YAMAHA AVC-70

Natural Sound Stereo Control Amplifier

Préamplificateur stéréo de la série "Natural Sound"

Amplificador de control estéreo de sonido natural

RS

CENTER

Remote Control Transmitter
Emetteur de télécommande
Transmisor de telecontrol

Batteries (size "AA", R06)
Piles (Taille "AA", R06)
Pilas (tamaño "AA" R06)

Seals and Tweezers
Etiquettes et pinces
Sellos y pinzas

Remote Control Cable (5-pin, tuner)
Câble de télécommande (5 broches, syntoniseur)
Cable de telecontrol (5 clavijas, sintonizador)
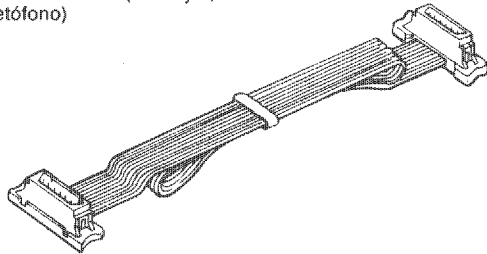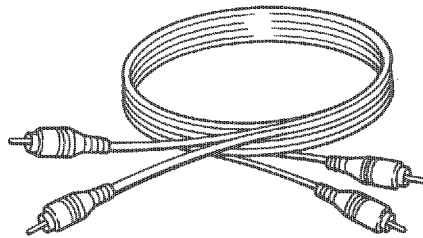
Remote Control Cable (6-pin, cassette deck)
Câble de télécommande (6 broches, platine à cassette)
Cable de telecontrol (6 clavijas, magnetófono)

Remote Control Cable (mini-plug, turntable)
Câble de télécommande (mini-prise, platine tourne-disque)
Cable de telecontrol (miniclavija, giradiscos)

Video Cord
Câble vidéo
Cable de vídeo

Audio Cord
Câble audio
Cable de audio

YAMAHA NATURAL SOUND STEREO CONTROL AMPLIFIER AVC-70

DELAY TIME

SURROUND PROCESSING MODE — OFF LIVE HALL SMST DOLBY

DOWN REAR LEVEL UP   DOWN DELAY TIME UP

INPUT SELECTOR — VCR 2 VCR 1 AUX LD/CDV TV TAPE DAT TUNER CD PHONO

REMOTE CONTROL   MUTING

VOLUME

DOLBY SURROUND

POWER   PHONES   AUX VIDEO L AUDIO R   BASS EXTENSION OFF ON   BASS   MID   TREBLE   BALANCE   REC OUT 2   REC OUT 1

EXT REMOTE   INPUT BAL   REMOTE CONTROL TUNER TAPE   MONITOR OUT   AC OUTLETS UNSWITCHED

TV LD/CDV VCR 1 VCR 2   S VIDEO VCR 1 VCR 2

GND PHONO CD TUNER DAT TAPE TV LD/CDV VCR 1 VCR 2 OUTPUT

FRONT C REAR

SWITCHED

YAMAHA

4

5

6

REMOTE CONTROL sensor
Détecteur de télécommande
Sensor del telecontrol

Within 7m (23 feet)
Moins de 7m
Menos de 7 metros

30°   30°
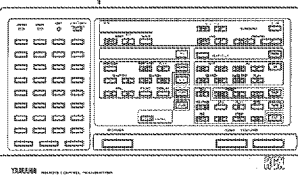
A
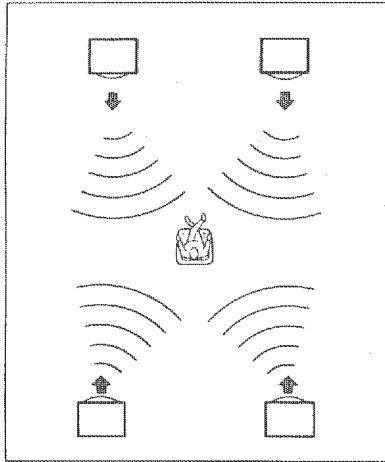
B
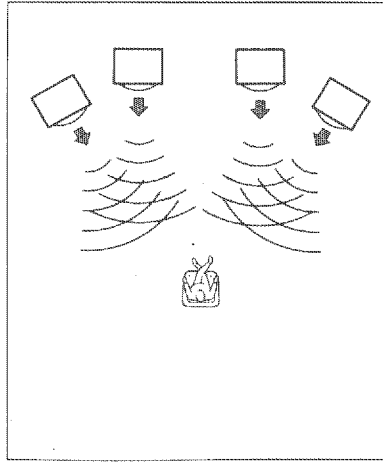
C
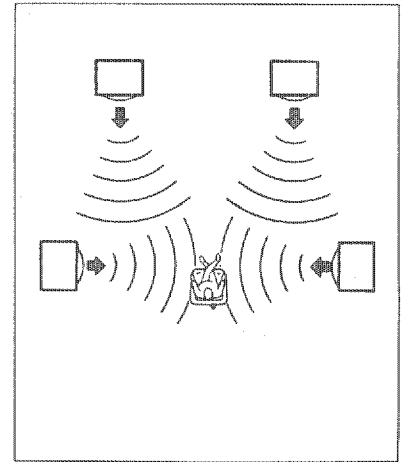
● *Thank you for purchasing the YAMAHA AVC-70 stereo control amplifier.*

CAUTION: READ THIS BEFORE OPERATING YOUR AVC-70

1. To ensure the finest performance, please read this manual carefully. Keep it in a safe place for future reference.

2. Install your unit in a cool, dry, clean place—away from windows, heat sources, and too much vibration, dust, moisture, or cold. Avoid sources of hum (transformers, motors.). To prevent fire or electrical shock, do not expose to rain and water.

3. Never open the cabinet. If a foreign object drops into the set, contact your dealer.

4. Do not use force on switches, knobs or cords. When moving the unit, first disconnect the power plug and the cords connecting the other equipment. Never pull the cord itself.

5. Always set the volume control to "–∞" while lowering the tonearm to play a records; turn the volume up with the stylus in the groove.
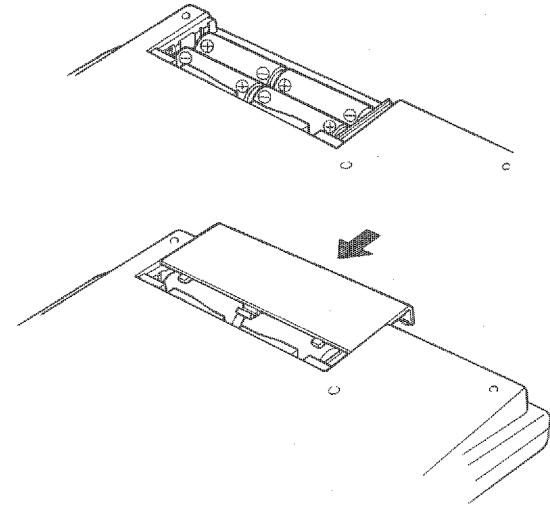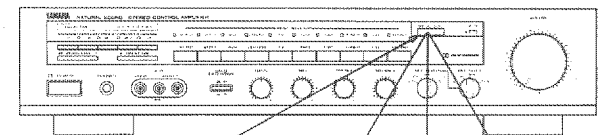
6. Do not attempt to clean the unit with chemical solvents; this might damage the finish. Use a clean, dry cloth.

7. Be sure to read the "troubleshooting" section on common operating errors before concluding that your unit is faulty.

8. Grounding or polarization — The precautions should be taken so that the grounding or polarization of an applicance is not defeated.

9. Do not connect audio equipment to the AC outlets on the rear panel if that equipment requires more power than the outlets are rated to provide.

10. If your unit has a voltage selector (General model only), check that it is set to your local voltage before you plug it in. If not properly set, reset the switch to indicate your supply voltage.

IMPORTANT
Please record the serial number of your unit in the space below.

Model: **AVC-70**
Serial No.:

The serial number is located on the rear of the unit. Retain this Owner's Manual in a safe place for future reference.

WARNING
TO REDUCE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

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

THIS APPARATUS COMPLIES WITH THE "CLASS B" LIMITS FOR RADIO NOISE EMISSIONS SET OUT IN RADIO INTERFERENCE REGULATIONS.

Special Instructions for U.K. Model

IMPORTANT
The wires in the mains lead are coloured in accordance with the following code:

Blue: NEUTRAL
Brown: LIVE

As the colours of the wires in the mains lead ⊂ 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 terminals which is marked with the letter L or coloured RED.

(See Fig. ▓)

After unpacking, check that the following parts are contained.

- Remote control transmitter (RCX)
- Batteries (size "AA")
- Remote control cable (5-pin, tuner)
- Remote control cable (6-pin, cassette deck)
- Remote control cable (mini-plug, turntable)
- Video cord
- Audio cord
- Seals and Tweezers

▓ FRONT PANEL   (See Fig. ▓)

① Surround buttons and indicators

When you wish to enjoy surround sound, use these buttons to activate the surround sound processor.

SURROUND PROCESSING MODE buttons and indicators:
These buttons are used to select a Surround Processing Mode. When the LIVE, HALL, SIM.ST (simulated stereo), or DOLBY SUR. button is pressed, the corresponding indicator lights. When surround sound is not desired, press the OFF button.
For each surround feature, refer to "USING THE SURROUND SOUND PROCESSOR" section described later.

DELAY TIME control and indicators:
This control is used to vary the audio sound delay time to the rear speaker pair. It can be set to 15, 20, 25 or 30 milliseconds. To select a shorter delay time, press the DOWN side of this control. To select a longer delay time, press the UP side of this control.

REAR LEVEL volume control:
This control raises or lowers the volume level of the rear speakers. Press the UP side of the control to raise the volume level and press the DOWN side to lower it.

② INPUT SELECTOR buttons and indicators

These buttons are used to select the source you wish to monitor (Video Cassette Recorder 1, Video Cassette Recorder 2, Auxiliary, Laser Disc player/ CD Video player, Television, Tape deck, Digital Audio Tape deck, Tuner, CD player or Turntable). When one of these buttons is pressed, the corresponding indicator lights.

③ REMOTE CONTROL sensor

This sensor is used to receive signals from the remote control unit.

④ Audio MUTING indicator

This indicator lights when Muting is engaged (from the remote control unit). By pressing the MUTE −20 dB key of the remote control transmitter, the sound level will be muted by 20 dB.

⑤ VOLUME control and indicator

This control is used to adjust the output volume level. Turning the control clockwise increases the sound level, and turning it counterclockwise decreases the sound level. This control acts as the master volume control; it increases and decreases the volume level to both the front and rear speaker pairs. The built-in indicator lights when the POWER switch is turned on.

⑥ POWER switch and indicator

This switch is used to turn the power to the unit on and off. Press it to supply power and light the POWER indicator. Press the switch again to turn the power off.

Notes on Stand-by mode

When the POWER key on the remote control transmitter is pressed to turn off the power instead of the POWER switch on the front panel, the POWER indicator remains dimly lit. In this state, pressing the POWER key turns the power on and the POWER indicator lights brightly.

To completely turn off the power, press the POWER switch on the front panel.

⑦ HeadPHONES jack

This jack is used to privately listen to the sound. Insert your headphone plug into it. The sound from the speakers will not be heard.

⑧ AUX jacks

These jacks are used to connect an auxiliary video or audio input source, such as a video camera, to the amplifier.

⑨ BASS EXTENSION switch

This switch is used to activate a circuit which effectively extends the low frequency output of the amplifier.

⑩ Tone controls (for the front speakers)

BASS control:

This control is used to increase or decrease the low frequency response. The "0" center click position produces a flat response. Rotating the control in the + direction increases the low frequency response. Conversely, rotating the control in the − direction decreases it.

MID control:

This control is used to increase or decrease the mid-range frequency response. The "0" center click position produces a flat response. Rotating the control in the + direction increases the mid-range frequency response. Conversely, rotating the control to the − direction decreases it.

TREBLE control:

This control is used to increase or decrease the high frequency response. The "0" center click position produces a flat response. Rotating the control in the + direction increases the high frequency response. Conversely, rotating the control in the − direction decreases it.

⑪ BALANCE control

This control is used to adjust the relative volume levels of the left and right speakers. Rotating the control in the R direction shifts the sound image to the right. Conversely, rotating the control in the L direction shifts the sound image to the left. Use this control to compensate for unbalanced listening conditions due to your furniture arrangement, speaker placement, etc.

⑫ REC OUT 1 and 2 selectors

These selectors are used to select the source to be recorded. They enable video/audio recording of any source, even while monitoring another. For details, see the "RECORDING" section described later.

■ REAR PANEL (See Fig. 🔢.)

⑬ EXT REMOTE cable connector
This connector is used to connect external equipment to this unit for system remote control operation.

⑭ INPUT BALance control
Use this control to obtain the best surround condition.

⑮ REMOTE CONTROL cable connectors
These connectors are used to connect compatible YAMAHA components (with an 𝕽𝕾 mark) to your amplifier for remote control of each component. The cables for each component are supplied with this unit.
PHONO — Connect to a turntable using the cable with a mini-plug connector.
TUNER — Connect to a tuner using the cable with a 5-pin connector.
TAPE — Connect to a cassette tape deck using the cable with a 6-pin connector.

⑯ Video signal jacks
These jacks are used to connect the video signal cables from your components to the amplifier. They should be connected to the proper input/output jacks for each unit.
TV — Connect to a TV set.
LD/CDV — Connect to a Laser Vision Disc player or to a CD Video player.
VCR 1 — Connect to a Video Cassette Recorder for both recording and playback.
VCR 2 — Connect to a second Video Cassette Recorder for both recording and playback.
MONITOR OUT — Connect to the video IN terminal on a TV monitor.

⑰ S VIDEO connectors
With the S VIDEO connections, a high resolution picture will be obtained, resulting in a much clearer reproduction.
S VIDEO MONITOR connector — Connect to the S input connector on a TV monitor.
S VIDEO VCR 1 connectors — Connect to a Video Cassette Recorder that has S connectors for both recording and playback.
S VIDEO VCR 2 connectors — Connect to a second Video Cassette Recorder that has S connectors for both recording and playback.

⑱ AC OUTLETS
* **The type of AC outlet is different acccording to the destination.**
(Europe, and Australia models: switched x 1, unswitched x 1
USA, Canada and general models: switched x 2, unswitched x 1
U.K. model: switchced x 1)
These outlets are used to connect the power cords from your components to the amplifier.
The power to the SWITCHED outlets is controlled by the amplifier's power switch. They will supply power to any component that is connected to them whenever the amplifier is turned on, whether by the front panel POWER switch or by the remote control unit POWER button. The total maximum power consumption of the components attached to these outlets must not exceed 100 watts.
The power to the UNSWITCHED outlet is not controlled by the amplifier. It will continually supply power to any unit connected to it. The total maximum power consumption of the component attached to this outlet must not exceed 200 watts.
Note that the AC outlets are size-coded for polarity, so be sure to insert the plugs correctly.

⑲ Audio signal connection jacks
These jacks are used to connect the audio signal cables from your
components to the amplifier. They should be connected to the proper input/
output jacks for each unit. Be sure that the L and R channels are connected
correctly.
GND — Connect to the ground wire from a turntable.
PHONO — Connect to a turntable.
CD — Connect to a Compact Disc player.
TUNER — Connect to a tuner.
DAT — Connect to a Digital Audio Tape deck.
TAPE — Connect to a cassette tape deck.
TV — Connect to a TV set.
LD/CDV — Connect to Laser Vision Disc player or a CD video player.
VCR 1 — Connect to a Video Cassette Recorder for both recording and
playback.
VCR 2 — Connect to a second Video Cassette Recorder for both recording
and playback.

⑳ FRONT 1, 2, REAR OUTPUT jacks
Connect these jacks to the Input jacks of a power amplifier to drive the
speakers.

㉑ AC power cord
This cord is used to connect the amplifier to an AC wall outlet.

(See Fig. 4.)

The remote control transmitter supplied with your amplifier is designed to
control all the most commonly used features of the amplifier. If the CD, LD/
CDV player, tuner, turntable and cassette deck connected to your amplifier
YAMAHA components designed for remote control compatibility (componer
with an ⫴ℛ⫴ mark), then this remote control transmitter will also control vari
functions of each component. Please consult your YAMAHA dealer for
information on which components are compatible with the remote control
transmitter. Note that this Remote Control trnasmitter will directly operate ar
compatible YAMAHA CD, LD/CDV player, Graphic Equalizer and some Tur
or Cassette Decks bearing the ⫴ℛ⫴ mark.

NOTE:
This remote control transmitter has a learning function. For details, refer to t
"HOW TO USE THE LEARNING FUNCTION" section described later.

■ OPERATION KEYS

① Graphic Equalizer control keys
When equalized sound is desired, set the ON/FLAT key to ON and select a
preset EQUALIZER curve with the PRESET UP and DOWN keys.
When equalized sound is not desired, set the ON/FLAT key to FLAT.

② LD/CDV players keys
LD/CDV:
To monitor the Laser Vision Disc player or CD Video player, press this key.
OPEN/CLOSE:
Press this key to open/close the disc tray.
PAUSE/STOP:
Press this key once to temporarily stop the player operation. When it is pres
again, the player enters stop mode.
PLAY:
Press this key to start play. If this key is pressed when the disc tray is open
the disc tray will close and the unit will enter play mode. When this key is
pressed during other modes (pause, still, etc.), that mode is released and pl;
is resumed.

CHAPTER:
Press the − key to detect the beginning of the current chapter. If it is kept pressed, the chapter number is reversed continuously.
Press the + key to detect the beginning of the next chapter. If it is kept pressed, the chapter number is advanced continuously.

SEARCH:
When the ◄◄ key is pressed during play, play is reversed at high speed.
When the ►► key is pressed during play, play is advanced at high speed.

STILL (for LD/CDV-LD disc only):
When one of these keys is pressed during LD/CDV-LD (CAV) disc play, the picture freezes. Every time the |◄◄ key is pressed again, the picture reverses frame-by-frame. Every time the ►►| key is pressed again, the picture advances frame-by-frame.

SOUND:
Every time this key is pressed, the audio signal changes in the order:
STEREO → 1/L-CH → 2/R-CH → STEREO.

DISPLAY:
When this key is pressed during play, the monitor screen shows the following data.

   With LD/CDV-LD (CAV) discs:
   Chapter and frame numbers
   With LD/CDV-LD (CLV) discs:
   Chapter and time numbers
   With CD discs or the audio section of CDV discs:
   Total time, remain time or track time
   With the video section of CDV discs:
   Track/index numbers and track time

❸ TV key
Press this key to monitor the TV set.

❹ SURROUND keys
ON/OFF:
When surround sound is desired, press this key. The last selected surround mode is automatically set.
When surround sound is not desired, press this key again.

DELAY TIME:
These keys have the same function as the DELAY TIME control on the amplifier.

MODE:
Press these keys to select the surround processing mode.

REAR LEVEL:
These keys have the same function as the REAR LEVEL volume control on the amplifier.

❺ Turntable keys
PHONO:
Press this key to monitor a turntable.

PLAY/CUT:
This key is used to control the start and stop operations of a turntable bearing the ⏤Ⓡⓢ mark.

❻ CD player keys
CD:
Press this key to monitor a compact disc player.

SKIP:
Press the |◄◄ key to return to the beginning of the current selection. When this key is pressed at the beginning of a selection, play will start at the beginning of the previous selection.
Press the ►►| key to advance to the beginning of the next selection.

SEARCH:
Press the ◄◄ to fast-reverse play, and press the ►► key to fast-forward play.

DISC:
When a CD player which has an Auto charger mechanism is used, press these keys to select the disc No. to be played.

PAUSE/STOP:
Press this key once to temporarily stop play and press it again to completely stop play.

PLAY:
Press this key to start play. If this key is pressed when the disc tray is opened, the tray will close and the unit will enter play mode. When this key is pressed during pause mode, play will be resumed.

⑦ Tuner keys
TUNER:
Press this key to monitor a radio program.
PRESET A/B/C:
This key is used to change the preset station range.
PRESET UP/DOWN:
These keys are used to select the preset station frequency.

⑧ Tape deck keys
TAPE:
Press this key to monitor a tape deck.
REC/PAUSE key:
Press this key to put the deck into Rec Standby mode or Rec Pause mode.
DIR A key (for a double cassette deck only):
Press this key to change the tape running direction of DECK A.
PLAY key:
Press this key to start tape play or to begin recording from Rec Standby mode or Rec Pause mode.
DIR B (for a double cassette deck only):
Press this key to change the tape running direction of DECK B.
DECK A/B key (for a double cassette deck only):
Press this key to select which deck is to be operated, either DECK A or DECK B.
REC MUTE key:
Press this key to make a blank section during recording.
▶▶ and ◀◀ key:
These keys are used with a deck that has a Direction button. Press either the ▶▶ or ◀◀ key, the one pointing in the same direction as the Direction indicator, to fast-forward a tape. To fast-rewind a tape, press either the ▶▶ or ◀◀ key, the one pointing in the opposite direction as the Direction indicator. If your deck has no Direction button, press the ▶▶ key to fast-forward a tape and press the ◀◀ key to fast-rewind a tape.
STOP key:
Press this key to stop a tape.

⑨ DAT key
Press this key to monitor a Digital Audio Tape deck.

⑩ VOLUME control keys
These keys are used to increase or decrease the output volume level of bc front and rear speaker pairs.

⑪ AUX/VCR 1/VCR 2 keys
To monitor the equipment connected to the AUX, VCR 1 or VCR 2 jacks of unit, press the corresponding button.

⑫ MUTING key
This key is used to lower the output volume of the amplifier to a −20 dB leve

⑬ POWER key
This key is used to turn the unit on and off.

■ BATTERY INSTALLATION   (See Fig. 5)

The remote control unit uses 4 batteries (size "AA", R06). Install them according to the illustration. Be sure that they are installed correctly.

■ BATTERY REPLACEMENT

When the remote controllable distance decreases the batteries are exhaus Replace with 4 new batteries.
Install the batteries with the correct (+) and (−) polarities as indicated in the battery compartment.

BATTERY PRECAUTIONS

Incorrect use of a battery may result in personal injury or remote control transmitter damage. Be aware of the following measures:

- Read all safety labels on batteries.
- Do not use an old battery with a new one.
- Do not mix battery types (alkaline, heavy duty, carbon, nickel cadmium, etc.).
- When the remote control transmitter will not be used for a long period of time, remove the batteries and store them in a cool, dry place.
- Do not short circuit, heat, disassemble, or dispose of batteries into a fire.
- If leakage occurs, thoroughly wipe off all electrolyte residue from the battery compartment. Replace with new batteries.

■ OPERATION RANGE   (See Fig. 6)

You must point the remote control unit toward the amplifier and be within about 7 meters (23 feet) of it for proper operation.

System Connection Diagram

* Note that the remote control transmitter will directly operate some Tuners or Cassette Decks bearing the ▣▣ mark. For these components, the remote control cable connections are not necessary.

* Remote terminal for a tape deck with ▣▣ mark

LINE IN

LINE OUT

Tape deck

* Remote terminal for a tuner with an ▣▣ mark

OUTPUT

Tuner

* Remote terminal for a turntable with an ▣▣ mark

OUTPUT

Ground wire

Turntable

OUTPUT

CD Player

TV set

Audio output jacks   Video output jack

Laser Disc player or CD Video player

Audio output jacks   Video output jack

VCR

Audio output jacks
Video output jack
Audio input jacks
Video input jack

Second VCR

Audio output jacks
Video output jack
Audio input jacks
Video input jack

TV/Monitor with video input jack

Video input jack

YAMAHA

Line out   Line in

DAT deck

Front Input jacks   Rear Input jacks

Power Amplifier

S VIDEO connectors
These connectors are used to connect a T monitor or Video cassette recorders havin S connectors. For details, refer to the "CONNECTIONS FOR EACH COMPONENT" section described later.

Power plug for other equipment (UNSWITCHED) (Except for UK model)
Handles up to 200 W
Not linked to the POWER switch of this ur

Power plugs for other equipment (SWITCHED)
Handles up to 100 W
Linked to the POWER switch of this unit.

The speaker connections are different according to the system to be used.

Front Speakers   Rear Speakers

CONNECTIONS FOR EACH COMPONENT

● Remember to turn off the power to all of the units before making any connections.

● When making the connections, make sure that all of the cables are well away from sources of hum, such as the power cords or power transformers of other components.

Notes on REMOTE CONTROL terminals

The REMOTE CONTROL terminals are used when you have YAMAHA compatible components bearing the ≡RI≡ mark. These terminals allow you to control the connected components with the supplied remote control transmitter.

Connect the remote control cables from the components to the correct terminals on your amplifier (i.e. PHONO, TUNER, TAPE).

Note that no cable is necessary for a CD or LD/CDV player as the remote control transmitter operates the player directly.

POWER AMPLIFIER

A power amplifier is necessary to drive the speakers.
Connect the Front Input jacks of the power amplifier to the FRONT 1 OUTPUT jacks of this unit and the Rear Input jacks of the power amplifier to the REAR OUTPUT jacks of this unit.

● The FRONT 2 OUTPUT jacks can be used when connecting another amplifier.

Rear panel of this unit

Front Input jacks   Rear Input jacks

Power amplifier

Front speakers

Rear speakers
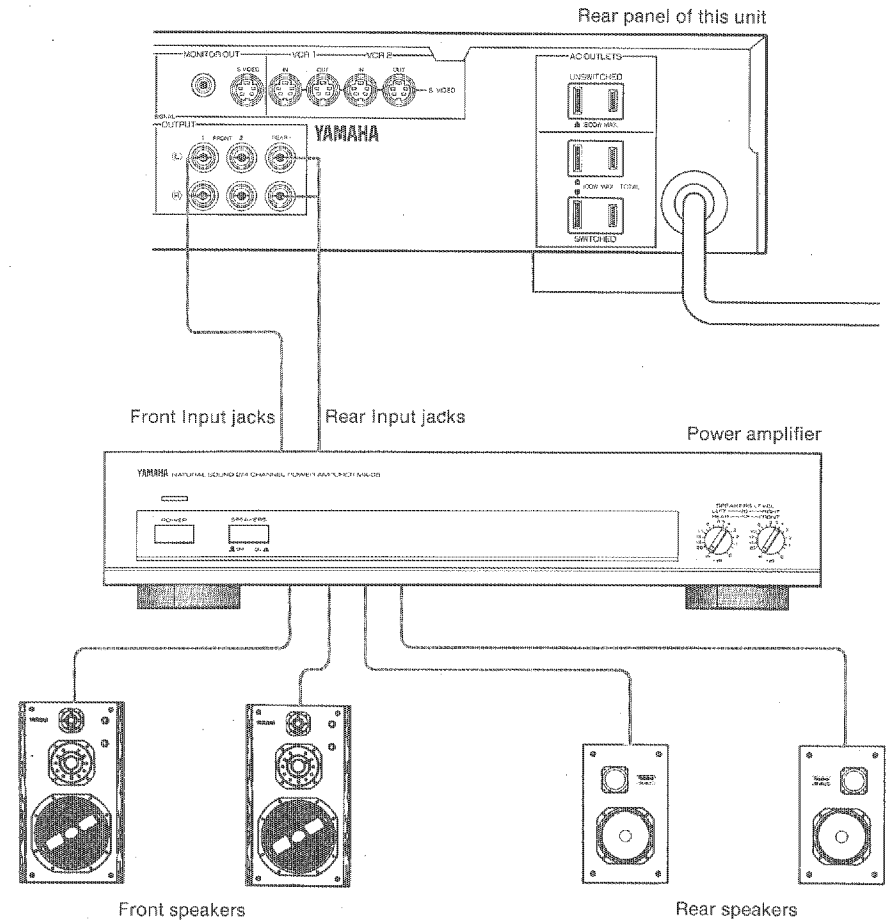
AUDIO COMPONENTS

■ TURNTABLE

Connect the output cables of the turntable to the PHONO jacks, and connect the ground wire to the GND terminal on the rear panel of this unit. This should produce minimum hum, but in some cases better results are obtained with this wire disconnected. When a turntable bearing the ∑RS mark is used, connect the remote control terminal on the turntable to the REMOTE CONTROL PHONO terminal on the rear panel of this unit, using the remote cable with mini-plug.

Rear panel of this unit

Remote cable with mini-plug,
specially for use with a turntable
with bearing the ∑RS mark.

Turntable
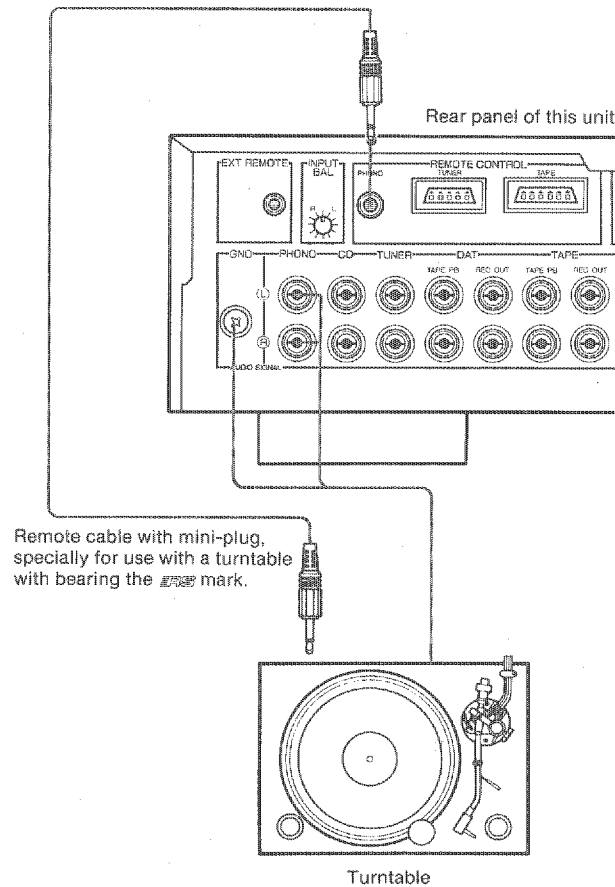
■ COMPACT DISC PLAYER

Connect the output jacks of the compact disc player to the CD jacks on the rear panel of this unit.
● The digital input jacks are not equipped with this unit.

Rear panel of this unit

OUTPUT jacks

Compact Disc player
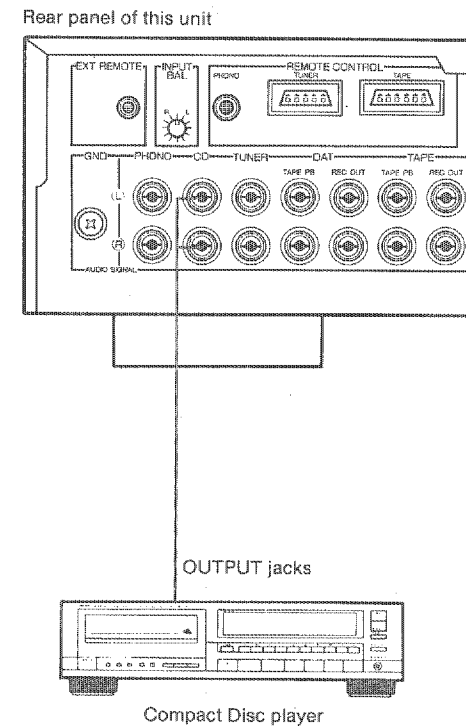
■ TUNER

Connect the output jacks of the tuner to the TUNER jacks on the rear panel of this unit.

When a tuner bearing the ꞮꞯꞢ mark is used, connect the remote control terminal on the tuner to the REMOTE CONTROL TUNER terminal on the rear panel of this unit, using the 5-pin remote control cable.

* If your tuner bears the ꞮꞯꞢ mark, and it can be directly operated with the remote control transmitter, the remote control cable connections are not necessary.

Rear panel of this unit

5-pin Remote Control cable, specially for use with a tuner bearing the ꞮꞯꞢ mark.

OUTPUT

Tuner
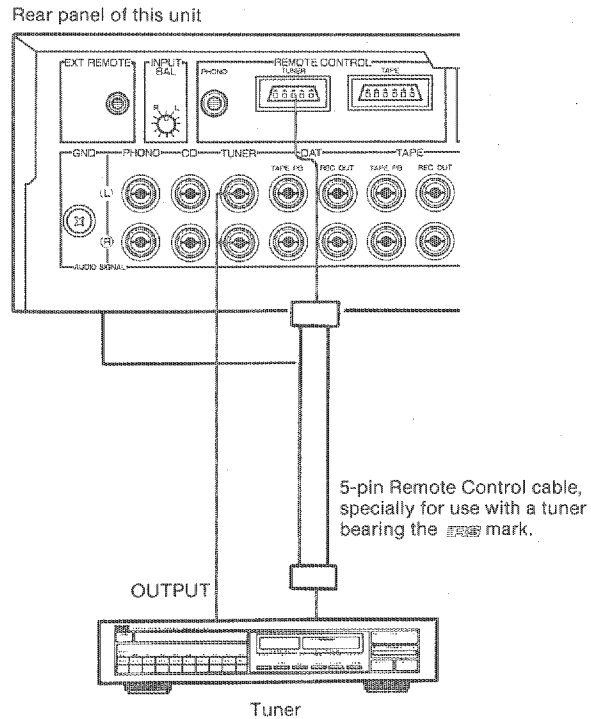
■ DAT (Digital Audio Tape) DECK

Connect the cable from a DAT deck to the DAT jacks.

The playback (LINE OUT) jacks of the DAT deck go to the TAPE PB jacks, and the record (LINE IN) jacks to to the REC OUT jacks on the rear panel of this unit.

● The digital input/output jacks are not equipped with this unit.

Rear panel of this unit
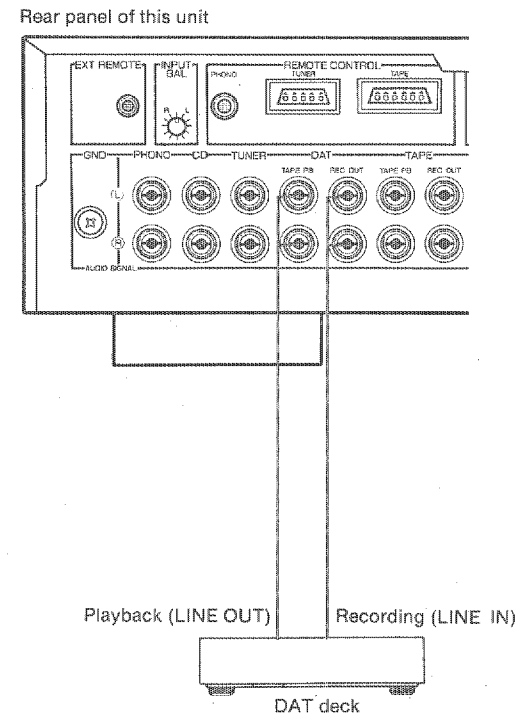

Playback (LINE OUT)   Recording (LINE IN)

DAT deck

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■ TAPE DECK

Connect the cable from a cassette deck, or other audio tape unit, to the TAPE jacks. The playback (LINE OUT) jacks of the cassette deck go to the TAPE PB jacks, and the record (LINE IN) jacks go to the REC OUT jacks on the rear panel of this unit. When a cassette deck bearing the 三RIS mark is used, connect the remote control terminal on the cassette deck to the REMOTE CONTROL TAPE terminal on the rear panel of this unit, using the 6-pin remote control cable.

* If your cassette deck bears the 三RIS mark, and it can be directly operated with the remote control transmitter, the remote control cable connections are not necessary.

Rear panel of this unit

6-pin Remote control cable, specially for use with a tape decks bearing the 三RIS mark.

P.B
(LINE OUT)

REC
(LINE IN)

Tape Deck
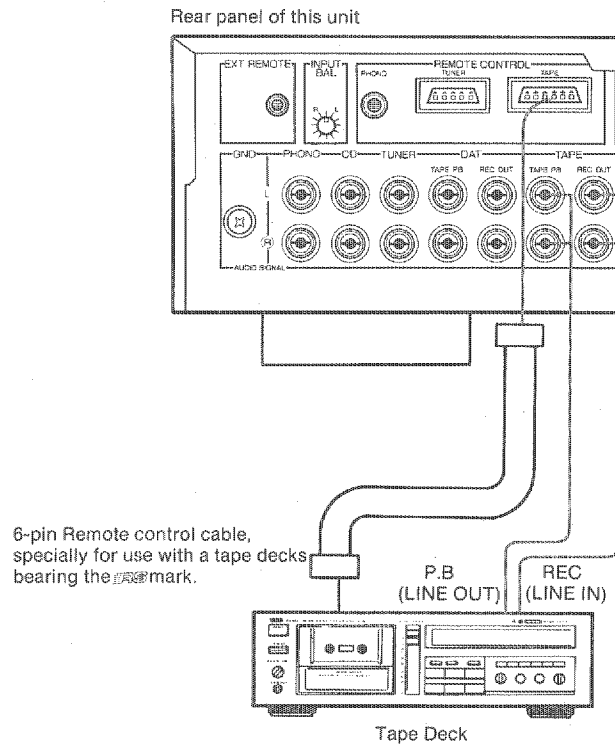
VIDEO COMPONENTS

■ TV SET

Connect the video output jack from the TV set to the TV jack on the rear pa of this unit and connect the audio output jacks from the TV set to the TV au jacks.

Rear panel of this unit

Video output jack   Audio output jacks

TV set
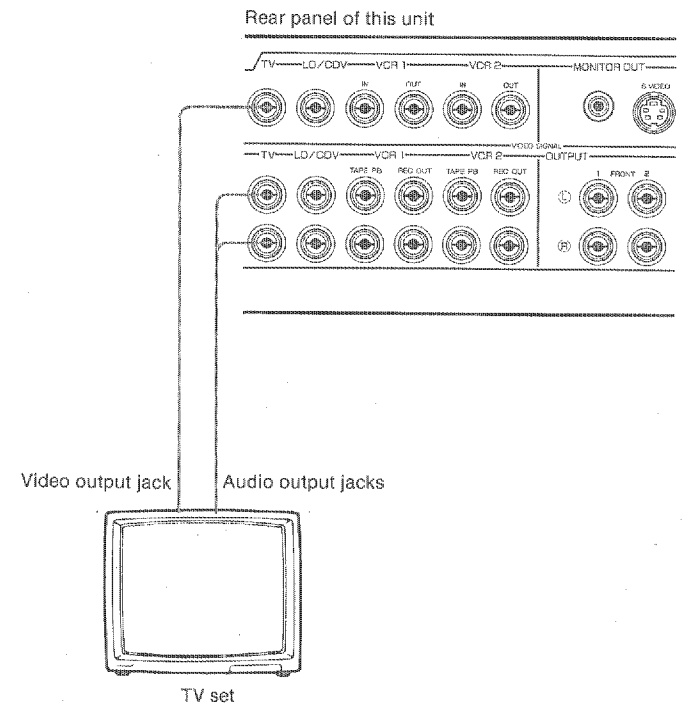
■ LASER VISION DISC PLAYER/CDV PLAYER

Connect the video output jack from the laser vision disc player/CD video player to the LD/CDV video jack and connect the audio output jacks from the laser vision disc player/CD video player to the LD/CDV audio jacks.

Rear panel of this unit

Video output jack | Audio output jacks

Laser Vision Disc player/CD Video player
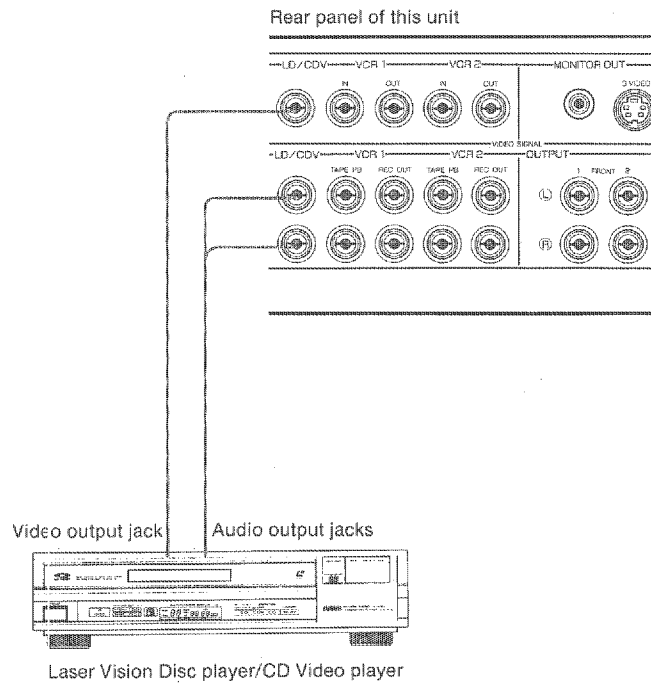
■ VCR (Video Cassette Recorder)

Connect the video jacks of the VCR to the VCR 1 jacks, and connect the video jacks of a second VCR to the VCR 2 jacks on the rear panel of this unit. The video playback (VIDEO OUT) jack of the VCR goes to the IN jack, and the video record (VIDEO IN) jack goes to the OUT jack.
Connect the audio output jacks of the VCR to the VCR 1 jacks, and connect the audio output jacks of a second VCR to the VCR 2 jacks.
The audio playback (AUDIO LINE OUT) jacks of the VCR go to the TAPE PB jacks, and the audio record (AUDIO LINE IN) jacks go to the REC OUT jacks.

First VCR   Second VCR

Audio output jacks
Video output jack
Audio input jacks
Video input jack

Video output jack
Audio output jacks
Video input jack
Audio input jacks

Rear panel of this unit
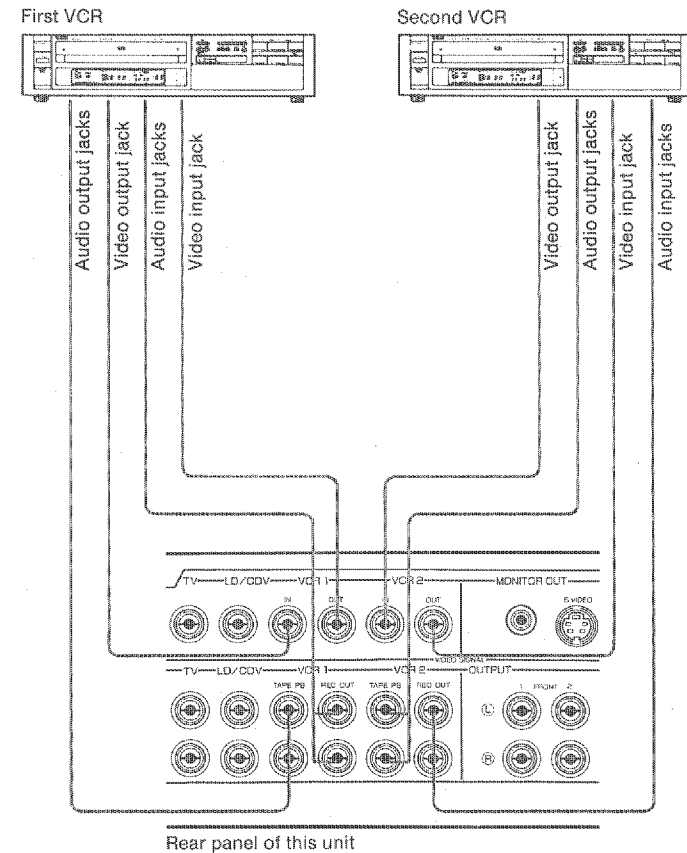
When using the S connector

- When a VCR that has S connectors is used, connect the S VIDEO connectors. With the S VIDEO connections, a high resolution picture will be obtained, resulting in a much clearer reproduction.

Connect the S output connector of the VCR to the S VIDEO IN connector in the VCR 1 section on the rear panel of this unit, and connect the S input connector of the VCR to the S VIDEO OUT connector.

- Keep the VCR IN and OUT jacks, and TAPE PB and REC OUT jacks connected between the VCR and this unit.

If the second VCR has S connectors, connect the S output and input connectors to the S VIDEO IN and OUT connectors in the VCR 2 section on the rear panel of this unit in the same way.
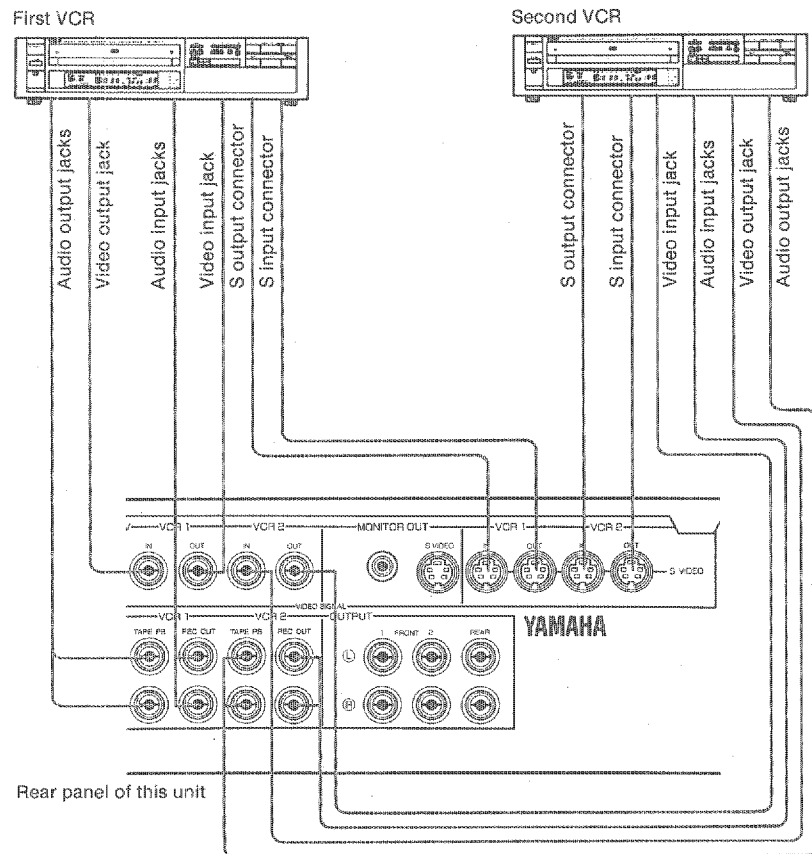
■ TV MONITOR

Connect the video jack from the TV monitor to the MONITOR OUT jack on t rear panel of this unit. Note that audio connections to the monitor are not necessary, as the audio portion of the signal is sent to your speakers throug the amplifier.

When using the S connector

- When a monitor that has an S video connector is used, connect S VIDEC MONITOR OUT connector.

With the S VIDEO connections, a high resolution picture will be obtained, resulting in a much clearer reproduction.

First VCR

Second VCR

Audio output jacks
Video output jack
Audio input jacks
Video input jack
S output connector
S input connector

S output connector
S input connector
Video input jack
Audio input jacks
Video output jack
Audio output jacks

Rear panel of this unit

TV monitor

Video input jack

TV Monitor having S connector

Rear panel of this unit
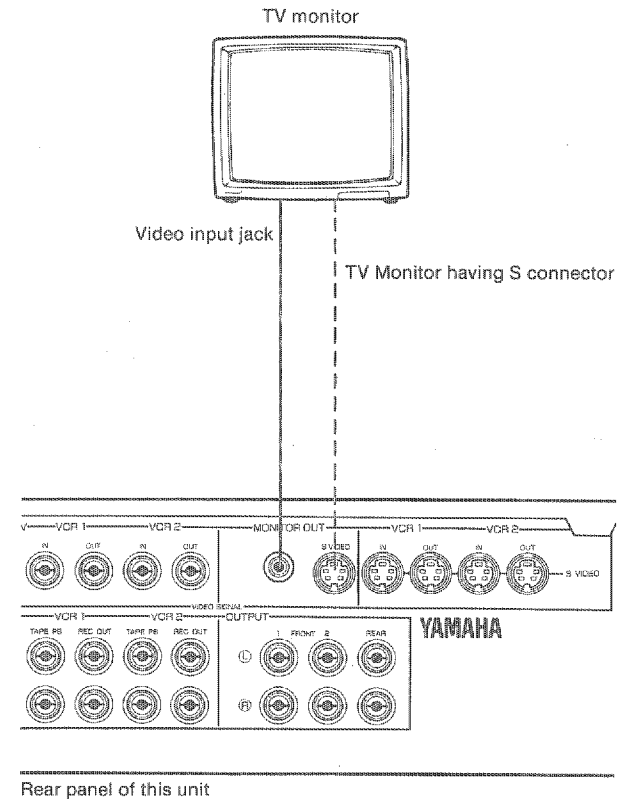
■ OTHER VIDEO SOURCE

If necessary, you can connect a third video input source, such as a video camera, to the AUX jacks on the front panel of this unit. When connecting a mono audio source, connect it to the L jack.

POWER CORDS

1. Connect the power cord of your tuner, cassette deck or other component to one of the two SWITCHED AC OUTLETS to automatically turn it on when the amplifier is turned on.
   The maximum total power consumption of the components connected to the SWITCHED AC OUTLETS must not exceed 100 watts.
2. Connect the power cord of your VCR or other unit to the UNSWITCHED AC OUTLET to supply power to it constantly. The maximum power consumption of the unit connected to the UNSWITCHED AC OUTLET must not exceed 200 watts.
3. Make sure that the power cords are not tied together with the input/output cables.
4. Connect the power cord of your amplifier to an AC outlet.

TO PLAY A PROGRAM SOURCE

1. Press the POWER switch to turn the unit ON.
2. For video sources, turn the TV monitor ON.
3. Select the program source to be heard or watched with the INPUT SELECTOR button.
4. Play the program source.
5. Adjust the VOLUME control to increase or decrease the output volume level of all of the speakers.
6. Adjust the BASS, MID, and TREBLE tone controls for the corresponding frequency response.
7. Set the BASS EXTENSION switch if necessary. Setting this switch to ON extends the low frequency response of the amplifier.
8. To use the Surround Processing mode, press the SURROUND PROCESSING MODE button and adjust the rear speakers level with the REAR LEVEL keys.
   For details on the surround processing mode, refer to "USING THE SURROUND SOUND PROCESSOR" described later.
● Use the MUTING key on the remote control transmitter to lower the overall system volume to the -20 dB level. This lets you lower the volume (to answer the phone, for example) without disturbing the main volume setting.

RECORDING

The setting of the REC OUT 1 and REC OUT 2 selectors enable you to make various recordings.

1. Set the REC OUT 1 and/or REC OUT 2 selector(s).

	REC OUT 1 setting	REC OUT 2 setting
To record an audio source onto a tape deck	PHONO, CD, TUNER, DAT	——————
To record an audio source onto a DAT deck	PHONO, CD, TUNER, TAPE	——————
To record an audio source onto video cassette recorder 1 or 2	PHONO, CD, TUNER, DAT, TAPE	Any position other than VCR 1 or VCR 2
To record the audio portion of a video source onto a tape deck or DAT deck	REC OUT 2 position	TV, LD/CDV, AUX, VCR 1, VCR 2
To record a video source onto video cassette recorder 1	REC OUT 2 position	TV, LD/CDV, AUX, VCR 2
To record a video source onto video cassette recorcer 2	REC OUT 2 position	TV, LD/CDV, AUX, VCR 1

2. Play the program source to be recorded and set the tape deck, DAT deck video cassette recorder to record mode.

● When you wish to listen to and/or watch the same source you are recording, select the corresponding source with the INPUT SELECTOR button.

● During cassette deck or DAT deck recording, the just recorded sound wi be heard by setting the INPUT SELECTOR button to the corresponding TAPE or DAT position.
During VCR recording, the just recorded sound and picture will be heard watched by setting the INPUT SELECTOR button to the corresponding V 1 or VCR 2 position.

● Since the REC OUT selectors are independent from the INPUT SELECT(buttons, you can listen to and/or watch a source other than the one you recording. Select the desired source with the INPUT SELECTOR buttons.

● The settings of the SURROUND PROCESSING MODE buttons, VOLUME BALANCE controls, BASS EXTENSION, and tone control buttons do not affect the recording.

This unit incorporates a sophisticated, multi-mode digital surround sound processing amplifier, which allows you to expand and shape the audio sound field from both the audio and video sources, for a theater-like experience in the listening/viewing room.

The surround sound processor has 4 processing modes and an independent DELAY TIME button which functions in conjunction with four of the surround modes. There are three modes for stereo source. One mode for monaural source is also included.
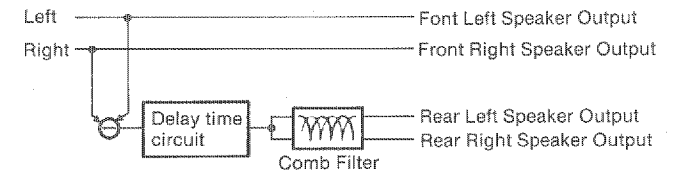
Refer to the descriptions of the surround processing modes and DELAY TIME button, and select the best effect according to your preference.

In addition, the rear speaker placement allows you to experience various atmospheres of the sound field. Select the best placement for the rear speakers by referring to "REAR SPEAKER REPLACEMENT" and the character of each surround mode described later.

LIVE SURROUND

This mode takes advantage of the delay signal and a feedback circuit on the rear effect speakers to create a bright, lingering, and somewhat resonant sound that characterizes a small concert space.

Localization center

Left ——————————————————— Font Left Speaker Output
Right —————————————————— Front Right Speaker Output

Delay time circuit —— Comb Filter —— Rear Left Speaker Output
—— Rear Right Speaker Output

Delay time: from 15 to 30 milliseconds

HALL SURROUND

In this mode, the center seems even more deeply behind the front speaker pair, creating an expansive, large hall ambience. The apparent listening position is in the center of the hall rather than in front of the stage.

Localization center

Left ——————————————————— Font Left Speaker Output
Right —————————————————— Front Right Speaker Output

Delay time circuit —— Comb Filter —— Rear Left Speaker Output
—— Rear Right Speaker Output

Delay time: from 15 to 30 milliseconds

22
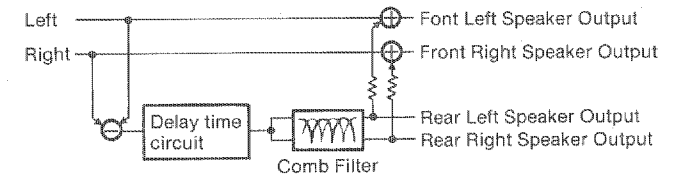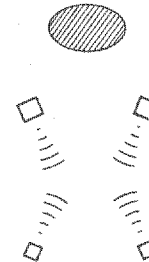
SIMULATED STEREO (SIM. ST)

This mode was designed specifically to enhance mono source programs. Compared to a strictly mono setting, the sound image created in this mode is wider and slightly forward of the speaker pair, lending an immediacy to the overall sound. It is particularly effective when used with old mono movies, news broadcasts and dialogue.

Localization center

Mono

Localization center

Simulated
Stereo

Left ——————————————— Font Left Speaker Output
Right ——————————————— Front Right Speaker Output

Delay time circuit

Comb Filter

—— Rear Left Speaker Output
—— Rear Right Speaker Output

Delay time: from 15 to 30 milliseconds

□□[DOLBY SURROUND] ™ DOLBY SURROUND (DOLBY SUR.)
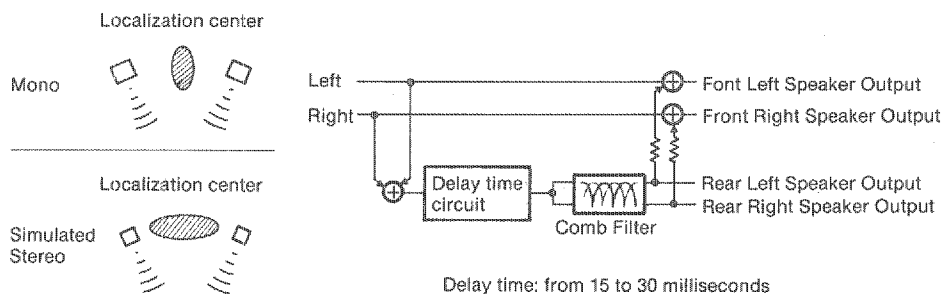
Dolby surround effect is encoded on the sound track of many commercially available video cassettes, video discs, etc. To play these program sources, this mode. When you play program sources encoded with Dolby surround, Dolby surround mode of this unit decodes the signal and feeds the sound effect through your rear speakers.

Localization center

Left ——————————————— Font Left Speaker Output
Right ——————————————— Front Right Speaker Outp

Delay time circuit

DOLBY NR

—— Rear Left Speaker Output
—— Rear Right Speaker Outpı

Delay time: from 15 to 30 milliseconds
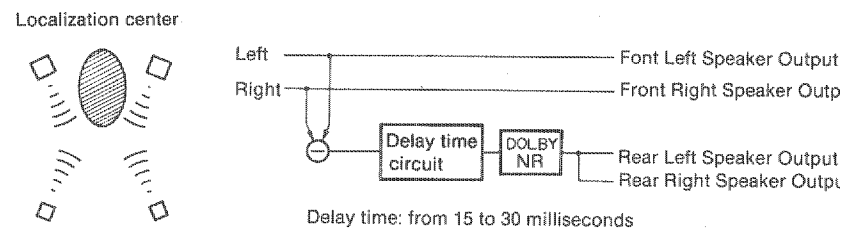
⊚ DELAY TIME UP/DOWN button

The DELAY TIME UP/DOWN button is effective with all modes. The delay time can be selected to be 15, 20, 25, or 30 milliseconds.

By applying more or less delay, sound effects, background noise, and ambient noise coming at you from the rear speakers can be enhanced or subdued for extra effect. Adding too much delay will cause an unnatural effect with some sources. Experiment with the DELAY TIME UP/DOWN button to create an effect that you find most suitable.

* The last settings of the DELAY TIME button and the SURROUND PROCESSING MODE buttons are memorized even when the power is turned off.
* The surround sound processor is effective only when this unit is used in a 4-speaker system setup. Refer to the "REAR SPEAKER REPLACEMENT" described later.

▦ INPUT BALANCE CONTROL ADJUSTMENT

To obtain the best surround condition, be sure to adjust the rear panel INPUT BALance control.

1. Set the front speaker selector of the power amplifier to off or disconnect the speaker wires so that the sound from the front speakers will not be heard.
2. Set the front panel controls as follows.
   SURROUND PROCESSING MODE button --- DOLBY SUR.
   REAR LEVEL volume control --- maximum.
3. Play a monaural program source (such as an FM mono station).
4. Then minimize the rear speakers' output by slightly turning the INPUT BAL. control until you achieve a "null" (i.e., minimum output from your rear speakers).

NOTE:

As you approach the "null", turn up the VOLUME to better hear your rear speakers.

▦ REAR SPEAKER PLACEMENT   (See Fig. ▦.)

The placement of a rear speaker pair in the listening room will greatly affect the overall sound field created. A small pair of speakers is all that is really required to create the full effect, and the most basic speaker placement configuration is the one shown in Fig. A.

This setup is ideal for creating a theaterlike atmosphere for movies and other video programs.

The "B" setup creates a sound field with added depth, much like that experienced in a live concert hall, where all the sound is coming at you from the front. It is most appropriate for musical sources, rather than videos.

The "C" speaker placement configuration effectively "widens" the sound field, and is suitable for movies and other video programs.

While the most basic speaker placement setup is recommended at first, by experimenting with different speaker placements for each musical or video source, and with each surround mode, you will be able to create a wide variety of sound field effects suited to your listening environment, and to you own particular tastes.

The supplied remote control transmitter is a "learning" remote control unit that allows for centralized control of various Audio/Visual equipment, solving the complicated problem of operating several remote controllers for your system.

NOTES
- If the indicators are only dimly lit when pressing a key, the batteries are weak. Replace the batteries.
- All memorized functions will be retained while you replace the batteries. However, if no batteries are installed for an hour, the memory will be erased and will have to be programmed again.

CONTROLS AND FUNCTIONS
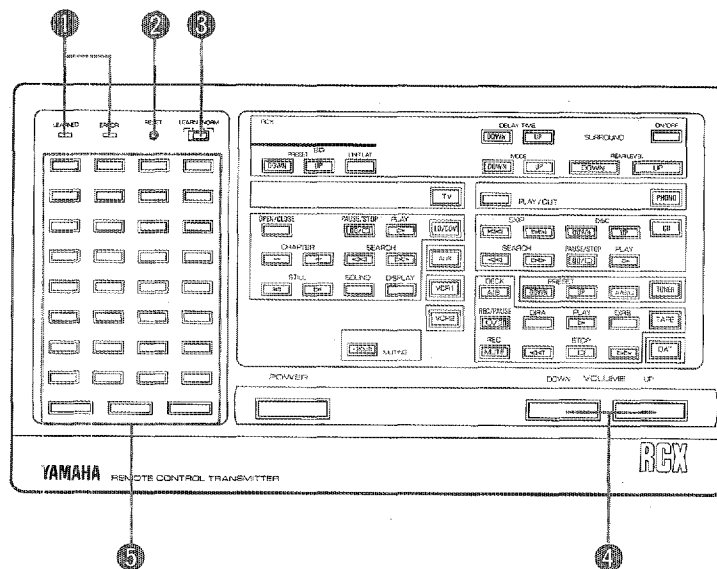
① LEARNED and ERROR indicators
These indicators show the operation mode of the remote control transmitter

② RESET button
Used to clear a programmed signal.

③ LEARN/NORM switch
This switch is used to select between LEARN (program) and NORM (contro modes.

④ VOLUME UP DOWN (preset/learning) keys
These keys have already been preset with signals for controlling volume up down.
However, if desired, other signals can be "learned" by these keys (over the preset signals), in the same way as for the ordinary learning keys.

⑤ Learning keys (35 keys)
These keys can be used to "learn" (program) signals from another remote controller.
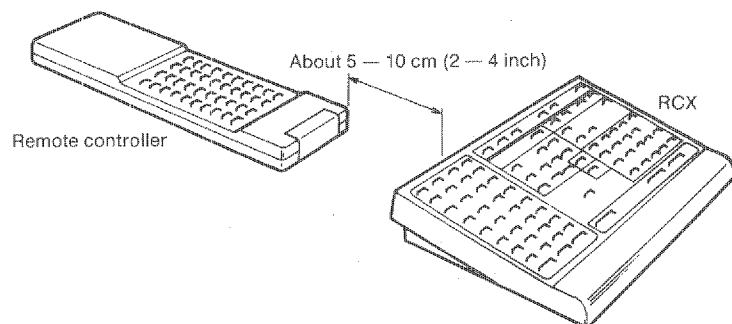
OPERATIONS

To program the signals of another remote controller in this RCX remote control unit, please follow the steps below.
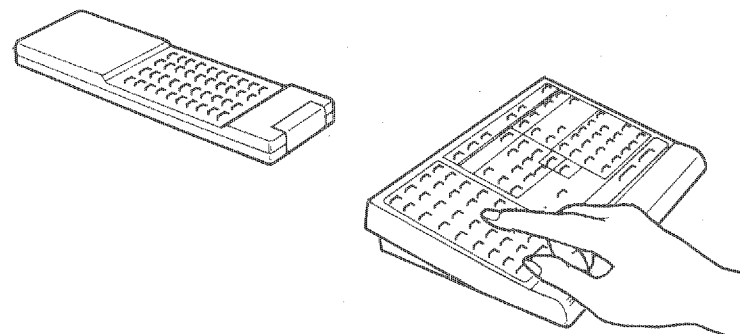1. Switch the LEARN/NORM switch to the LEARN position.

2. Position the RCX and the remote control unit to be memorized head to head.

3. Select and press the learning or preset/learning key on the RCX to be programmed.

The LEARNED indicator will flash for about 15 seconds. If the ERROR indicator lights up when the key is pressed, a signal has already been programmed in that key. If the programmed signal can be replaced, proceed to the next step.
If the programmed signal cannot be replaced, press another learning or preset/learning key on the RCX.
4. While the LEARNED indicator is flashing, press a key on the other remote controller.
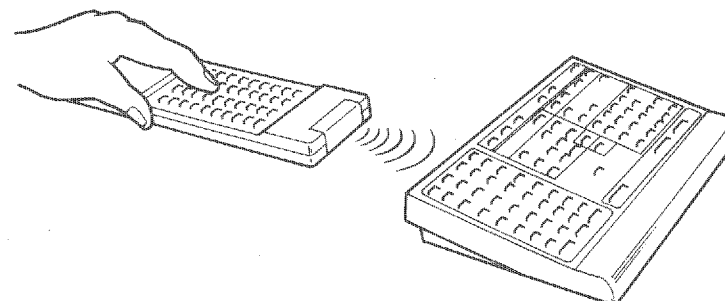
The LEARNED and ERROR indicators will light steadily while receiving the signal. Press the other remote controller's key until these indicators turn off. The LEARNED indicator will light for about 2 seconds when the memorization of a function is successfully completed.
The ERROR indicator will light for about 2 seconds when the memorization of a function is unsuccessful. In this case, please try again.

5. Repeat steps 3 and 4 until all programming is complete.
6. Once programming is complete, set the LEARN/NORM switch to the NORM position.

7. Use the supplied seals to indicate the functions for which the learning and preset/learning keys have been programmed.
   It is recommended that you first determine the best and most convenient layout of the keys for the various functions you plan to program and attach the seals accordingly, then program the keys correspondingly.

If programming is not carried out successfully, or if the remote control operation is not successful although programming was successful, check the following:
* Are the batteries of the other remote controller weak? In this case, even when the other remote controller can operate the unit, its signal strength is too weak for the RCX. Replace the batteries of the other remote controller.
* Is the distance to the other remote controller too small or too large, or are they not in line?
* Is a strong light, such as direct sunlight, incident on the RCX?
If the signal to be stored is too long.
When the signal to be stored is too long, the RCX automatically enlarges the work area capacity and stands by for a second entry. Please try the storage operation again.

TO ERASE A PROGRAMMED SIGNAL

To erase a signal programmed on a learning key or a preset/learning key, proceed as follows.
1. Set the LEARN/NORM switch to the LEARN position.
2. Press the RESET button.
   The LEARNED and ERROR indicators will flash for about 15 seconds.
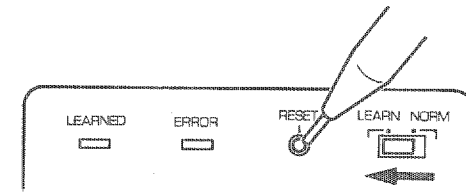
3. While the LEARNED and ERROR indicators are flashing, press the learnir or preset/learning key for which you want the programmed signal to be erased.
   The ERROR indicator will turn off, and then the LEARNED indicator will lig up for about 1 second to indicate the completion of the erasure.
   For the VOLUME UP/DOWN (preset/learning) keys, your programmed signal is erased and the originally preset signal resumes.
4. Repeat steps 2 and 3 for other keys, if necessary.

AUDIO SECTION

Input Sensitivity/Impedance

PHONO MM .... 2.5 mV/47 k-ohms
CD etc. .... 150 mV/47 k-ohms

Maximum Input Signal

PHONO MM, 1 kHz .... 80 mV

Output Level/Impedance

REC OUT .... 150 mV/470 ohms
FRONT OUT .... 1.5V/560 ohms
REAR OUT .... 1.5V/1.1 k-ohms

Headphone Jack Rated Output/Impedance .... 2V/100 ohms

Frequency Response

20 Hz to 20 kHz, CD etc. .... -3 ~ +1 dB

RIAA Equalization Deviation

PHONO MM .... ± 0.5 dB

Total Harmonic distortion

PHONO MM, 1V .... Less than 0.005%
CD etc. to Front, 3V .... Less than 0.005%

Signal to Noise Ratio (IHF-A Network)

PHONO MM (5 mV Input Shorted) .... More than 86 dB
CD etc. (Shorted) .... More than 96 dB

Residual Noise (IHF-A Network) .... 20 μV

Channel Separation (Vol. -30 dB, 1 kHz/10 kHz)

PHONO MM input shorted .... 65 dB
CD etc. input 5.1 k-ohms terminated .... 65 dB

Tone Control Characteristics

Bass

control range .... ± 10 dB (50 Hz)
turnover frequency .... 350 Hz

TREBLE

control range .... ±10 dB (20 kHz)
turnover frequency .... 3.5 kHz

MID

control range .... ±10 dB (1 kHz)
turnover frequency .... 1 kHz

Audio Muting .... -20 dB

Bass Extension (70 Hz) .... +7 dB

VIDEO SECTION

Video Input .... 1.0 Vp-p, 75 ohms, Unbalanced
Video Output .... 1.0 Vp-p, 75 ohms Unbalanced
Maximum Input Level .... 1.5 Vp-p, 75 ohms, Unbalanced
Video Singal-to-Noise Ratio .... More than 50 dB
S Video Input .... 1Vp-p, 75 ohms, Unbalanced (Input-Y (Luminance))
                          0.3 Vp-p, 75 ohms, Unbalanced (Input-C (Color))
S Video Output .... 1 Vp-p, 75 ohms, Unbalanced (Output-Y (Luminance))
                       0.3 Vp-p, 75 ohms, Unbalanced (Output-C (Color))

GENERAL
Power Supply
Europe Model .... AC 220V, 50 Hz
General Model .... AC 110/120/220/240V, 50/60 Hz
U.K. and Australia Models .... AC 240V, 50 Hz
USA and Canada Models .... AC 120V, 60 Hz
Power Consumption 20W
AC Outlets
Switched x 2 .... 100W max (Total).
(USA, Canada and General models)
Switched x 1 .... 100W max.
(Europe, U.K. and Australia models)
Unswitched x 1 .... 200W max.
(Except for U.K. model)
Dimentions (W x H x D) .... 435 x 95 x 336 mm
(17-1/8" x 3-3/4" x 13-1/4")
Weight .... 5 kg (11 lbs. 0 oz.)
Accessories .... Remote control cable (mini-plug) x 1
Remote control cable (5-pin) x 1
Remote control cable (6-pin) x 1
Video cord x 1
Audio cord x 1
Remote control transmitter (RCX) x 1
Battery (size "AA", R06) x 4
Seals and Tweezers

Specification subject to change without notice.

□□ DOLBY SURROUND ™
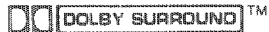
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Additionally licensed under one or more of the following patents: U.S. numbers
3,632,886, 3,746,792, and 3,959,590; canada numbers 1,004,603 and
1,037,877. "Dolby" and the double-D symbol are trademarks of Dolby
laboratories Licensing Corporation.

TROUBLESHOOTING

If the unit fails to operate normally, check the following points to determine whether the fault can be corrected by the simple measures suggested. If it cannot be corrected, or if the fault is not listed in the SYMPTOM column, disconnect the power cord and contact your dealer or service center for help.

SYMPTOM	CAUSE	REMEDY
The amplifier fails to turn on when the POWER switch is pressed.	● Power cord is not plugged in or is not completely inserted.	● Firmly plug in the power cord.
No sound.	● Incorrect output cord connections.	● Connect cord properly. If the problem persists, the cables may be defective.
	● Incorrect amplifier operation.	● Set the amplifier controls to the correct input selection.
Sound "hums".	● Incorrect cable connections.	● Firmly connect the audio plugs. If the problem persists, the cord may be defective.
No picture.	● Incorrect cord connections. ● Wrong video unit selected. ● Video unit not turned on.	● Connect the video plugs correctly. ● Select correct video unit. ● Turn video unit on.

YAMAHA

VH57140-0