

YAMAHA AVX-20

Natural Sound Stereo Amplifier

Amplificateur stéréo de la série "Natural Sound"

Natural Sound Stereoverstärker

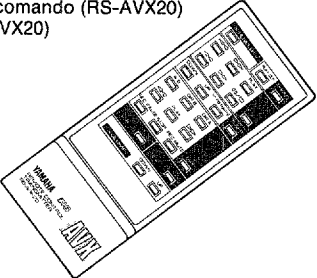
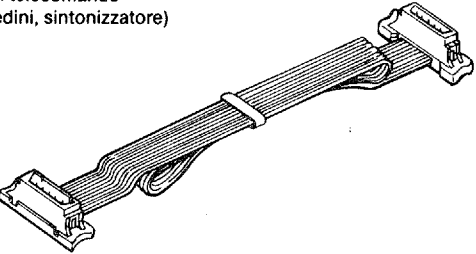
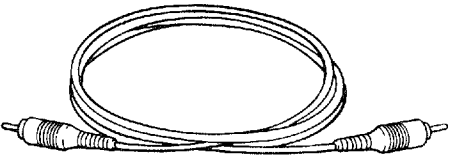
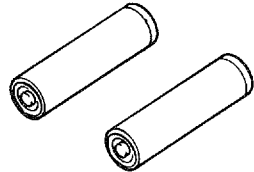
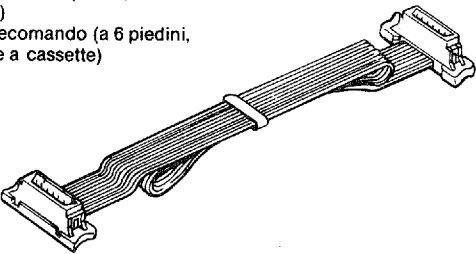
Natural Sound stereoförstärkare

Amplificatore stereo dal suono naturale

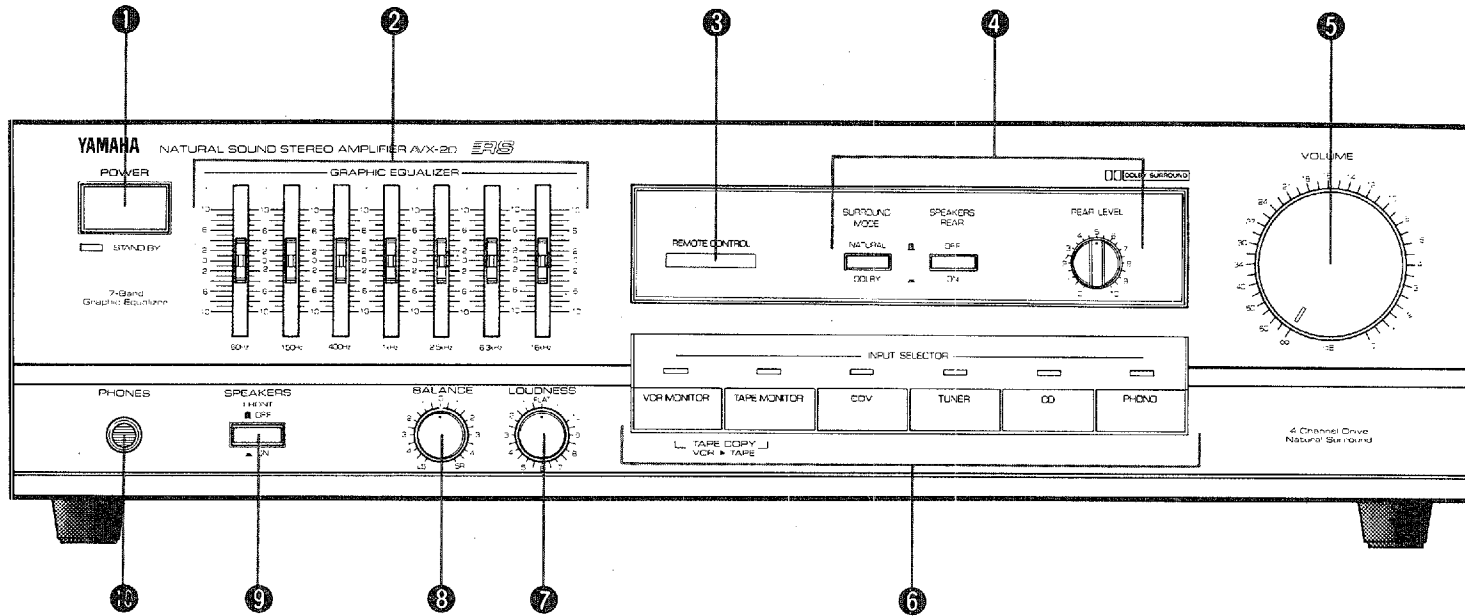
Amplificador estéreo de sonido natural

CENTER

OWNER'S MANUAL
MODE D'EMPLOI
BEDIENUNGSANLEITUNG
BRUKSANVISNING
MANUALE DELL'UTENTE
MANUAL DE INSTRUCCIONES

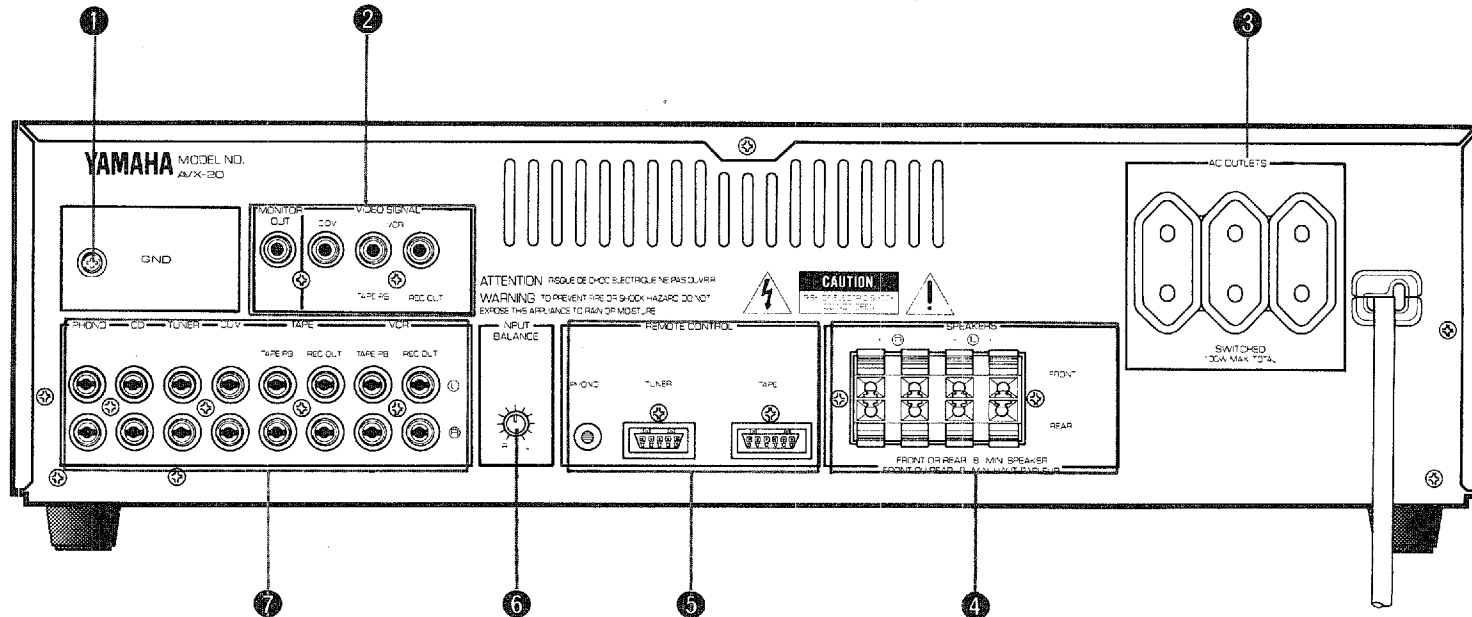
<p>Remote Control Transmitter (RS-AVX20) Émetteur de télécommande (RS-AVX20) Fernbedienungsgeber (RS-AVX20) Fjärrkontroll (RS-AVX20) Transmittitore di telecomando (RS-AVX20) Control remoto (RS-AVX20)</p> 	<p>Remote Control Cable (5-pin, tuner) Câble de télécommande (5 broches, syntoniseur) Fernbedienungskabel (5-pol., Tuner) Fjärrkontroll-sladd (5-stift, tuner) Cavo di telecomando (a 5 piedini, sintonizzatore)</p> 	<p>Remote Control Cable (mini-plug, turntable) Câble de télécommande (mini-prise, platine tourne-disque) Fernbedienungskabel (Ministecker, Plattenspieler) Fjärrkontroll-sladd (miniplugg, skivspelare) Cavo di telecomando (minispina audio, giradischi)</p> 
<p>Batteries (size "AA", R06) Piles (taille "AA", R06) Batterien (Größe "AA", R06) Batterier (storlek "AA", R06) Batterie (formato "AA", R06) Pilas (R06, tamaño "AA")</p> 	<p>Remote Control Cable (6-pin, cassette deck) Câble de télécommande (6 broches, platine à cassette) Fernbedienungskabel (6-pol., Kassettendeck) Fjärrkontroll-sladd (6-stift, kassettband-spelardäck) Cavo di telecomando (a 6 piedini, registratore a cassette)</p> 	

2 FRONT PANEL PANNEAU AVANT FRONTPLATTE
FRAMSIDA PANNELLO ANTERIORE PANEL DELANTERO



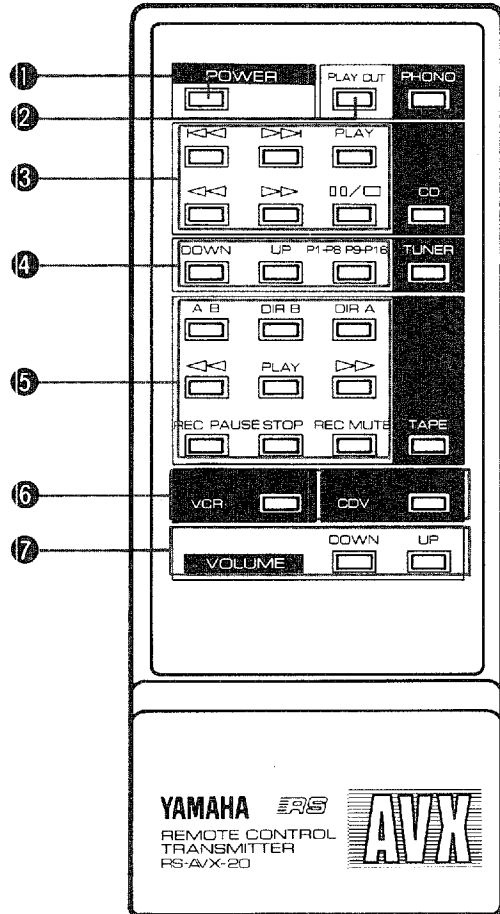
Europe Model
 Modèle pour l'Europe
 Europa-Modell
 Europeisk-modell
 Modello per l'Europa
 Modelo para Europa

REAR PANEL PANNEAU ARRIERE RÜCKPLATTE
BAKSIDA PANNELLO POSTERIORE PANEL TRASERO

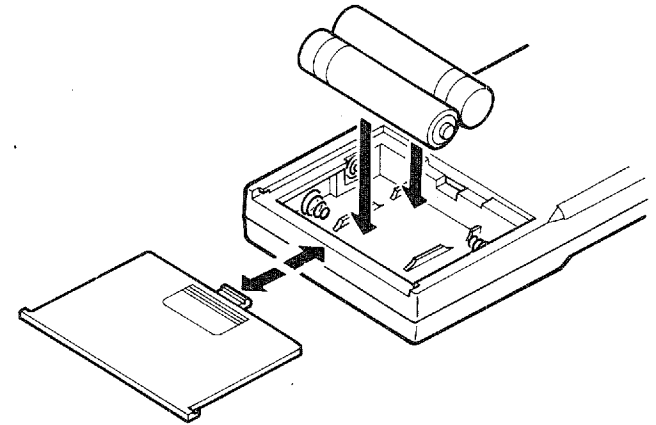


Europe Model
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 Europa-Modell
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 Modello per l'Europa
 Modelo para Europa

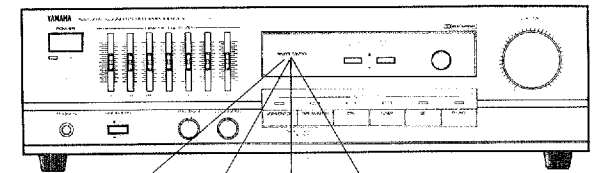
3 REMOTE CONTROL TRANSMITTER
 EMETTEUR DE TELECOMMANDE
 FERNBEDIENUNGSGEBER
 FJÄRRKONTROLL-SÄNDARE
 TRASMETTITORE DEL TELECOMANDO
 CONTROL REMOTO



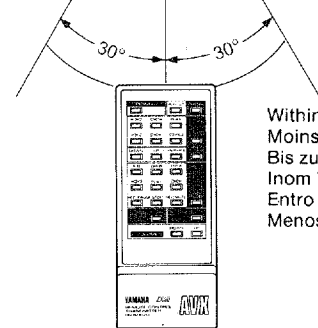
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5

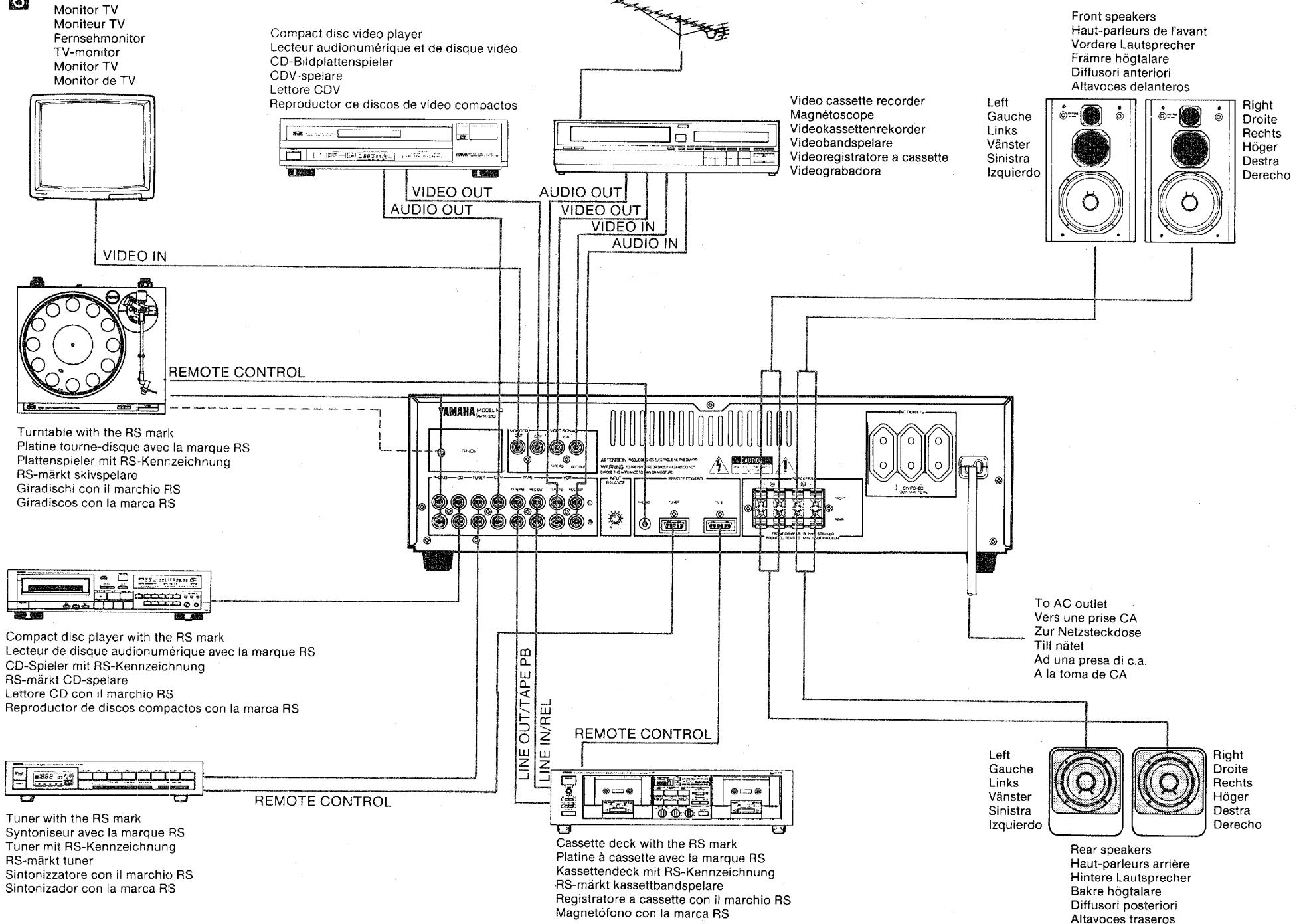


REMOTE CONTROL sensor
 Détecteur de télécommande
 REMOTE CONTROL-Sensor
 Fjärrkontrollsensor
 Sensore del telecomando
 (REMOTE CONTROL)
 Sensor del control remoto

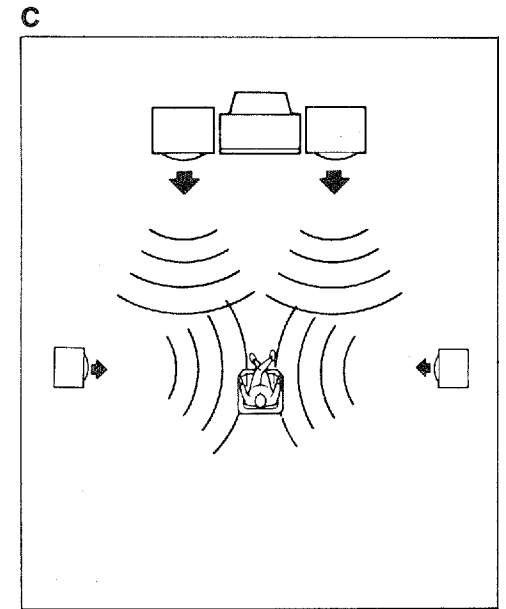
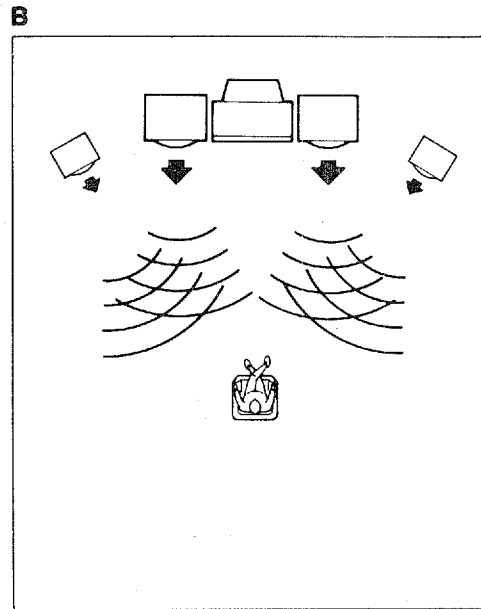
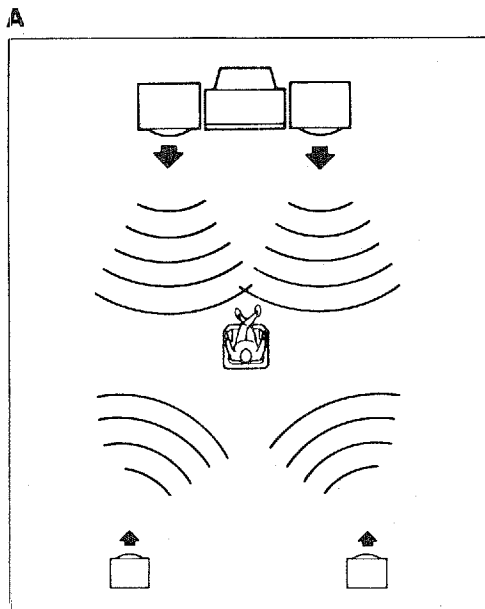


Within 7m (23 feet)
 Moins de 7m
 Bis zu 7m
 Inom 7 meter
 Entro 7 metri
 Menos de 7 mts

6



7 REAR SPEAKER PLACEMENT
EMPLACEMENT DES HAUT-PARLEURS ARRIERE
AUFSTELLUNG DER HINTEREN LAUTSPRECHER
UPPSTÄLLNING AV BAKRE HÖGTALARE
POSIZIONE DEI DIFFUSORI POSTERIORI
UBICACIÓN DE ALTAVOCES TRASEROS



● Thank you for purchasing the YAMAHA AVX-20 stereo amplifier.

CAUTION: READ THIS BEFORE OPERATING YOUR AVX-20

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, vibration, dust, moisture, and cold. Avoid sources of hum (transformers, motors, etc.). To prevent fire or electric shock, do not expose to rain and water.
3. Do not operate the amplifier upside-down. The unit may over heat, resulting in damage and unit failure.
4. Never open the unit. If an object falls into the unit, contact your service center.
5. Do not place records or other obstructing objects on the amplifier, this will block the ventilation holes. This will cause the internal temperature to rise and may result in unit failure.
6. Do not force switches, knobs, or cords. When moving the set, first turn the power to OFF. Then gently disconnect all plugs and cords attached to other equipment. Never pull on the cord, always pull on the plug.
7. Do not clean the unit with chemical solvents; this may damage the finish. Use a clean, dry cloth.

8. Be sure to read the TROUBLESHOOTING section on common operating errors before concluding that the unit is faulty.

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. Voltage selector (General model only)
The voltage selector switch on the rear panel of this unit must be set for your local mains voltage before plugging in the AC main supply.

WARNING

TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

Special Instructions for U.K. model

IMPORTANT

The wire 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 of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows: The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK. The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

SUPPLIED ACCESSORIES

(See Fig. 1.)

After unpacking, check that the following parts are included.

- Remote control transmitter
- Batteries
- Remote control cable (5-pin)
- Remote control cable (6-pin)
- Remote control cable (mini-plug)

CONTROLS AND THEIR FUNCTIONS

(See Fig. 2.)

FRONT PANEL

1 POWER switch

Press this switch to turn the power on. The power indicator on the volume control lights. Press the switch again to turn the power off.

STAND BY indicator (for Europe and U.K. models)

Pressing the POWER switch lights the STAND BY indicator and power indicator on the VOLUME control. In this state, the unit can be operated with the control on the front panel or with the remote control transmitter.

To turn off the power, press the POWER switch on the unit. The STAND BY indicator and the power indicator on the VOLUME control will go out.

When the POWER key on the remote control transmitter is pressed, instead of the POWER switch, the power indicator on the VOLUME control will go out and the STAND BY indicator will remain lit. In this state, pressing the POWER key turns power on. To turn off the power completely, press the POWER switch on the unit.

2 GRAPHIC EQUALIZER controls

These seven independent slide controls are used to tailor, each over a ± 1 dB range, the overall output frequency response of the amplifier. The seven controls cover the complete audible sound spectrum and are centered on 60 Hz, 100 Hz, 400 Hz, 1 kHz, 2.5 kHz, 6.3 kHz and 16 kHz frequencies. To set these controls properly, first the LOUDNESS control must be set to 0 and the VOLUME control set to the desired listening level.

To increase a specific frequency response (boost), slide the control upward (toward the "+" direction). To decrease a specific frequency response (cut), slide a control downward (toward the "-" direction).

3 REMOTE CONTROL sensor and indicator

This is used to receive signals from the remote control transmitter.

4 SURROUND PROCESSING MODE controls

These controls are used to implement the following surround sound feature:
NATURAL/DOLBY selector

Use this selector to set the surround mode according to the source played.

● DOLBY surround

Set to this position when playing the program source having a "DOLBY SURROUND" marking.



* Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally 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 1,037,887. "Dolby" and the Double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

● **NATURAL surround**

When the NATURAL/DOLBY selector button is in the NATURAL position, natural surround effects can be reproduced from original stereo sources, using YAMAHA's original surround sound processor circuit.

● **REAR SPEAKERS ON/OFF switch**

This button turns the rear speaker signal outputs ON/OFF. Set this switch to the OFF position when listening to normal 2-channel stereo sound without reverberation effect or when listening to monaural sources. The rear speaker signals are not output.

For the reverberation effect set this switch to the ON position when listening to either DOLBY or NATURAL surround sources. The rear speaker signals are output.

● **REAR LEVEL control**

This control is used to raise or lower the output volume level of the rear speakers.

⑤ **VOLUME control and power 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. It acts as the master volume control: increasing or decreasing the signal level to both the front and rear speaker pairs. The built-in indicator lights when the POWER switch is set to ON.

⑥ **INPUT SELECTOR switches and indicators**

Used to select the audio or video source to be heard and watched.

● **CDV, TUNER, CD, PHONO audio switches**

Use these buttons to select either the compact disc video player (CDV), tuner (TUNER), compact disc player (CD), or turntable (PHONO). The corresponding indicator will light. Of these four sources, only one may be selected at a time.

Note

If the CDV is playing, its video signal is always output to the MONITOR OUT terminal regardless of which audio switch is selected. However, if the VCR MONITOR function is activated the playing VCR's video signal will be output.

● **VCR MONITOR switch**

Press this switch once to monitor the VCR's audio and video signals. When it is activated its indicator will light. Pressing the switch once more will deactivate the VCR MONITOR function and its indicator will go out.

Note

The VCR MONITOR has priority over the CDV video signal and the CDV, TUNER, CD, and PHONO audio signals. Therefore, when the VCR MONITOR function is activated the VCR video and audio signals will be monitored regardless of any other activated source. (Except TAPE MONITOR. See below.)

● **TAPE MONITOR switch**

Press this switch once to monitor the tape deck's audio signal. When it is activated its indicator will light. Pressing the switch again will deactivate the TAPE MONITOR function and its indicator will go out.

Note

The TAPE MONITOR has priority over the CDV, TUNER, CD, PHONO, and even the VCR audio signals. Therefore, when the TAPE MONITOR is activated the tape deck's audio signals will be heard regardless of any other activated source. The video signals are not affected, however.

⑦ **LOUDNESS control**

This control provides a continuously variable control, over a 0 (FLAT) to -20 dB(1 kHz) range, of the loudness response of the amplifier. The human ear has reduced sensitivity to extremely low and high frequencies at low volume levels. The LOUDNESS control is used to compensate for this by lowering the volume of the mid-range frequencies over a continuously variable range to maintain proper tonal perspective when listening at low volume levels. To use this correctly, turn the control to FLAT and then set the VOLUME control to your loudest desirable listening level. Then turn the loudness control counterclockwise to reduce the overall volume while still retaining the natural balance of the high and low frequencies.

⑧ **BALANCE control**

This control adjusts the relative volume levels of the left and right speakers. Rotating the control to the R (clockwise) direction shifts the sound image to the right. Conversely, rotating the control to the L (counterclockwise) direction shifts the sound image to the left. Use this control to compensate for unbalanced listening conditions due to furniture arrangement, speaker placement, etc. Set this control to 0 for equal volume from left and right channels.

⑨ **SPEAKERS switch**

This switch is used to control the speaker output. To listen to the connected speakers, set this switch to ON. If sound from the speakers is not desired (when using headphones, for example) set this switch to OFF.

⑩ **Head PHONES jack**

Insert the headphone plug into this jack for private listening. To cut off output from the speakers, set the SPEAKERS switch to OFF.

■ **REAR PANEL**

① **GND terminal**

Connect the ground wire of a turntable.

② **VIDEO SIGNAL jacks**

Use these to connect the video signal cords from your components to the amplifier. They should be connected to the proper input/output jacks for each unit.

MONITOR OUT

Connect to the video in jack of a video monitor.

CDV

Connect the video out jack of a CDV player to this jack.

VCR

Connect a video recorder to these jacks for both recording and playback.

③ **AC OUTLETS**

(Europe and General models: 3 SWITCHED OUTLETS)

(Australia and U.K. models: 1 SWITCHED OUTLET)

Use these to connect the power cords from other 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 only when the amplifier's power is ON. The total maximum power consumption of the components attached to these outlets must not exceed 100 watts.

④ **SPEAKERS terminals**

Connect speakers to these terminals. See the Connections section of this manual for details on speaker connections.

⑤ **REMOTE CONTROL connectors**

Use these to connect compatible YAMAHA components tuner, turntable, a cassette deck bearing the RS mark to your amplifier for remote control of a component.

PHONO

Connect to a turntable using a cable with mini-plug connectors.

TUNER

Connect to a tuner using a cable with 5-pin connectors.

TAPE

Connect to a cassette tape deck using a cable with 6-pin connectors.

⑥ **INPUT BALANCE**

Use this control to set the input balance level for the best surround listening condition. Disconnect the front speakers and adjust this control so that the center sound image of the rear speakers is minimal. For normal operation set this control to the center setting. Turning the control towards R (counterclockwise) decreases the left channel's input level. Turning the control towards L (clockwise) decreases the right channel's input level. Setting the control in the center position will not affect the balance of the input signals.

⑦ **Audio signal connection jacks**

Use these to connect the audio signal cords from your components to the amplifier. They should be connected to the proper input/output jacks for each unit. Be sure to observe the proper polarity. That is, connect the right channel of the amplifier to the corresponding right channels of the component, etc.

PHONO

Connect a turntable.

CD

Connect a compact disc player.

TUNER

Connect a tuner.

CDV

Connect an audio signal of the CDV player.

TAPE

Connect a tape deck for both recording and playback.

VCR

Connect the audio portion of a VCR to these jacks for audio recording and playback.

■ REMOTE CONTROL TRANSMITTER (See Fig. 3.)

① POWER key

Press this key to turn the power of amplifier ON and OFF.

② PLAY/CUT key

This key is used to control the start and stop operations of a turntable bearing the RS mark.

③ CD control keys

The CD player bearing the RS mark can be controlled directly with the remote control transmitter.

◀◀ key

Press to return to the beginning of the current tune. When this key is pressed at the beginning of the tune, the play will start at the beginning of the previous tune.

▶▶ key

Press to advance to the beginning of the next tune.

PLAY key

Press this key to start play.

◀◀ key

Press this key to play the tune in reverse at high speed.

▶▶ key

Press this key to play the tune forward at high speed.

□□/□ key

Used to set the CD player to pause or stop mode. Pressing the key once to stop play temporarily and pressing it again stops play.

④ Tuner (bearing the RS mark) preset keys

These keys are used to select the broadcast station preset on the tuner connected to this unit.

DOWN key

Press to select the broadcast station preset on the tuner. Each time this key is pressed, the preset number is decreased by one. (Ex: P4 → P3) When the key is pressed while the P1 (P9) station is selected, the preset number will be changed to P8 (P16).

UP key

Press to select the broadcast station preset on the tuner. Each time this key is pressed, the preset number is increased by one. (Ex: P7 → P8) When the key is pressed while the P8 (P16) station is selected, the preset number will be changed to P1 (P9).

P1-8/9-16 key

Each time this key is pressed, the preset station range is changed between P1-8 and P9-16 alternately.

⑤ Tape deck function keys

These keys are used to operate the cassette deck bearing the RS mark connected to this unit.

A/B key

Press to select the deck to be operated; either deck A or B on the double cassette deck.

DIR B key

Press to change the play direction of tape deck B.

DIR A key

Press to change the play direction of tape deck A.

◀◀ key

Press to rewind the tape.

PLAY key

Press to start tape play or to begin recording from the record/pause mode. When the double cassette deck is used, pressing the key starts tape play on the last deck played.

▶▶ key

Press to fast forward the tape.

REC/PAUSE key

Press to set to record/pause mode.

STOP key

Press to stop the tape.

REC MUTE key

Press to make a blank section during recording.

⑥ Input selector keys

Press these keys to select the corresponding input source (PHONO, CD, TUNER, TAPE, VCR or CDV).

⑦ VOLUME control keys

These keys are used to adjust the volume level heard from the speakers connected to this unit. The UP key increases the volume. The DOWN key decreases the volume.

USING THE REMOTE CONTROL TRANSMITTER

The remote control transmitter supplied with your amplifier is designed to control all the most commonly used features of the amplifier. If the CD player, tuner, turntable and cassette deck connected to your AVX-20 are YAMAHA components designed for remote control compatibility, (CD player, tuner, turntable, cassette deck with the RS mark), then this remote control transmitter will also control various 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 will directly operate any compatible YAMAHA CD player.

■ BATTERY INSTALLATION (See Fig. 4.)

The remote control unit uses 2 batteries (size "AA", R06). Install them according to the illustration. Be sure that they are installed correctly.

■ BATTERY REPLACEMENT

When the remote control operating distance becomes short, the batteries are weak. Replace the two batteries with new ones.

Battery cautions

Incorrect use of a battery may cause leakage or an explosion. Be careful of the following items:

When replacing:

- Replace only with "AA" (R06) batteries.
- Place the batteries in correct (+) and (-) polarities as indicated in the battery compartment.
- Do not use an old battery with a new one.
- Do not use different kinds of batteries (alkaline, heavyduty, manganese, Ni-Cad, etc.) at the same time.

Care of the remote control transmitter:

- When the remote control transmitter will not be used for an extended period of time, remove the batteries.
- Replace weak batteries early.

To prevent accidents:

- Never disassemble, heat, or throw a battery into a fire. Dispose of batteries in specified places.
- Never connect (short) the (+) and (-) terminals directly with a metal piece of wire, etc.
- There are two kinds of batteries on the market; rechargeable and non-rechargeable. Carefully read all caution labels on the batteries.

In case of leakage:

Wipe off the electrolyte in the battery compartment completely before installing new batteries.

■ OPERATION RANGE (See Fig. 5.)

The remote control unit should point toward the amplifier and be within 7 meters (23 feet) and 30 degrees to the perpendicular of the amplifier for proper operation.

CONNECTIONS

(See Fig. 6.)

■ NOTES ON CONNECTIONS

- Be sure to turn off the power to all units before making any connections.
- Be sure to observe the proper polarity when connecting all stereo components. That is, connect the right channel of the AVX-20 to the corresponding right channels of the component, etc.

■ TURNTABLE

Connect the output cords of the turntable to the PHONO jacks, and connect the ground cord to the GND terminal. This should produce minimum hum, but in some cases better results are obtained with this cord disconnected.

■ COMPACT DISC PLAYER

Connect the output jacks of the compact disc player to the CD jacks.

■ TUNER

Connect the output jacks of the tuner to the TUNER jacks.

■ CDV PLAYER

Connect the video output jack from a CDV player to the VIDEO SIGNAL CDV jack.

Connect the audio output jacks from a CDV player to the CDV jacks.

■ TAPE DECK

Connect the cords from a cassette deck to the TAPE jacks. The playback (LINE OUT) jacks of the tape deck go to the TAPE PB jacks, and the record (LINE IN) jacks of the tape deck go to the REC OUT jacks.

■ VCR

Connect the video jacks of a video cassette recorder to the VIDEO SIGNAL VCR jacks. The playback (VIDEO OUT) signal of a VCR goes to the VCR TAPE PB jack, and the record signal (VIDEO IN) of a VCR goes to the VCR REC OUT jack.

Connect the audio output jacks of a video cassette recorder to the VCR jacks. The playback (AUDIO LINE OUT) jacks of the VCR go to the VCR TAPE PB jacks, and the record (AUDIO LINE IN) jacks go to the VCR REC OUT jacks.

■ MONITOR OUT

Connect the video jack from a monitor to the MONITOR OUT jack. Note that the audio connections to the monitor are not necessary as the audio portion of the signal is sent to your speakers through the amplifier.

■ REMOTE CONTROL CABLE

The REMOTE CONTROL connectors are used when you have YAMAHA compatible components (tuner, turntable, cassette deck bearing the RS mark). These connections allow you to control the components with the supplied remote control transmitter.

Connect the remote control cables from the components to the correct connectors on your amplifier (i.e. PHONO, TUNER, TAPE). Note that no cable is necessary for a compatible CD player as the remote control transmitter operates the player directly.

■ SPEAKERS

Connect the SPEAKERS terminals to your front and rear speakers with the proper gauge of wire, cut to be as short as possible. Press the speaker wire terminal tabs down, then insert the bare wires and secure them by releasing the tabs. If these connections are faulty, no sound will be heard from the speakers. Make sure that the polarity of the speaker wires is correct, that is, that the + and - markings of both the amplifier and speakers are observed. If these wires are reversed (reversed polarity), the sound will be unnatural and will lack bass (out of phase). Do not coil up excess speaker wire or bundle the speaker wires with the power cords.

■ POWER CORDS

Connect the power cord of your AVX-20 to an AC outlet. Connect the power cords of your tuner, cassette deck, and other components to the SWITCHED AC OUTLET(S) (Europe and general models: 3 SWITCHED OUTLETS, U.K. and Australia models: 1 SWITCHED OUTLET) to automatically turn them 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.

Make sure that the power cords are not tied together with the input/output cords or the speaker wires.

- When selecting program sources with the INPUT SELECTOR switches, keep in mind the priority of the selected input sources.

Audio priority: 1) TAPE MONITOR, 2) VCR MONITOR, 3) CDV, TUNE CD or PHONO.

For example, the priority "1" source (tape deck) will be heard regardless what other input sources (priorities 2 or 3) are selected. Thus, if a priority source is desired, the TAPE MONITOR, priority "1", and the VCR MONITOR, priority "2", must not be activated.

Video priority: 1) VCR MONITOR, 2) CDV.

In this case, if the VCR MONITOR is activated, the VCR's video signal will be visible on the TV/monitor even if the CDV selector is also activated.

■ TO PLAY A PROGRAM SOURCE

1. Set the VOLUME control at minimum.
 2. Press the POWER switch.
 3. For video sources, turn the TV/monitor ON.
 4. Select the program source to be heard or watched with the INPUT SELECTOR switches.
 5. Play the program source.
 6. Adjust the VOLUME control.
 7. Adjust the GRAPHIC EQUALIZER controls as desired.
- For details of the surround mode, refer to "USING THE SURROUND PROCESSOR" on page 15.

■ TO RECORD A PROGRAM SOURCE ONTO AUDIO/VIDEO TAPE

1. Set the VOLUME control at minimum.
2. Press the POWER switch.
3. Select the program source to be recorded with the INPUT SELECTOR switches.
4. Play the program source to be recorded and set the tape deck or video cassette recorder to record mode.

Note

- It is not possible to record the cassette deck's audio signal onto the VCR.
- The settings of the surround mode selector, VOLUME control or equalizer do not affect the recording.

■ TO DUB VIDEO SOURCE AUDIO SIGNALS ONTO AUDIO TAPES

1. Set the VOLUME control at minimum.
2. Press the POWER switch to ON.
3. Activate the selector of the video source (VCR or CDV) whose audio signals are to be recorded.
4. Set the video source to play mode and set the tape deck to record mode.
5. The audio portion of the video source will be recorded onto the audio tape. The settings of the SURROUND PROCESSING MODE controls, VOLUME control or equalizer do not affect the dubbing.

■ TO RECORD THE CDV VIDEO SIGNAL AND THE CD, TUNER OR PHONO AUDIO SIGNALS WITH THE VCR

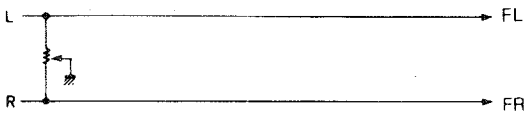
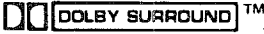
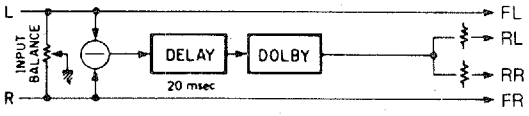
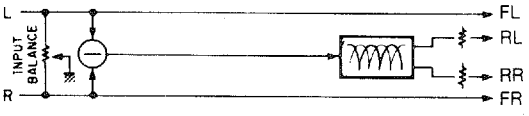
With the AVX-20 it is possible to record with the VCR, the combination of the CDV's video signal and the audio signal of any one of the connected components (except the tape deck). For example, you can record the video signal of the CDV and the audio signal of the CD player onto a VCR tape.

1. Set the VOLUME control at minimum.
2. Press the POWER switch to ON.
3. Make sure the TAPE MONITOR and VCR MONITOR selectors are not activated.
4. Select the desired audio program source to be recorded with the INPUT SELECTOR. You may select either CD, PHONO or TUNER. If CDV is selected, both the audio and video signals of the CDV will be recorded with the VCR.
5. Set the VCR to the record-pause mode.
6. Play the CDV and audio program source to be recorded and simultaneously start recording with the recording VCR. The settings of the SURROUND PROCESSING MODE controls, VOLUME control or equalizer do not affect the dubbing.

USING THE SURROUND PROCESSOR

This unit incorporates a sophisticated, multi-mode surround processing circuitry which allows you to expand the audio sound field for a theater-like experience in the listening/viewing room.

- The surround processor in this unit is effective only when the unit is used in a 4-speaker system setup.

Source		Position	Signal processing routes	Rear speaker output
All sources including monaural		REAR SPEAKERS OFF		The rear speaker signals are not output.
Stereo sources	 DOLBY SURROUND™ For video programs with the Dolby Surround mark.	DOLBY surround		Dolby surround decoder reverberation components are delayed, and output via the rear, left and right speakers.
	Video/Sound Sports programs	NATURAL surround		Reverberation components are divided between the rear, left and right speakers by comb filter. This results in a naturally expansive sound with a broad band.

When replaying mono sources in the DOLBY SURROUND or NATURAL SURROUND positions, no sound is heard from the rear speakers.

- FL: Front left speaker output
- FR: Front right speaker output
- RL: Rear left speaker output
- RR: Rear right speaker output

■ REAR SPEAKER PLACEMENT (See Fig. 7.)

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 theater-like 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 your own particular tastes.

■ DOLBY surround

With a great number of movies made today, the sound track is specially encoded with the Dolby surround mode for playback in movie theaters equipped with Dolby surround processing sound systems. This is responsible for the incredibly lifelike effect you experience at movie theaters: while dialogue comes at you from the front speakers, sound effects, background noise, and other ambient noise in the sound track comes at you from behind as well. You are literally surrounded in sound.

Dolby surround is encoded on the sound track of commercially available video cassettes and video discs as well. When you play tapes encoded with Dolby surround on your home video system, the Dolby surround mode on this unit decodes the signal and feeds the sound effects, background noise, ambient noise, etc. through your rear speakers so the same surround effect experienced in the theater is experienced in your living room as well.

The Dolby surround mode will have no effect on video sources not encoded with Dolby surround.

■ NATURAL surround

The Natural Surround is an exclusive YAMAHA surround processing mode which is effective with all music and video sources. It creates a natural, lifelike surround effect without the use of delay circuitry, adding considerable depth and imaging to all audio sources. It is recommended for both music listening and for viewing stereo video sources.

Note

If a monaural sound source is used in the DOLBY or NATURAL surround modes, no sound will be heard from the rear speakers.

● REAR SPEAKERS ON

When the switch is set to ON, surround processing is in effect.

● REAR SPEAKERS OFF

When the switch is set to OFF, no surround processing is in effect.

OPERATION

1. Play the program source.
2. Select the surround mode with the NATURAL/DOLBY selector.
3. Set the REAR SPEAKERS switch to ON.
4. Adjust the REAR LEVEL control.
5. Use the VOLUME control to adjust the overall sound level.

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 AVX-20 fails to turn on when the POWER switch is pressed.	<ul style="list-style-type: none"> ● Power cord is not plugged in or is not completely inserted. 	<ul style="list-style-type: none"> ● Firmly plug in the power cord.
No sound.	<ul style="list-style-type: none"> ● Incorrect output cord connections. 	<ul style="list-style-type: none"> ● Connect cord properly. If the problem persists, the cables may be defective.
	<ul style="list-style-type: none"> ● Incorrect amplifier operation. 	<ul style="list-style-type: none"> ● Paying close attention to source priority, set the AVX-20 controls to the correct input selection.
Humming sound.	<ul style="list-style-type: none"> ● Incorrect cord connections. 	<ul style="list-style-type: none"> ● Firmly connect the audio plugs. If the problem persists, the cord may be defective.
No picture.	<ul style="list-style-type: none"> ● Incorrect cord connections. ● Wrong video unit selected. ● Video unit not turned on. 	<ul style="list-style-type: none"> ● Connect the video plugs correctly. ● Select correct video unit. ● Turn video unit on.

SPECIFICATIONS

AUDIO SECTION

Minimum RMS Output Power per Channel	
Front: 8 ohms, 20 Hz to 20 kHz, 0.05% THD	100W 80W (Europe model)
8 ohms, 1 kHz, 0.1% THD	115W
Rear: 8 ohms, 1 kHz, 0.9% THD	15W
Dynamic Power per Channel	
(IHF, 8 ohms)	145W (General model) 120W (Europe, Australia and U.K. models)
(IHF, 6 ohms)	180W (General model) 150W (Europe, Australia and U.K. models)
(IHF, 4 ohms)	240W (General model) 190W (Europe, Australia and U.K. models)
DIN Standard Output Power Per Channel	
(1 kHz, 1% THD, 4 ohms)	115W
Dynamic Headroom	
8 ohms	1.6 dB
IEC Power (1 kHz, 0.01% THD, 8 ohms)	85W
Damping Factor (8 ohms, 1kHz)	50
Input Sensitivity/Impedance	
PHONO	2.5 mV/47 k-ohms
AUDIO (CD/TAPE/TUNER/AUX/CDV/VCR/ ACCESSORY)	150 mV/47 k-ohms (General model)
VIDEO (CDV/VCR)	1 Vp-p/75 ohms
Input Sensitivity (New IHF)	
PHONO	0.25 mV (General model)
CD/TAPE/TUNER/AUX/CDV/VCR	15 mV (General model)
Maximum Input Level (1 kHz)	
PHONO (0.02% THD)	80 mV
Output Level/Impedance	
REC OUT	150 mV/470 ohms
Frequency Response (20 Hz to 20 kHz)	
CD/TAPE/TUNER/AUX/CDV/VCR	±0.5 dB
RIAA Equalization Deviation	
PHONO	±0.5 dB

Total Harmonic Distortion (20 Hz to 20 kHz)

PHONO (3 V)	0.009%
CD/TAPE/TUNER to SP OUT (50W/8 ohms)	0.02%
Signal to Noise Ratio (IHF-A Network)	
PHONO (5 mV Input Shorted)	79 dB
CD/TAPE/TUNER/CDV/VCR (Shorted)	100 dB
Signal to Noise Ratio (New IHF)	
PHONO	75 dB
CD/TAPE/TUNER/AUX/CDV/VCR	80 dB
Power Band Width (0.1% THD, 50W, 8 ohms)	10 Hz — 60 kHz
Headphones Jack Rated Output/Impedance	
(0.05% THD, 8 ohms)	0.81V/270 ohms 0.73V/270 ohms (Europe model)
Input Equivalent Noise	125 dBV (Europe, Australia and U.K. models)
Residual Noise	
(IHF-A Network)	250 μ V (General model)
Channel Separation	
PHONO Input Shorted (1 kHz/10 kHz)	70 dB/60 dB
CD/TAPE Input 5.1 k-ohms Terminated (1 kHz/10 kHz)	70 dB/60 dB
Graphic Equalizer (boost/cut, 60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.5 kHz, 6.3 kHz, 16 kHz)	
	±12 dB
Continuous Loudness Control (Level related equalization)	-20 dB
Gain tracking error (0 — -60 dB)	2 dB

GENERAL

Power Requirements

Europe model	220V, 50 Hz
Australia and U.K. model	240V, 50 Hz
General model	110/120/220/240V, 50/60 Hz

Power Consumption

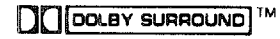
	360W (General models)
	450W (Europe, Australia and U.K. models)

AC Outlets

Switched x 3	100W MAX TOTAL (Europe and General models)
Switched x 1	100W MAX (Australia and U.K. models)

Dimensions (W x H x D) 435 x 122.5 x 300.5 mm
(17-1/8" x 4-13/16" x 11-7/8")
Accessories Remote control transmitter x 1
Battery x 2
Remote control cable (5-pin) x 1
Remote control cable (6-pin) x 1
Remote control cable (mini-plug) x 1
Weight 7.5 kg
(16 lb. 8 oz.)

Specifications subject to change without notice.



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