1 kilohm
SPEAKERS (Front, Rear)	—	Accepts speakers of 8 - 16 ohms
SPEAKERS (Center)	—	Accepts speakers of 4 - 16 ohms
HEADPHONES	Stereo phone jack	Accepts low and high impedance headphones.

Tone controls

BASS: ± 10 dB (100 Hz)
TREBLE: ± 8 dB (10 kHz)

General

Power requirements 120 V AC, 60 Hz
Power consumption 250 W
AC outlets 3 switched, 120 W/1 A max.
Dimensions Approx. 430 x 145 x 360 mm
(w/h/d)
(17 x 5 $\frac{3}{4}$ x 14 $\frac{1}{4}$ inches)
Mass Approx. 9.9 kg (21 lb 14 oz)
Accessories supplied Remote Commander
RM-P312 (1)
Sony batteries SUM-3(NS) (2)

Design and specifications are subject to change without notice.

Troubleshooting

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	Remedy
No audio.	<ul style="list-style-type: none">• Check the power cord connection.• Check the SPEAKERS selector setting.• Check the connections.• Check the setting of the function selector.• Check the speaker terminal connection and the speaker cord for a short.
No audio from one channel.	<ul style="list-style-type: none">• Adjust the BALANCE control.• Check the speaker cord or connecting cord connection.
Lack of bass sound or obscure instrument position.	<ul style="list-style-type: none">• Check the connection between the amplifier and speakers.
Noise when TV is turned on.	<ul style="list-style-type: none">• Move the TV away from the audio system.
Switching on DBFB does not affect the sound.	<ul style="list-style-type: none">• The DBFB button reinforces only low frequencies.
No sound or sound at very low level is heard from rear speakers.	<ul style="list-style-type: none">• Check if the SURROUND button is set to OFF. (No indicators are lit.) (See page 11.)• Check if the volume level of the rear speakers is set to minimum.• Check if the monaural program source is played back in Dolby surround mode.• Check if the 3CH mode is selected in the DOLBY PRO LOGIC MODE. (See page 8.)
The operation cannot be performed with the remote commander.	<ul style="list-style-type: none">• Check that the batteries are loaded correctly.• Check if there is any obstacle between the remote commander and the amplifier.• Check if the batteries are exhausted.
The commander signal cannot be programmed.	<ul style="list-style-type: none">• Check if there is noise interference. Place both remote commanders apart from the source of noise.• Check if the batteries are exhausted.
The LEARN indicator goes off after flashing.	<ul style="list-style-type: none">• Check that the internal memory capacity is full. Clear all the signals and program again. (See page 14.)