

# ***Integrated Stereo AV Amplifier***

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Operating Instructions

**TA-~~AV~~490**

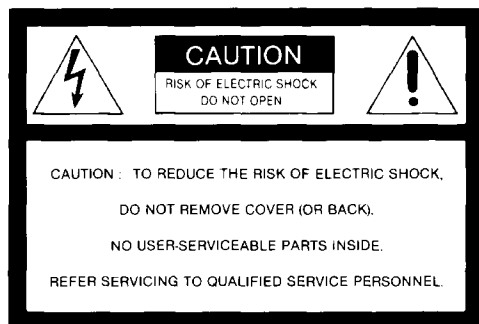
# Owner's Record

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

Model No. TA-AV490      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.

# Precautions

## On safety

- Operate the unit only on 120 V AC, 60 Hz.
- Should any solid object or liquid fall into the cabinet, unplug the unit 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 the plug. Never pull the cord itself.

## On installation

- Do not install the unit near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Good air circulation is essential to prevent internal heat build-up in the unit. Place the unit in a location with adequate air circulation. Do not place the unit on a soft surface.

## On repacking

Do not throw away the carton and packing materials. It is an ideal container in which to transport the unit. When shipping the unit to another location repack it.

## On cleaning

- Clean the cabinet periodically with a soft dry cloth. If the stains are difficult to remove, use a cloth moistened with a mild detergent solution. Do not use solvents such as alcohol, benzene or thinner, since they will damage the finish.

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

## For the customers in the U.S.A.

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

## 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


## Amplifier Features

- This amplifier incorporates the power amplifier for the front speakers (125 W + 125 W) and that for the surround speakers (20 W + 20 W) independently. These amplifiers make possible a powerful surrounding sound from 4 speakers.
- The versatile input system controls 4 A/V input systems and 4 audio input systems.
- To reinforce the bass, press the DBFB (Dynamic Bass Feed Back) switch on. The lower the sound level, the more the bass is emphasized.

### Note


If howling occurs while listening to a record, switch the DBFB off and turn down the volume until howling stops. Howling occurs when the vibration of the boosted bass is picked up by the stylus and reproduced once again.

## Surround Features

- This unit has Digital Delay Surround system.  
This unit incorporates all of three types of surround effect.
-  **DOLBY SURROUND** \* — expands sound just like listening to it in a movie theater.
- Hall Surround — provides reverberation effect that is produced in a large concert hall.
- Simulated Surround — gives the feeling of width and thickness to monaural sound of old movies, etc.

## Programmable Remote Commander

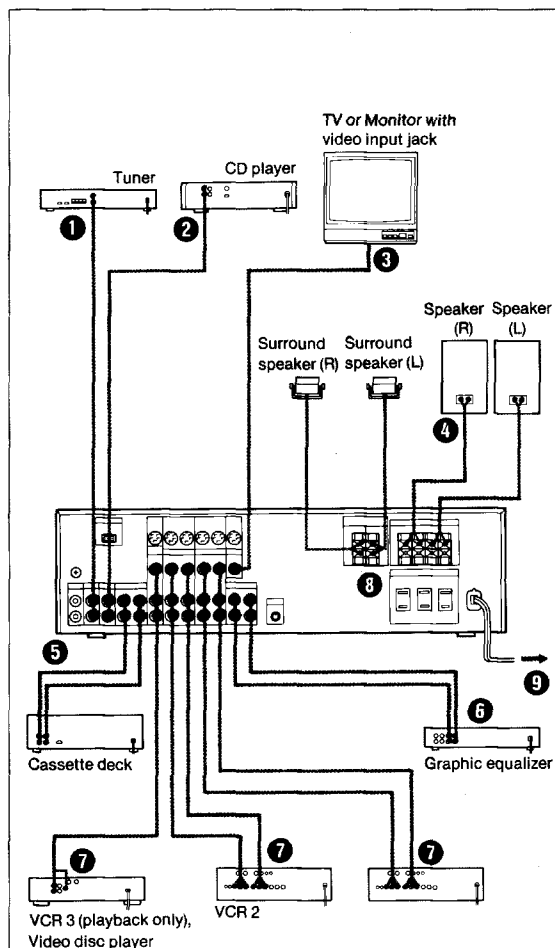
- The supplied programmable commander is capable of "learning" the remote control signals used with other remote commanders. The single commander can replace them for controlling various audio and video equipment of any manufacturers, thereby frees you from complicated manipulation of several remote commanders.

\* Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licensed under one or more of the following patents: U.S. numbers 3,632,886, 3,746,792, and 3,959,590; Canadian numbers 1,004,603 and 1,037,877.  
"DOLBY" and the double-D symbol  are trademarks of Dolby laboratories Licensing Corporation.

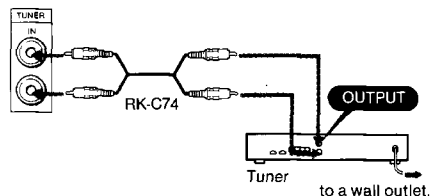
# Connections

## Overall connection diagram

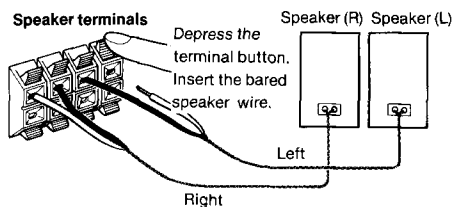
The numbers described in ● correspond to the individual connecting diagram.



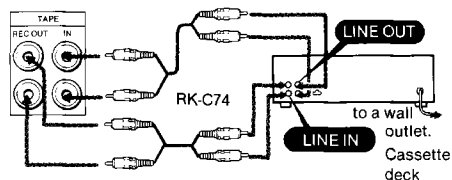
### 1 Connecting a tuner



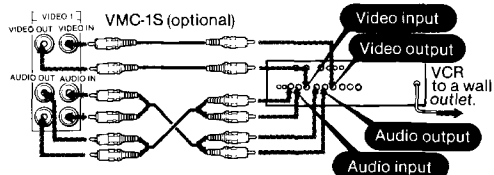
### 4 Connecting speakers



### 6 Connecting a cassette deck



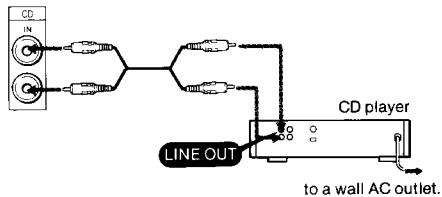
### 7 Connecting Video Equipment Connecting VCR (Common for video 1, 2).



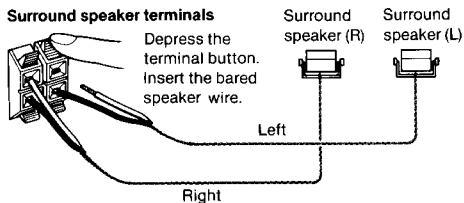
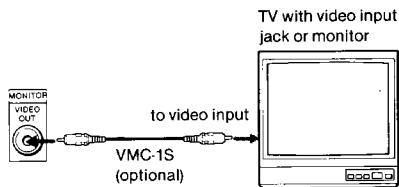
## Connection Notes

- The power cord should be connected last of all, first making sure that the SYSTEM POWER switch is turned off.
- Cord plugs and jacks are color coded. Red plugs and jacks for right-channel (R) and white ones for left-channel (L).
- The plugs and connectors should be fully inserted into the jacks. A loose connection may cause noise or disable remote control operations.

### 2 Connecting a CD player

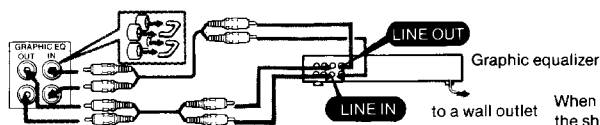


### 3 Connecting a TV with video input jack or monitor



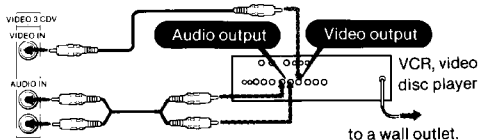
### 6 Connecting a graphic equalizer

Before connection, remove the shorting plugs from the jacks.

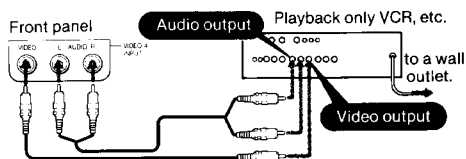


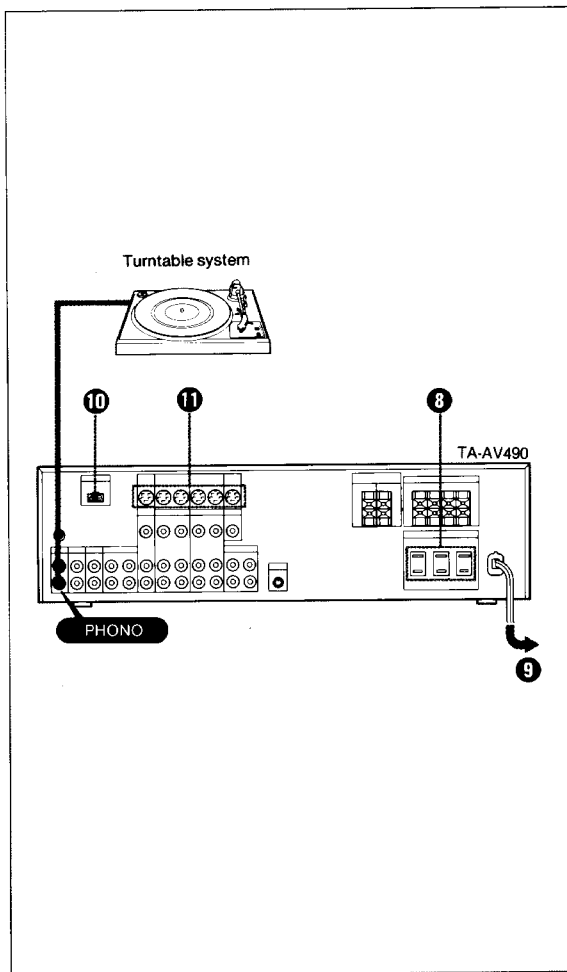
When the graphic equalizer is not connected, be sure to install the shorting plugs. Otherwise, no sound is heard from the speakers.

### Connecting playback only VCR, etc.



### Connecting playback only VCR temporarily.

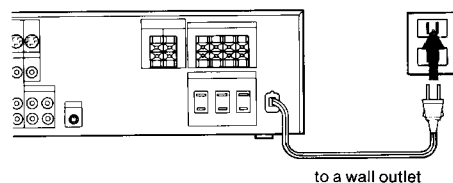




## 8 AC OUTLET

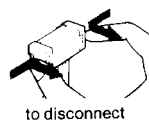
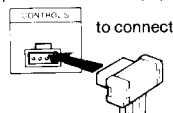
Connect the power cord of the other audio equipment (power consumption: less than 100 W). Never connect an electric refrigerator, TV set, etc.

## 9 Power cord

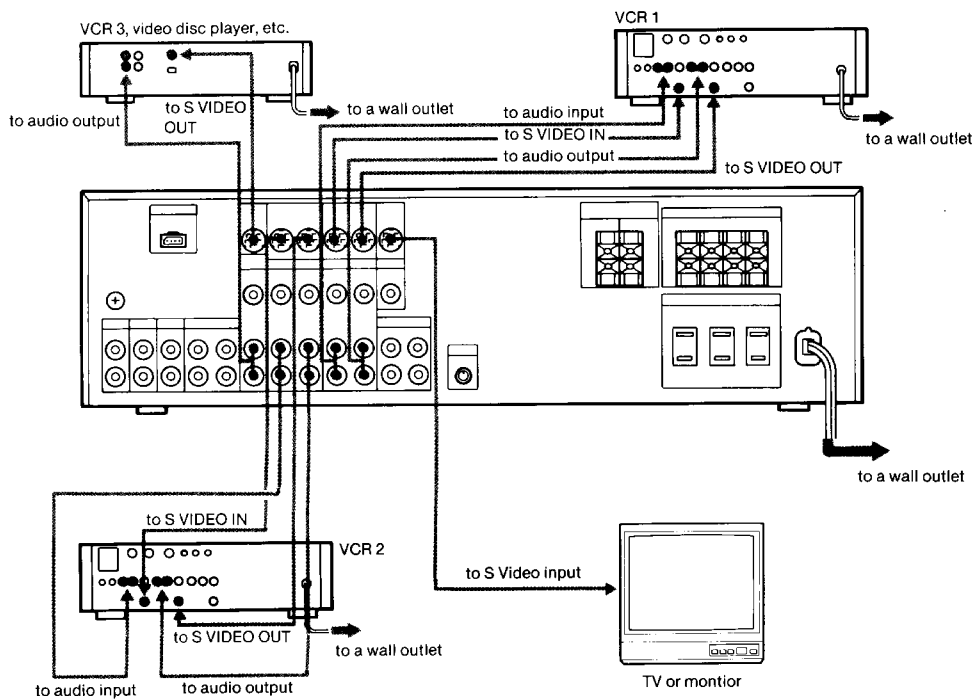


## 10 CONTROL S OUT connector (4-pin)

By connecting this connector to the CONTROL S IN connector of another Sony audio equipment (turntable, tuner, cassette deck, etc.), the connected equipment can remotely be controlled as a system. For details, please read the Operating Instructions supplied with each equipment.



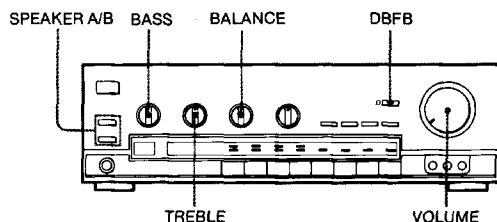
① Connecting to S video connector of another equipment



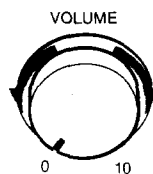
**Note**

The video signal from S VIDEO IN connector does not come out through VIDEO OUT connector.

# Adjusting Audio



## Adjusting Volume



This can also be controlled from the programmable commander. Be careful not to let large output sound come out suddenly, as this could damage the speakers. When the unit is not used, set the VOLUME to the "0" position.

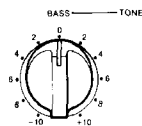
## Adjusting the tone

Normally, set the controls to the "0" positions.

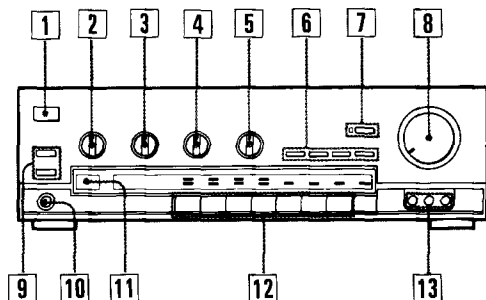
Use the TREBLE to adjust the high-frequency sound level and the BASS to adjust the low-frequency sound level.

To enhance: Turn the control clockwise (toward "+10").

To attenuate: Turn the control counterclockwise (toward "-10").



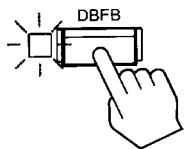
# Parts Identification



- 1 SYSTEM POWER switch
- 2 BASS control
- 3 TREBLE control
- 4 BALANCE control
- 5 SURROUND LEVEL control
- 6 SURROUND MODE switches
- 7 DBFB (Dynamic Bass Feed Back) switch and indicator
- 8 VOLUME control



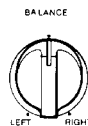
## Reinforcing the bass sound at low listening level



The DBFB (Dynamic Bass Feed Back) circuitry reinforces the bass sound at low listening level.

## Adjusting Balance

Normally, set the BALANCE to the center position. Adjust BALANCE to correct stereo imaging, when the speaker position is not symmetrical.

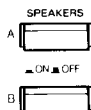


## Selecting the speaker system

To drive speaker system A: depress button A.  
To drive speaker system B: depress button B.  
To drive both systems: depress buttons A and B.

### Note

When both A and B buttons are depressed, two pairs of speaker systems should be connected. Otherwise, no sound can be heard.



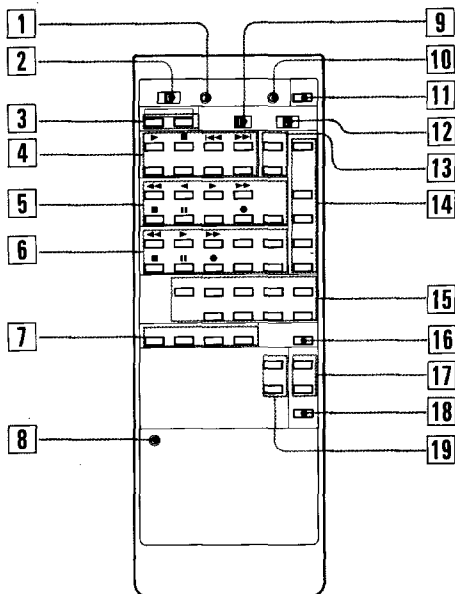
### For headphone listening

Keep both SPEAKERS buttons released. When headphones are connected, the sound from the surround speakers are turned off. The sound of surround speakers are not heard from the headphones.

- 9 SPEAKERS A, B selectors
- 10 HEADPHONES jack (stereo phone jack)
- 11 Remote control sensor
- 12 FUNCTION selectors and indicators
- 13 VIDEO 4 INPUT jacks (phono jacks)

## Parts Identification of the remote commander

The Programmable Remote Commander is capable of "learning" the functions of other remote commanders.



RM-P202 has the following functions.

- 1 **LEARN indicator**
- 2 **Mode selector**
  - SONY STD: To control equipment manufactured by SONY.
  - USER STD: To control equipment whose signals you have programmed.
  - LEARN: To program the signals of other infrared remote commanders in the programmable area.
- 3 **TV and VTR POWER button**
  - TV: Turns on/off the TV.
  - VTR: Turns on/off the VCR.
- 4 **CD player control buttons**
  - ▶: Starts play.
  - : Stops play.
  - ◀▶/▶▶: AMS (Automatic Music Sensor)
  - PGM: Program play
  - SHUFFLE: Shuffle play
  - CONTINUE: Continuous play
  - DISC SKIP: Disc skip (for a CD player equipped with 5 disc trays)
- 5 **TAPE (cassette deck) control buttons**
  - ◀◀: Reverse fast winding
  - ◀: Reverse play
  - ▶: Forward play
  - ▶▶: Forward fast winding
  - : Stop
  - ||: Pause
  - REC. ●: Recording (While you press REC. ●, press REV for reverse recording and FWD for forward recording.)
- 6 **VTR control buttons**
  - ◀◀: Rewind
  - ▶: Play
  - ▶▶: Fast forward
  - : Stop
  - ||: Pause

### Note on remote commander

Avoid subjecting the remote sensor to direct sunlight or strong illumination. Otherwise, the remote-control operation could be impossible.

● REC: Recording buttons (Press both buttons for recording.)

ANT TV/VTR: Selects the output signal from the antenna terminal from the VCR, either TV or VCR.

CH +/-: Channel select buttons

**7 SURROUND mode buttons**

OFF: Turns off the surround mode.

DOLBY: Selects Dolby surround.

HALL: Selects hall surround.

SIMULATED: Selects simulated surround.

**8 RESET button**

Press this button and start again if the equipment works incorrectly.

**9 DECK A/B selector**

Selects deck A or B.

**10 PROGRAM CLEAR button**

**11 POWER button**

Turns on/off Amplifier

**12 VTR selector**

1: Betamax VCR

2: 8 mm VCR

3: VHS VCR

**13 PHONO (turntable) control buttons**

START: Starts record play.

STOP: Stops record play.

**14 TV control buttons**

TV/VIDEO: Selects the input signal to the TV set, either a TV signal or VCR programs.

VOL (volume) +/- buttons

CH (channel) +/- buttons

**15 FUNCTION selectors**

(Note: DAT button does not function for the TA-AV490.)

**16 DBFB (Dynamic Bass Feed Back) button**

**17 VOL (volume) +/- buttons**

**18 MUTING button**

(Note: This button does not function for the TA-AV490.)

**19 TUNER PRESET buttons**

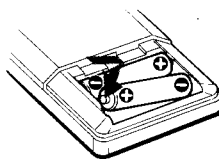
PRESET +/-: Selects higher/lower preset channel number.

## Installing Batteries

1



2 Two size "AA" (R6) batteries.



## Notes on batteries

### Battery life

Normal operation can be expected about a half year using Sony SUM-3 (NS) and a year using Sony AM-3 (NW) alkaline batteries.

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.

### To avoid battery leakage

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

# Watching/Listening to the Video/Audio of

Diagram showing the device and remote control. On the device, 1 points to the power button, 2 points to the function buttons, and 4 points to the volume knob. On the remote, 1 points to the power button, 2 points to the function buttons, and 4 points to the volume buttons.

**1**

Select the function.

POWER

Programmable commander

**2**

Select the function.

FUNCTION	TAPE	DAT	CD	TUNER	PHONO
VIDEO 1					
VIDEO 2					
VIDEO 3					
VIDEO 4					

Programmable commander

# To Recording Audio or Audio/Video onto

Diagram showing the device and remote control. On the device, 1 points to the power button. On the remote, 1 points to the power button and 2 points to the function buttons.

**1**

Select the function.

SYSTEM POWER → ON

POWER → ON

Programmable commander

**2**

Set the tape deck or video deck in the record mode. For the operating procedure, refer to the operating instructions supplied with the tape deck or VCR.

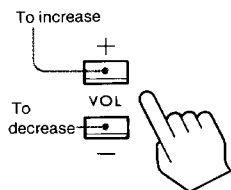
FUNCTION	TAPE	DAT	CD	TUNER	PHONO
VIDEO 1					
VIDEO 2					
VIDEO 3					
VIDEO 4					

# the Desired Source

3

Play the program source.

4



Programmable commander

## NOTE

DAT button on the remote commander does not function for the TA-AV490 and pressing it does not select the TAPE/DAT function on the amplifier.

Press TAPE on the remote commander to select TAPE/DAT on the amplifier.

# the Tape Deck or VCR

3

Start the program source.

# Video/Audio Editing

This unit is capable of various video/audio editing which allows to put your idea into practical use by combining desired video with a background music from a different audio source, etc.

1 2

1 2

**1**

Select the video source.

Programmable commander

**2**

Select the audio source.

Programmable commander

When the audio source is not selected, the video source is automatically selected.

# Enjoying Surround Sound

**These operation are also possible on the main body.**

1 2

1 2

**1**

Select the surround mode.

**2**

To attenuate To enhance

3

Play both of the selected equipment.

4

Start recording on a video deck.

#### Selecting functions

For a CD program, press CD.

For a tape program, press TAPE.

For a record program, press PHONO.

For a tuner program, press TUNER.

#### To record onto two tapes at a time—Simultaneous recording—

Play equipment connected to VIDEO 3/CDV or VIDEO 4 input jacks and set the VCRs connected to the VIDEO 1 and VIDEO 2 output jacks in recording mode.

#### To record audio of any program source onto a cassette tape

The audio signal of the audio/video equipment selected by the FUNCTION is always output from the TAPE output jacks. The audio signal can be recorded by putting the cassette deck connected to the TAPE output jacks in the recording mode.

#### To dub audio/video from VCR 1 to VCR 2

When the video deck connected to the VIDEO 1 jacks is played back, the audio and video signals are output from the VIDEO 2 output jacks. The signals can be recorded by putting the video deck connected to the VIDEO 2 output jacks in the recording mode.  
(In the same way, dubbing from video deck 2 to video 1 is possible.)

#### Selecting surround modes

##### Dolby Surround:

Expands sound just like listening it in a movie theater.

##### Hall Surround:

Provides reverberation effect that is produced in a concert hall.

##### Simulated Surround:

Gives a simulated stereo effect to monaural sound.

#### To disable surround effect:

OFF



The normal sound without surround effect will resume.

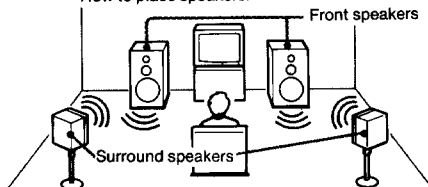
This operation is also possible on the main body.

#### Use of optional surround speakers

Even without connecting the surround speakers, slight surround effect can be obtained.

The surround sound will be more effective when surround speakers (optional) are connected to the SURROUND SPEAKERS terminals on the rear panel.

#### How to place speakers:

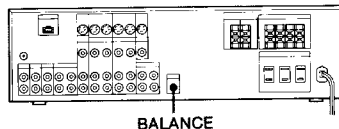


No sound will be heard from the surround speakers, unless one of the surround modes is selected.

#### BALANCE control (rear panel)

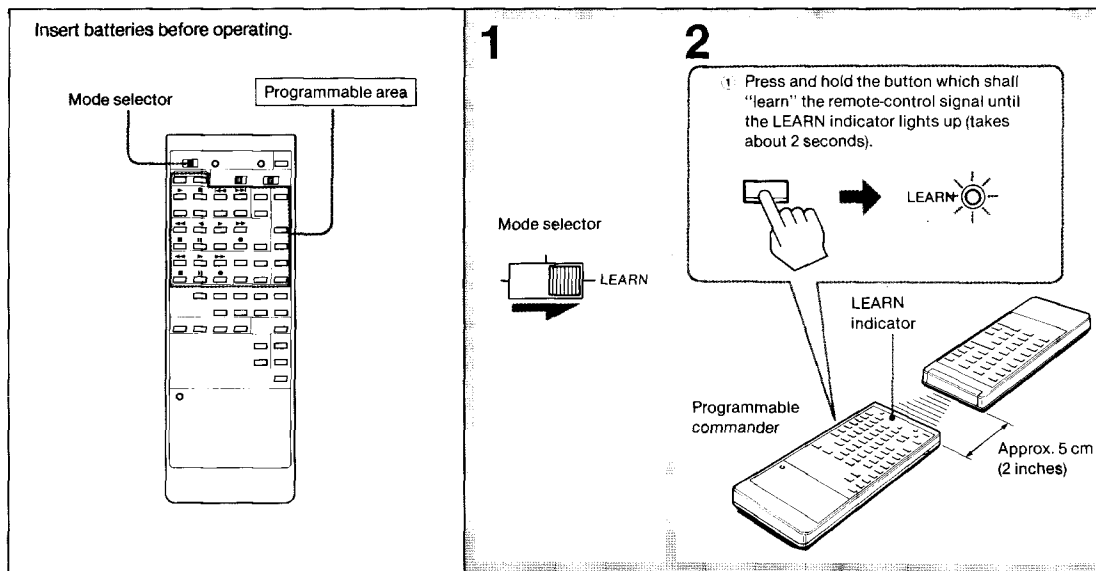
##### About the INPUT BALANCE control (at the rear)

When a conversation (or any place where the source becomes monaural) is played back in the DOLBY SURROUND MODE, adjust this control so that the sound from the surround speakers is heard at least. Normally, keep this control in the middle position.



# Operating Remotely Audio/Video

The supplied programmable remote commander is capable of remote-controlling various audio/video equipment that is compatible with infrared remote control system. If your system includes equipment from other manufacturers than Sony, please program their remote-control signals in the programmable area on the supplied commander.



## After programming

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

## If the LEARN indicator flashes or does not go out in step 2-2, 3 above

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.

→ Clear all the signals following the procedure on the right 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 do not use a remote commander. Also, note that there are some special remote-control signals that cannot be programmed.
- Do not attempt to use the programmable commander with an air conditioner or other household appliances.

## To program a new signal onto a previously programmed button

Follow the programming procedure above. 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 above.

TAPE	REV	REC	REC	PWD
VTR	● REC			



# Equipment from other manufacturers

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



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

Other manufacturer's remote commander

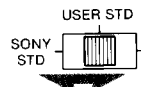
## The two remote commanders must:

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

3

Repeat operation for each button to be programmed.

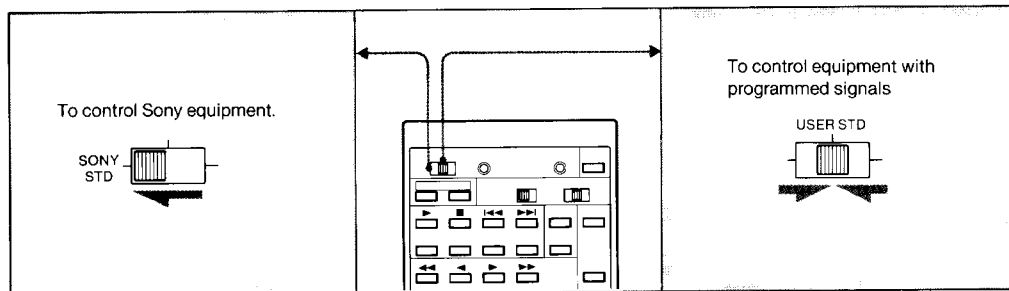
4



USER STD or SONY STD

## Controlling Equipment

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



### 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.

### 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 and start again. 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 20 — 20,000 Hz; rated 125 watts per  
channel minimum RMS power, with no  
more than 0.9% total harmonic distortion  
from 250 milliwatts to rated output.

### Other specifications

#### Amplifier section

Power bandwidth (IHF)

7 Hz — 30 kHz (8 ohms)

#### Harmonic distortion

Less than 0.9% (at 1 kHz, 8 ohms load, Front  
125 W + 125 W, Surround OFF)

#### Intermodulation (IM) distortion (60 Hz : 7 kHz)

Less than 0.9% at rated output

#### Frequency response

PHONO: RIAA equalization curve  
TUNER, CD, GRAPHIC EQ, TAPE, VIDEO 1, 2, 3,  
4: 10 Hz to 70 kHz,  $\pm 3$  dB

#### Residual noise

Less than 25  $\mu$ V (8 ohms, network A)

#### Damping factor

40 (8 ohms, 1 kHz)

### Video section

#### Video input/output

Permissible signal input level

1.5 Vp-p

#### Output signal level

1 + 0.1 Vp-p/with 1 Vp-p input  
(measured at MONITOR OUT)

#### Impedance (output)

75-ohm unbalanced, negative sync

### Input

Input jack		Jack type	Sensitivity	Impedance
PHONO	MM	Phono	2.0 mV	50 kohms
TUNER CD VIDEO 1, 2, 3, 4 (CDV) TAPE		Phono	150 mV	50 kohms

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### Output

REC OUT	Phono jacks	Voltage 150 mV Impedance 470 ohms
SPEAKERS	—	Accepts speakers of 8 — 16 ohms.
HEADPHONES	Stereo phone jack	Accepts low and high impedance headphones.
VIDEO 1, 2, MONITOR	S jack	1 Vp-p, 75 ohms

### Tone controls

	Response
BASS	$\pm 8.5$ dB (100 Hz)
TREBLE	$\pm 10$ dB (10 kHz)

### General

#### System

Power amplifier All-stage direct-coupled pure complementary SEPP OCL circuit

#### Surround amplifier

Semi complementary SEPP circuit

#### Preamplifier

NF type tone control

#### Surround circuit

Digital Delay Surround circuit  
Operation circuit matrix type

#### Overall output

Front 125 W + 125 W,  
Surround 40 W (20 W + 20 W)

#### Dolby input sensitivity

500 mV

#### Power requirements

120 V AC, 60 Hz

#### Power consumption

U.S.A. model: 230 W  
Canadian model: 500 VA  
3 switched outputs for system, 100 watts max.

#### AC Power outlet

#### Dimensions

430 x 130 x 355 (W/H/D) mm  
(17 x 5 1/8 x 14 inches)

#### Weight

Approx. 10 kg (22 lb 1 oz)

#### Accessories supplied

Programmable remote commander  
RM-P202 (1)  
Sony SUM-3(NS) batteries (2)

Design and specifications subject to change without notice.

# Troubleshooting Guide

Should any problem persist after you have made these checks and taken proper measures, consult your nearest Sony service facility.

Before going through the check list below, first refer back to the connection and operating procedures.

Trouble		Possible Causes
Power cannot be turned on.		<ul style="list-style-type: none"> <li>• Check if the power cord is disconnected from the power outlet.</li> </ul>
Audio	No audio.	<ul style="list-style-type: none"> <li>• Check for faulty connection.</li> <li>• Check for short-circuited speaker terminals.</li> <li>• The shorting plug of the EQUALIZER jacks are disconnected.</li> <li>• Check that the connected equipment, such as a graphic equalizer, is turned on.</li> </ul>
	No audio from one channel.	<ul style="list-style-type: none"> <li>• Check if the BALANCE is set to an extreme position.</li> <li>• Check if the speaker cord or connection cord is disconnected.</li> </ul>
	Distorted audio.	<ul style="list-style-type: none"> <li>• Check if the audio volume setting is above the maximum permissible input of the speakers.</li> </ul>
	Obscure instrument positioning, with lack of bass sound.	<ul style="list-style-type: none"> <li>• Check if the positive (+) speaker terminal on the main body is not connected to the negative (-) terminal on the speaker, and vice versa.</li> </ul>
	Hum or noise.	<ul style="list-style-type: none"> <li>• Check that the grounding wire of the turntable is connected securely.</li> <li>• Check that the connection cords are inserted securely into jacks.</li> </ul>
	Switching on DBFB does not affect the sound.	<ul style="list-style-type: none"> <li>• Source sound does not contain low frequency sound.</li> <li>• DBFB reinforces low frequencies only at low volume level.</li> </ul>
Video	No video.	<ul style="list-style-type: none"> <li>• Check that the connections are correct.</li> <li>• Check that the correct FUNCTION is selected.</li> </ul>
	Unclear video, low image quality.	<ul style="list-style-type: none"> <li>• Check if there is any nearby source of noise.</li> </ul>
Programmable Commander	Remote-control operation cannot be performed.	<ul style="list-style-type: none"> <li>• Check that the batteries are loaded correctly.</li> <li>• Check if there is any obstacle between the programmable commander and amplifier.</li> <li>• Check if the batteries are exhausted.</li> <li>• Check if the mode selector is set to USER STD in remote-control operation using programmed signals.</li> </ul>
	The remote-control signal cannot be programmed. The LEARN indicator does not light.	<ul style="list-style-type: none"> <li>• Place both remote commanders apart from the source of noise (see page 16).</li> <li>• The batteries are exhausted (see page 11).</li> </ul>
	The LEARN indicator goes off after flashing.	<ul style="list-style-type: none"> <li>• The internal memory capacity is full (see page 16).</li> </ul>