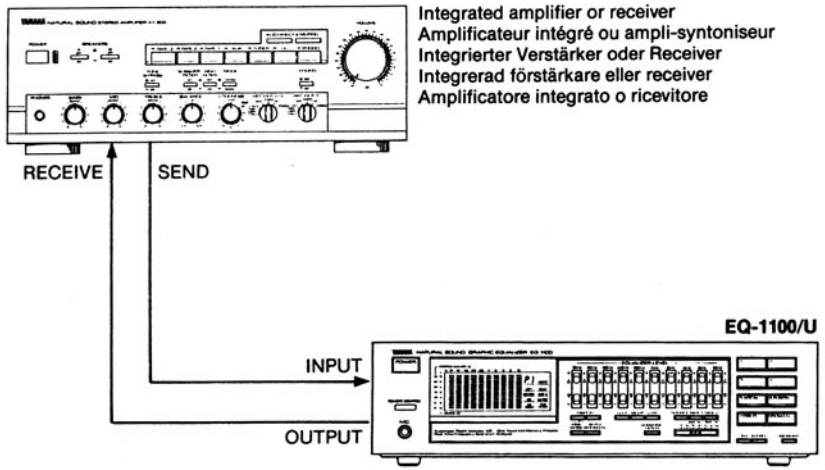
YAMAHA EQ-1100/U

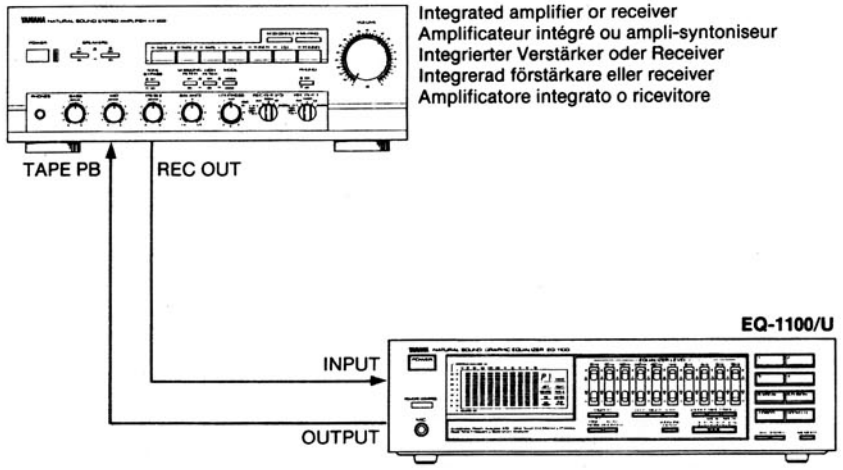
Natural Sound Stereo Graphic Equalizer
Egaliseur graphique stéréo de la série "Natural Sound"
"Natural Sound" Graphic Equalizer
Natural Sound grafisk ekvalisator
Equalizzatore grafico "Natural Sound"

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

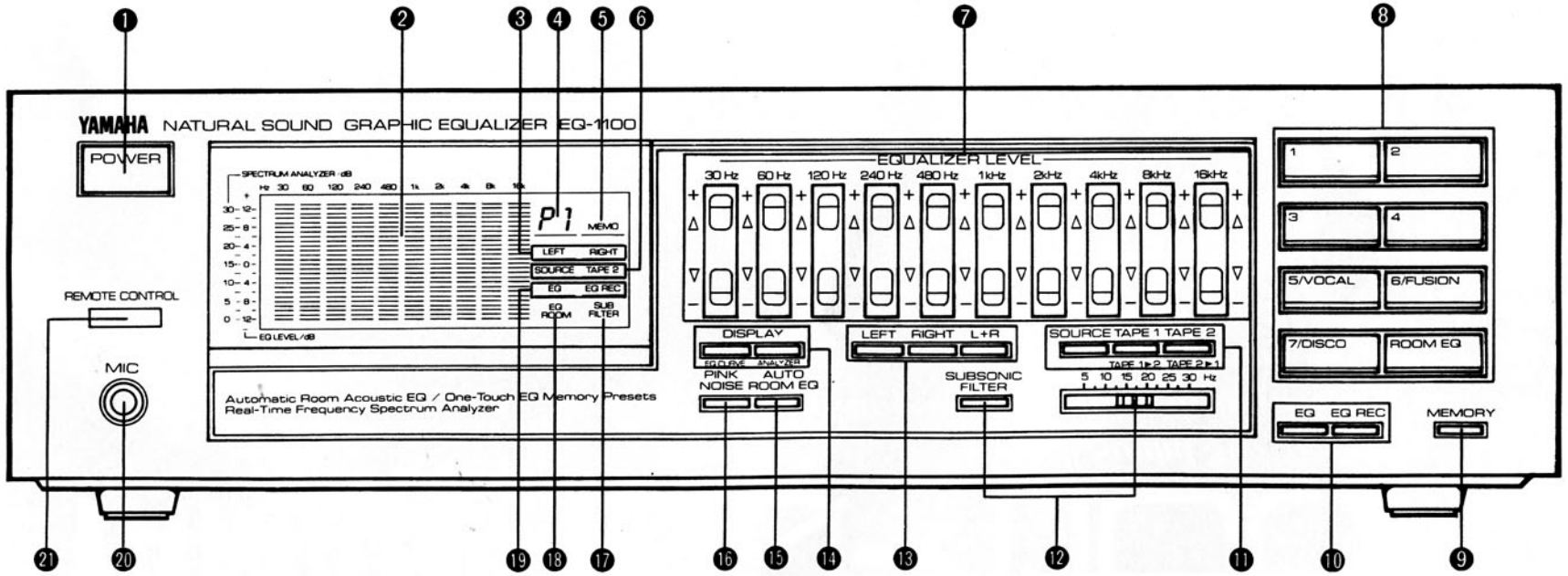
2


Integrated amplifier or receiver
Amplificateur intégré ou ampli-syntoniseur
Integrierter Verstärker oder Receiver
Integrerad förstärkare eller receiver
Amplificatore integrato o ricevitore
RECEIVE
SEND
EQ-1100/U
INPUT
OUTPUT

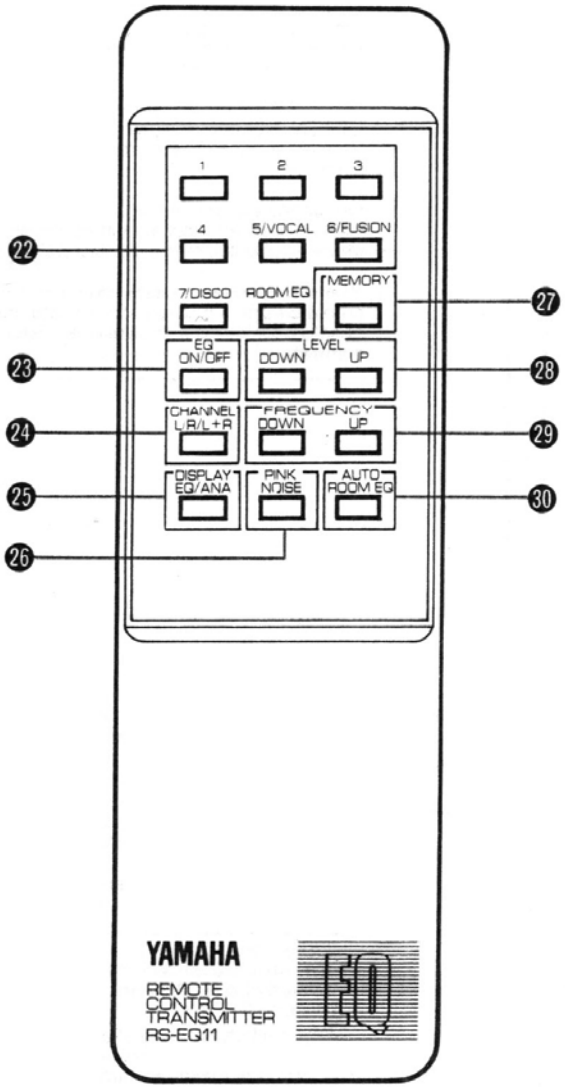
3


Integrated amplifier or receiver
Amplificateur intégré ou ampli-syntoniseur
Integrierter Verstärker oder Receiver
Integrerad förstärkare eller receiver
Amplificatore integrato o ricevitore
TAPE PB
REC OUT
EQ-1100/U
INPUT
OUTPUT

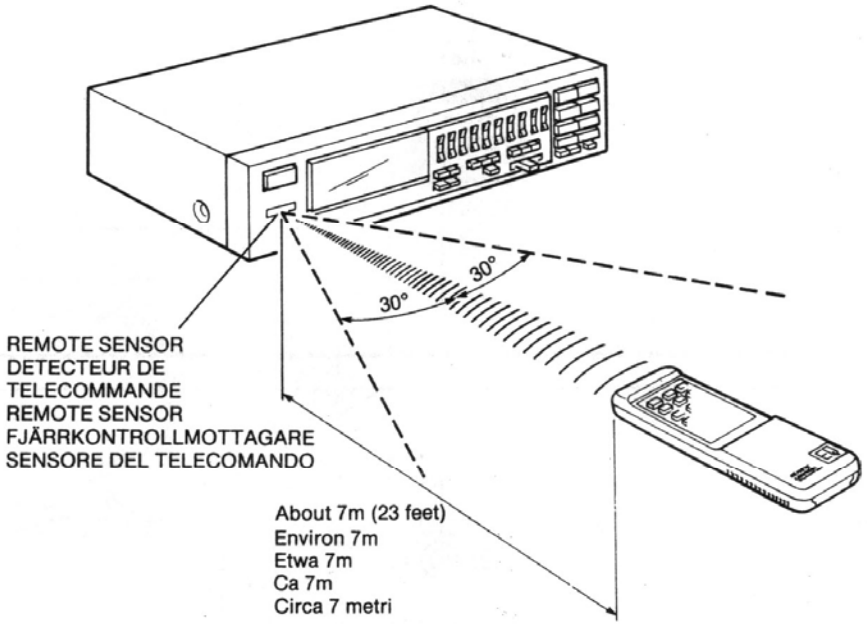
4


YAMAHA NATURAL SOUND GRAPHIC EQUALIZER EQ-1100
POWER
REMOTE CONTROL
MIC
SPECTRUM ANALYZER dB
EQ LEVEL/dB
P1
MEMO
LEFT
RIGHT
SOURCE
TAPE 2
EQ
EQ REC
EQ ROOM
SUB FILTER
Automatic Room Acoustic EQ / One-Touch EQ Memory Presets
Real-Time Frequency Spectrum Analyzer
EQUALIZER LEVEL
30 Hz
60 Hz
120 Hz
240 Hz
480 Hz
1kHz
2kHz
4kHz
8kHz
16kHz
DISPLAY
EQ CURVE
ANALYZER
PINK NOISE
AUTO ROOM EQ
LEFT
RIGHT
L+R
SUBSONIC FILTER
SOURCE TAPE 1 TAPE 2
TAPE 1▶2
TAPE 2▶1
5 10 15 20 25 30 Hz
1
2
3
4
5/VOCAL
6/FUSION
7/DISCO
ROOM EQ
EQ
EQ REC
MEMORY
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21

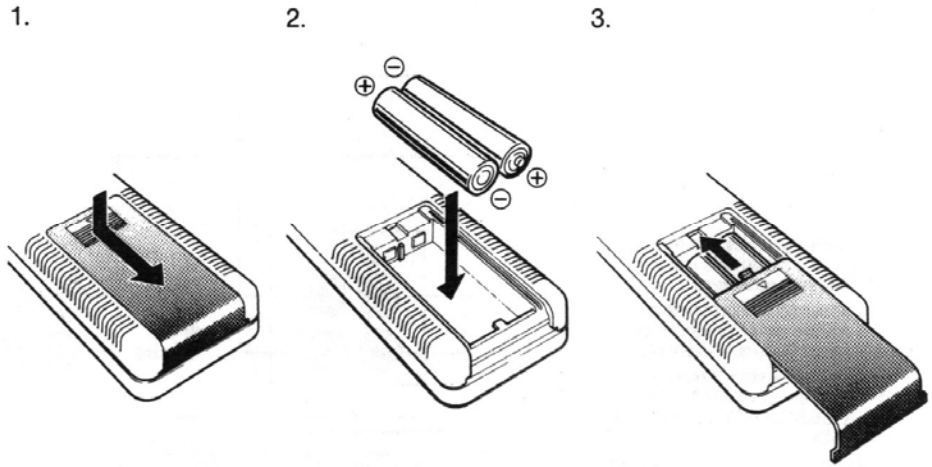
5


1
2
3
4
5/VOCAL
6/FUSION
7/DISCO
ROOM EQ
MEMORY
EQ ON/OFF
LEVEL DOWN
UP
CHANNEL L/R/L+R
FREQUENCY DOWN
UP
DISPLAY EQ/ANA
PINK NOISE
AUTO ROOM EQ
22
23
24
25
26
27
28
29
30
YAMAHA
REMOTE CONTROL TRANSMITTER
RS-EG11

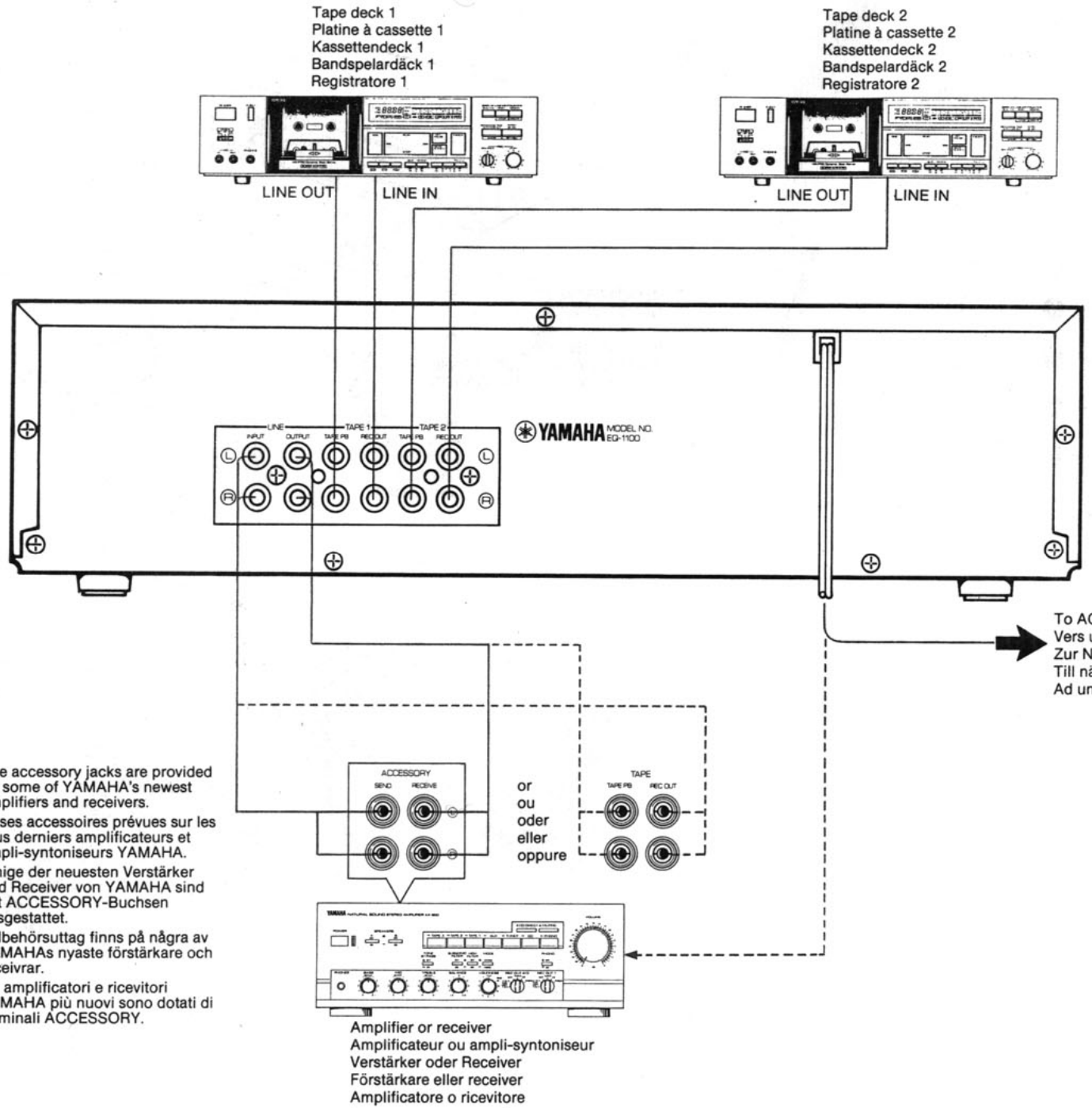
6


30°
30°
REMOTE SENSOR
DETECTEUR DE TELECOMMANDE
REMOTE SENSOR
FJÄRRKONTROLLMOTTAGARE
SENSORE DEL TELECOMANDO
About 7m (23 feet)
Environ 7m
Etwa 7m
Ca 7m
Circa 7 metri

7


1.
2.
3.

1



To connect this unit to a power amplifier, be sure to check that the power amplifier is equipped with input level controls.

Pour raccorder cet appareil à un amplificateur de puissance, bien vérifier que l'amplificateur de puissance est muni de commandes de niveau d'entrée.

Vor Anschluß dieses Geräts an einen Leistungsverstärker sichergehen, daß der Verstärker mit Eingangspegel-Reglern versehen ist.

Om denna apparat ska anslutas till en effektförstärkare, måste man kontrollera att denna är utrustad med insignalsnivåkontroller.

Prima di collegare quest'unità con un amplificatore di potenza, controllate che questo possieda dei controlli del livello d'entrata.

The accessory jacks are provided on some of YAMAHA's newest amplifiers and receivers.

Prises accessoires prévues sur les tous derniers amplificateurs et ampli-syntoniseurs YAMAHA.

Einige der neuesten Verstärker und Receiver von YAMAHA sind mit ACCESSORY-Buchsen ausgestattet.

Tillbehörsuttag finns på några av YAMAHAs nyaste förstärkare och receivrar.

Gil amplificatori e ricevitori YAMAHA più nuovi sono dotati di terminali ACCESSORY.

Connect to an AC outlet or to the unswitched outlet of amplifier or receiver. Check the power rating of the amplifier or receiver outlet before use.

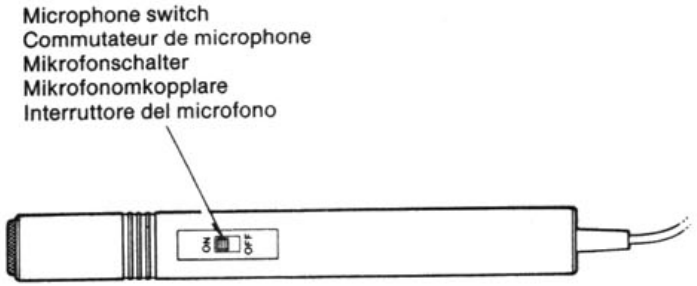
Raccorder à une prise murale ou à la prise non commutée de l'amplificateur ou de l'ampli-syntoniseur. Vérifier l'alimentation fournie par la prise de l'amplificateur ou de l'amplifi-syntoniseur avant le branchement.

An eine Netzsteckdose oder an den unbeschalteten Netzausgang eines Verstärkers oder Receivers anschließen. Vor dem Anschließen sicherstellen, daß der Verstärker oder Receiver die erforderliche Leistung liefern kann.

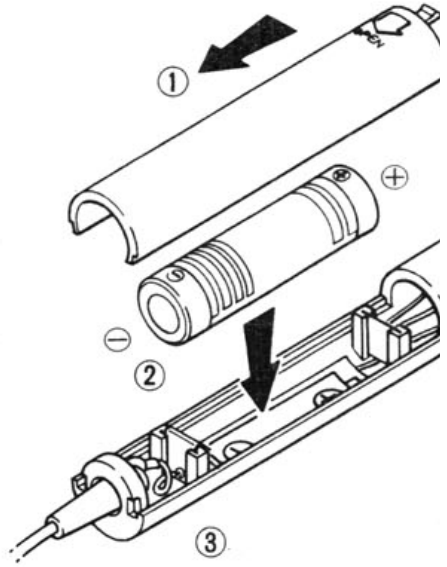
Anslut till ett nätuttag eller till ett direkt eluttag på en förstärkare eller reciever. Kontrollera maximal märkeffekt för förstärkarens nätuttag före anslutning.

Da collegare ad una presa di corrente oppure alla presa di servizio non asservita dell'amplificatore o ricevitore prima di effettuare i collegamenti. Prima di collegarla ad una presa dell'amplificatore o del ricevitore, controllate quanti watt è in grado di erogare quest'ultima.

8


Microphone switch
Commutateur de microphone
Mikrofonschalter
Mikrofonomkopplare
Interruttore del microfono

9


①
②
③

ENGLISH

• *Thank you for purchasing the YAMAHA EQ-1100/U graphic equalizer.*

CAUTION: READ THIS BEFORE OPERATING YOUR UNIT.

1. The EQ-1100/U is a sophisticated graphic equalizer. To ensure proper operation for the best possible performance, please read this manual carefully.

2. Choose the installation location of your unit carefully. Avoid placing it in direct sunlight or close to a source of heat. Also avoid locations subject to vibration and excessive dust, heat, cold or moisture. Keep it away from such sources of hum as transformers or motors.

3. Do not install the unit on other component and do not place the television set or color monitor on the unit.

4. Do not open the cabinet as this might result in damage to the set, or electrical shock. If a foreign object should get into the set, contact your dealer.

5. To prevent lightning damage, pull out the power cord during an electrical storm.

6. When removing the power plug from the wall outlet, always pull directly on the plug; never pull the cord itself.

7. Do not use force when using the switches.

8. When moving the set be sure to first pull out the power plug and remove cords connected to other equipment.

9. Do not attempt to clean the unit with chemical solvent as this might damage the finish. Use a clean, dry cloth.

10. Be sure to read the "Troubleshooting" section for advice on common operating errors before concluding that your unit is faulty.

11. Keep this manual in a safe place for future reference.

12. 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 SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION: 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.

SPECIAL INSTRUCTIONS FOR BRITISH 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 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.

CONNECTIONS

(See Fig. 1.)

- When connecting your equipment, turn the power to each unit off and make sure that you have correctly connected the Left (L) and Right (R) channels.

- For the amplifier or receiver connections, please refer to the amplifier or receiver owner's manual.

■ CONNECTING AN AMPLIFIER OR RECEIVER

Check from the connection diagram that you have made the correct connections. Please note that input procedures and program source selection may vary according to the capabilities of the amplifier or receiver and the connections between it and this unit.

- **To connect an integrated amplifier or receiver using the ACCESSORY jacks (See Fig. 2.):**

The ACCESSORY jacks are provided on some of Yamaha's newest amplifiers and receivers.

1. Connect the SEND jacks of the ACCESSORY jacks to the LINE INPUT of this unit.
2. Connect the RECEIVE jacks of the ACCESSORY jacks to the LINE OUTPUT of this unit.

The program source selected with the integrated amplifier's or receiver's input selector can be equalized.

- **To connect an integrated amplifier or receiver without using the ACCESSORY jacks (See Fig. 3):**

1. Connect the REC OUT jacks of the TAPE jacks to the LINE INPUT of this unit.
2. Connect tne TAPE PB jacks of the TAPE jacks to the LINE OUTPUT of this unit.

The following operations can be carried out via the amplifier or receiver:

Amp	Program Source	Setting
With a REC OUT selector.	Selected with the REC OUT Selector.	Set the INPUT SELECTOR to TAPE.
\ With a TAPE MONITOR switch.	Selected with the input selector.	Turn the TAPE MONITOR switch ON.

■ CONNECTING A TAPE DECK

Connect the tape deck to the TAPE jacks. Connect the TAPE PB jacks to the tape deck's LINE OUT terminal, and the REC OUT jacks to the tape deck's LINE IN jacks.

FRONT PANEL PARTS AND FUNCTIONS

(See Fig. 4.)

1. POWER switch

Press this switch to turn the unit ON. Press the switch again to turn the unit OFF.

NOTE

Even when the equalizer is not in use, be sure that the power cord is connected and the POWER switch is set to ON.

Failure to do so may result in no sound or distorted sound.

2. SPECTRUM ANALYZER/EQ LEVEL display

The spectra or equalizer levels are displayed.

The spectra are displayed using bars while the equalizer levels are displayed using dots.

When a microphone is connected to the MIC jack, the spectra of the microphone input are displayed.

3. Channel indicators

During equalizer display:

LEFT: Lights when the left channel is selected with the channel button.

RIGHT: Lights when the right channel is selected with the channel button.

LEFT RIGHT: The two light when the left and right channels are selected with the channel button.

During analyzer display:

LEFT: Lights when the left channel is selected with the channel button.

RIGHT: Lights when the right channel is selected with the channel button.

LEFT + RIGHT: Light when the left and right channels are selected with the channel button.

4. Preset No. indicator

The preset memory number (P1 to P7) is displayed.

5. MEMO indicator

When the MEMORY button is pressed, this indicator flashes for about 5 seconds.

6. Input Indicators
The source selected by the input select buttons is indicated.

7. EQUALIZER LEVEL buttons
Independent level controls for the right, left or both channels are provided for each of the ten frequency bands with a ±12 dB range of equalization. These button operations are effective only when the EQ button is set to ON even during the display changes.

- **30 Hz band**

Decreasing this level eliminates very low frequency rumble, or compensates a warped disc.
Increasing this level emphasizes the very low frequencies.

- **60 Hz band**

Decreasing this level reduces AC line hum and the lower tone.
Increasing this level emphasize low tones, such as pipe organ, drums, bass, etc.

- **120 Hz band**

This range supports the lower end of the music and controls overall depth. Decrease this level to eliminate "boomy bass" caused by room acoustics.

- **240 Hz band**

This is the middle-to-lower tone range, but it has an effect on the overall sound. Mainly, the richness of the strings can be controlled. When strings are overly warm under actual listening conditions, decrease this level.

- **480 Hz band**

This range is the foundation of music including both instruments and the human voice and it controls the overall power of the sound. As this level is increased, midrange sound will become more forward.

- **1 kHz band**

This range affects the presence of the music (depth of tone), and is especially effective when playing back vocals. Increasing or decreasing this level will cause the vocals to be more "up front" or more reserved.

- **2 kHz band**

This is the frequency range where the human ear is most sensitive. Boosting the level slightly will add brilliance, crispness, etc. to instruments. Cutting the level slightly makes for easy listening.

- **4 kHz band**

The human ear is also highly sensitive in this range. Mainly effective for increasing/decreasing the harmonics of the primary tone. Boosting this range a bit makes strings more intense. Over-intense, tiresome music is easily listened to when the level is decreased.

- **8 kHz band**

High frequency range. Strings, horns, etc. will be emphasized and this gives a slight difference in tone glaze and quality. Decreasing the level reduces overemphasized consonants in vocals and objectionable tape hiss. Increasing the level, on the other hand, improves the sharpness of such instruments as cymbals.

- **16 kHz band**

Super-high frequency range. This affects high harmonics rather than the fundamental tones of the instruments themselves, and has an effect on the delicacy and atmosphere of the music. Boosting this level adds a delicate, fresh sound to cymbals, triangles, etc.

8. Preset memory buttons
These buttons are used to store equalizer curves in the preset memory. By storing desired curves in the memory, they can be recalled by pressing these buttons. Up to 4 equalizer curves can be stored in memory. In addition, three memories are provided with storage of equalizer curves that are optimized for VOCAL, FUSION and DISCO music. These are stored under memory buttons 5 to 7, and cannot be rewritten by the user. The equalizer curve obtained by auto equalization is automatically stored under the ROOM EQ button.

9. MEMORY button
To store the equalizer curve being displayed in memory, press this button. Then, while the MEMO indicator is flashing (for about 5 seconds), press one of preset memory buttons (1 — 4).

10. EQ button and EQ REC button
To start equalization of a sound, press the EQ button so that the EQ indicator lights.
To record the equalized sound, press the EQ button then, the EQ REC button so that the EQ REC indicator lights.

11. Input select buttons
Press one of these buttons to select the source to be listened to.
SOURCE: To play the source connected to the amplifier, or to record onto cassette deck 1 or 2.
TAPE1: To play cassette deck 1 connected to the equalizer, or to dub the sound to cassette deck 2.
TAPE2: To play cassette deck 2 connected to the equalizer, or to dub the sound to cassette deck 1.

12. SUBSONIC FILTER button and control
Used to cut off unnecessary low frequency. If the program source to be played contains such super low sound, press the SUBSONIC FILTER button to turn the subsonic filter ON. The frequency to be cut off can be adjusted by the slide control.

13. Channel buttons
These are used to select the channel(s) subject to the equalizer level control or spectrum display.
LEFT: To display the equalizer levels or spectrum of the left channel only.
RIGHT: To display the equalizer levels or spectrum of the right channel only.
L + R: To display the equalizer levels or spectrum of both the left and right channels. With the equalizer level display, the left channel levels are displayed more brightly than the right channel levels. With the spectrum display, the sum of the left and right spectra is displayed.

14. DISPLAY mode buttons
These are used to select the display mode.
EQ CURVE: To display the equalizer levels.
ANALYZER: To display the spectrum.

15. AUTO ROOM EQ button
Press for auto equalization.
This button functions only when the supplied microphone is connected to the MIC jack.

16. PINK NOISE button
Pink noise, which is emitted by a built-in generator, is a random noise signal which is distributed at an even level at all frequencies, and when monitored through the supplied microphone, allows you to measure the acoustic response characteristics of the listening environment. To emit pink noise, set this button to ON and press the channel button to select the channel to which pink noise is applied.

17. SUB (subsonic filter) indicator
Lights when the SUBSONIC FILTER button is ON.

18. ROOM EQ indicator
Lights when the ROOM EQ button is ON.
The indicator flashes when the AUTO ROOM EQ button is ON, to indicate the auto equalization operation.

19. EQ/EQ REC indicators
Light respectively when the EQ and EQ REC buttons are ON.
However, when the EQ button is pressed OFF while the EQ and EQ REC buttons have been ON, the EQ REC indicator also goes off.

20. MIC jack
Connect the supplied microphone to this jack to measure acoustic characteristics of the listening room or to perform auto equalization. Note that the supplied microphone is not for sound mixing.

21. REMOTE CONTROL sensor
The signal from the provided remote control transmitter is received through this window.

■ REMOTE CONTROL TRANSMITTER
(See Fig. 5)

22. Preset memory keys

23. EQ ON/OFF key

24. CHANNEL keys

25. DISPLAY mode key

26. PINK NOISE key

27. MEMORY key

28. LEVEL UP/DOWN keys
After selecting a frequency with the remote control transmitter's FREQUENCY UP/DOWN keys or the main unit's EQ LEVEL buttons, adjust the level of the frequency with these keys.

29. FREQUENCY UP/DOWN keys
These are used to select the frequency subject to manual adjustment of the equalizer level. In the equalizer level display mode, the dot of the level selected lights with high brightness for about 7 seconds. In the analyzer display mode, the lowest bar lights with high brightness for about 7 seconds.

30. AUTO ROOM EQ key

REMOTE CONTROL TRANSMITTER

With the supplied remote control transmitter, most operations can remotely be carried out and the sound quality can be adjusted at your listening position.

■ REMOTE CONTROL OPERATION RANGE
(See Fig. 6.)

The remote control transmitter can be used up to about 23 feet from your amplifier and must be aimed in its direction for proper operation.
When the distance of the remote control range becomes short, replace the batteries.

■ BATTERY INSTALLATION
(See Fig. 7)

Install the supplied batteries as shown below.

1. Remove the battery compartment lid in the direction **of** the arrow.
2. Install the supplied batteries with the correct polarities.
3. Slide in the battery compartment lid until it clicks.

■ ELECTRET CONDENSER MICROPHONE
(See Fig. 8.)

An electret condenser microphone for auto equalization is provided with this unit. Microphone input will be displayed on the spectrum analyzer when the microphone is connected to the front panel MIC jack, the microphone switch is turned on, and a signal of level high enough to be measured is output through the speakers. * Remove the battery from the microphone if you do not expect to be using it for some time.

Changing the battery (See Fig. 9.)

© Remove the cover.

(2) Insert battery (size "AA", R06), or equivalent making sure that the positive and negative poles are facing in the right direction.

(3) After the battery has been changed snap the lid back on.

If the battery runs down, the sensitivity of the microphone will decrease. Change the battery as soon as it starts to run down.

Battery Cautions
If the battery is replaced incorrectly, dangerous leakage or corrosion may result. Be especially careful of the following points:

When replaceing:
- Insert the battery with correct (+) and (-) indications correctly into the battery compartment.

Rechargeable batteries:
- There are two types of batteries; rechargeable and nonrechargeable. Check the cautions label on the battery before use.

To avoid accidents:
- Never disassemble, heat or throw a battery into a fire. When disposing, deal with batteries as inflammable matter.
- Do not short the (+) and (-) terminals directly.

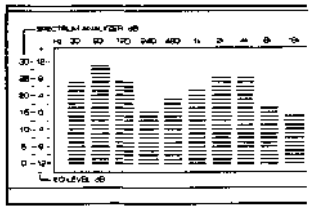
When battery leakage occurs:
- Wipe off the liquid in the battery compartment and replace the battery with new one.

BEFORE OPERATION

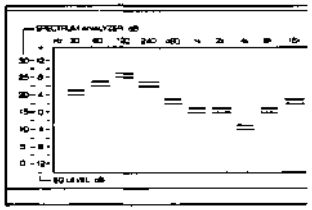
■ DISPLAY MODES

The display modes include the spectrum mode and equalizer level mode.

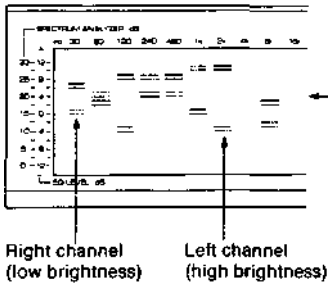
• SPECTRUM DISPLAY (LEFT), (RIGHT), (LEFT + RIGHT)



• EQUALIZER LEVEL DISPLAY (LEFT) OR (RIGHT)



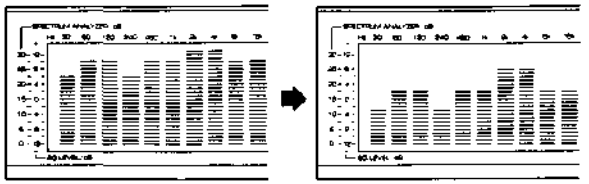
• EQUALIZER LEVEL DISPLAY (LEFT RIGHT)



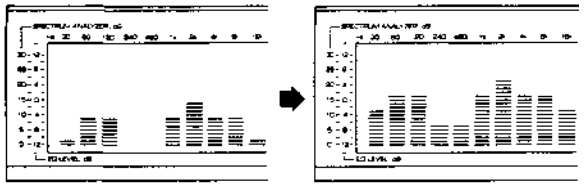
■ AUTO-LEVELING FUNCTION

If the spectrum level becomes too high or too low due to the influence of the input signal level, the auto-leveling function adjusts the spectrum display level in three steps (0 dB, -6 dB, -12 dB) so that the spectrum is always at the center of the display.

• WHEN INPUT LEVEL IS HIGH



• WHEN INPUT LEVEL IS LOW



■ MEMORY FACILITY

The unit is provided with four user memories that can be rewritten by the user, with three fixed memories that cannot be modified by the user, and with one auto equalization memory.

• **USER MEMORIES**
Memories 1 to 4 can store four sets of left and right equalizer curves.

• **FIXED MEMORIES**
Memories 5 to 7 stores the factory-set equalizer curves that were designed for optimum reproduction of different types of music. Each curve can be recalled by just pressing a button.
(New, user-set equalizer curves cannot be stored under these buttons.)

Memory 5 (VOCAL): The level of 2 kHz is enhanced by 4 dB, that of 4 kHz enhanced by 2 dB, and that of 480 Hz is attenuated by 4 dB. This enhances the vocal sound, providing a crisp sound.

Memory 6 (FUSION): The levels of 60 Hz, 120 Hz, 4kHz and 8 kHz are slightly enhanced to make the sound sharper and refreshing.

Memory 7 (DISCO): The levels of 60 Hz and 120 Hz are enhanced for more powerful bass and bass drum sound, while the levels from 4 kHz to 16 kHz are also enhanced for steady high tones.

• **AUTO EQUALIZATION MEMORY**
In ROOM EQ memory, the result of auto equalization is stored automatically.

OPERATIONS

■ AUTO EQUALIZATION

1. Connect the microphone supplied as an accessory and set the microphone's switch to ON.
   Place the microphone to the position and height where your ears will be when listening to your stereo.
   NOTES
   - Use only the provided microphone.
     Do not use another microphone, or the auto equalization could be incorrect.
   - When using the microphone, never grasp it with hands. Doing so may produce hum noise. Always use the supplied microphone stand.
2. Set the EQ button to ON.
3. Press the RIGHT or LEFT channel button.
4. Set the PINK NOISE button to ON.
5. Press the ANALYZER DISPLAY button.
6. Adjust the amplifier's volume control so that the spectrum from 30 Hz to 16 kHz comes to the center of the display.
   The acoustic characteristic of the listening room varies largely depending on the listening position and the arrangement of furniture and listening equipment.
   Before starting auto equalization, make the room's acoustic characteristic as flat as possible by arranging the positions of the speakers, furniture, etc.
   NOTE
   Do not set the amplifier level too low, or auto equalization will not start or end and, even if it is performed, the result is not always reliable.
7. Press the AUTO ROOM EQ button.
   The ROOM EQ indicator will light, and the auto equalization operation for the listening room characteristic for the left channel starts. After the left channel, the right channel is equalized, and the equalization operations are repeated up to 16 times for each channel, lasting about 50 seconds.
   The EQ button is turned ON automatically when the auto equalization starts.
   During auto equalization, all button operations, except for the POWER switch and AUTO ROOM EQ button, are not accepted.
8. When auto equalization ends, the adjusted equalizer level is stored automatically in the memory of the ROOM EQ preset memory button. The EQ button remains ON, other buttons return to the conditions before the equalization operation, and the ROOM EQ indicator lights continuously.

* The auto equalization can adjust the levels of frequencies from 60 Hz to 16 kHz. (The 30 Hz level is set to 0 dB.)
* To stop auto equalization in the middle of the operation, press the AUTO ROOM EQ button (to OFF).

■ CHECKING AUTO EQUALIZATION

1. Connect the microphone supplied as an accessory and set the microphone's switch to ON.
2. Press the PINK NOISE button.
3. Press the EQ button to ON, then press the ROOM EQ preset memory button. The frequency characteristic after equalization will be displayed.
4. Pressing the EQ button ON and OFF alternates the frequency characteristics before and after equalization.

* After confirmation, be sure to press the PINK NOISE button to OFF.

Normally, the attenuation of high frequencies is larger than for low frequencies, so the characteristic after equalization tends to include enhanced high frequencies. If you find that the sound after equalization is too brilliant, manually attenuate the equalizer levels of 2 kHz and more.

■ MANUAL EQUALIZATION

1. Set the EQ CURVE DISPLAY button to ON.
   The equalizer levels will be displayed with dots.
   If you want to adjust based on your hearing while observing the spectrum display, set the display mode for the analyzer mode with the ANALYZER button.
2. Press one of channel buttons to select the channel(s) to be adjusted.
   LEFT: Press to adjust the left channel. RIGHT: Press to adjust the right channel. L + R: Press to adjust the left and right channel simultaneously.
3. Set the EQ button to ON.
4. Press the EQUALIZER LEVEL buttons to obtain the desired equalizer curve.

■ HOW TO STORE EQUALIZER CURVES IN MEMORY

1. Adjust the equalizer levels.
2. Set the MEMORY button to ON.
   The MEMO indicator will flash for about 5 seconds.
3. While the MEMO indicator is flashing, press one of memory buttons 1 to 4.

* When two or more level setups are stored under one preset memory button, only the latest setup stored in memory will be stored.

■ HOW TO RECALL PRESET MEMORY

Press the preset memory button of the memory to be recalled.
The preset No. indicator lights to show the number of the button pressed, and the equalizer curve in the memory will be displayed.
If a memory is recalled while the EQ button is OFF, the stored equalizer curve will be displayed but the equalizer effect is not applied.

LAST MEMORY FUNCTION
The button setting and equalizer levels immediately before turning the power off are stored.
When the POWER switch is pressed ON again, the setting and levels before power off will be recalled.

MEMORY BACKUP
The button setting and equalizer levels in the last memory and the equalizer curves stored in the preset memories are stored even when the power cord has been disconnected from the outlet, using a capacitor which backs up these memories for at least 2 weeks. However, the equalizer curves stored in the fixed memories will not cleared even after 2 weeks. If the last memory and preset memories have been cleared after the power has been off for more than 2 weeks, it is necessary to store preset memories again.

■ HOW TO SUPERIMPOSE EQUALIZER CURVES

The curve stored in the ROOM EQ memory button, which was obtained by auto equalization, can be superimposed with another curve which has been stored in one of preset memory buttons 1 to 7.

1. Press the ROOM EQ button. The ROOM EQ indicator will light.
2. Press the ROOM EQ button again.
   Only "P" of the preset memory No. indicator will flash.
3. While "P" is flashing, press one of preset memory buttons 1 to 7 that is to be superimposed.

■ HOW TO DUB TAPE

1. Select a dubbing mode by the input select buttons.
2. When dubbing equalized sound, press the EQ and EQ REC buttons, and set the equalizer levels as desired.
3. According to the dubbing mode selected, set one of the cassette decks to play mode and the other to record mode.

TROUBLESHOOTING

Before assuming that your amplifier or receiver is faulty, check by following troubleshooting list which details corrective action which you can take yourself. If the fault persists, or is not ;ntioned in the list, turn off and disconnect the unit immediately, and get in touch with your nearest Yamaha dealer:

Fault	Cause	Cure
Power is not supplied even through the Power switch is turned on.	• The power plug is not securely plugged in.	• Plug it in securely.
No sound is heard.	• The input slector is not set correctly. • The pin plug is not properly connected.	• Press the correct input selector. • Check the connections.
There is no sound from one speaker.	• The pin plug is not properly connected.	• Check the connections.
Sound quality cannot be enhanced.	• The EQ button is not pressed.	• Press the EQ button.
Spectrum analyzer will not light up.	• The input selector is not set correctly. • The correct DISPLAY mode button is not pressed.	• Press the correct input selector. • Press the ANALYZER button.
Equalizer level will not light.	• The correct DISPLAY mode button is not pressed.	• Press the correct DISPLAY mode button.
Equalizer level of the desired channel will not light.	• The channel button is not set correctly.	• Press the desired channel button.
No pink noise during auto equalization.	• The microphone is not connected.	• Connect the supplied microphone to the MIC jack.

SPECIFICATIONS

Rated Output Voltage
[1 kHz, 0.1% T.H.D) 7V
Rated Output Voltage 1V
Max. Input Voltage
(1 kHz) 7V
Rated Input Voltage 1V
Input Impedance ..... 22 k-ohms
Frequency Response ..... 10 Hz — 50 kHz, -1 dB
Center Frequencies ..... 30 Hz, 60 Hz, 120 Hz, 240 Hz, 480 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz, 16 kHz,
Equalizer Control Range ..... ±12 dB
Signal-to-Noise Ratio (IHF A Network)
At 1V output 113d8/2V, 107dB/1V
Total Harmonic Distortion
(20 Hz ~ 20 kHz, 1V output) .....Less than 0.006%
Maximum Output
(1 kHz, T.H.D. 0.1%) 7V
Subsonic Filter Cutoff
Frequency ..... 5 Hz — 30 Hz (Variable) (12dB/Oct)
Microphone Input Sensitivity ..... 0.3 mV
Power Requirements
General model ..... 110/120/220/240V, 50/60 Hz
Europe model ..... 220V, 50 Hz
Australia and U.K. models..... 240V, 50Hz
U.S.A. and Canada models ..... 120V, 60 Hz
Power Consumption ..... Canada model: 14W
Except Canada model: 12W
Dimensions (W x H x D)..... 435 x 122 x 290 mm (17-1/8"x 4-13/16" x 11-7/16")
Weight ..... 3.8 kg (8 lbs. 6 oz.)
Accessories ..... Pin plug cords (2)
Electret Condenser Mic (1)
Mic stand (1)
Remote Control Transmitter RS-EQ11 (1)
Dry battery, size "AA" (R06) type (3)

* Specifications subject to change without notice.