

YAMAHA GE-5

Natural Sound Graphic Equalizer

10 Independently Adjustable Frequency Bands

Continuous Adjustment Over ± 10 dB Range

Yamaha Unique Spatial Expander Control

Auto Function Adaptor Available For Use With Yamaha A-20, A-10

OWNER'S MANUAL



Thank you for purchasing the YAMAHA GE-5 stereo graphic equalizer.

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IMPORTANT

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

Model: GE-5

Serial No.:

The serial number is located on the rear of the cabinet.

Retain this Owner's Manual in a safe place for future reference.

WARNING

To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

CAUTION (PREPARED IN ACCORDANCE WITH UL STANDARD 1270)

1

Read Instructions—All the safety and operating instructions should be read before the appliance is operated.

2

Retain Instructions—The safety and operating instructions should be retained for future reference.

3

Heed Warnings—All warnings on the appliance and in the operating instructions should be adhered to.

4

Follow instructions—All operating and other instructions should be followed.

5

Water and Moisture—The appliance should not be used near water—for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

6

Carts and Stands—The appliance should be used only with a cart or stand that is recommended by the manufacturer.

7

Wall or Ceiling Mounting—The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.

8

Ventilation—The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

9

Heat—The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including other audio components) that produce heat.

10

Power Sources—The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

11

Power-Cord Protection—Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plug, convenience receptacles, and the point where they exit from the appliance.

12

Cleaning—The appliance should be cleaned only as recommended by the manufacturer.

13

Nonuse Periods—The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

14

Object and Liquid Entry—Care should be taken so that objects do not fall into and liquids not spilled into the inside of the appliance.

15

Damage Requiring Service—The appliance should be serviced by qualified service personnel when:

- A. The power-supply cord or the plug has been damaged; or
- B. Objects have fallen, or liquid has been spilled into the appliance; or
- C. The appliance has been exposed to rain; or
- D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
- E. The appliance has been dropped, or the cabinet damaged.

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Servicing—The user should not attempt to service the appliance beyond those means described in the operating instructions. All other servicing should be referred to qualified service personnel.

**CAUTION: READ THIS BEFORE
OPERATING YOUR GE-5**

- 1**
The GE-5 is a sophisticated stereo graphic equalizer. To ensure proper operation for the best possible sound reproduction, please read this manual carefully.
- 2**
Choose the installation location of your GE-5 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 away from such sources of hum as transformers or motors.
- 3**
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.
- 4**
When removing the power plug from the wall outlet, always pull directly on the plug; never yank the cord.
- 5**
Do not use force when using the switches and knobs.

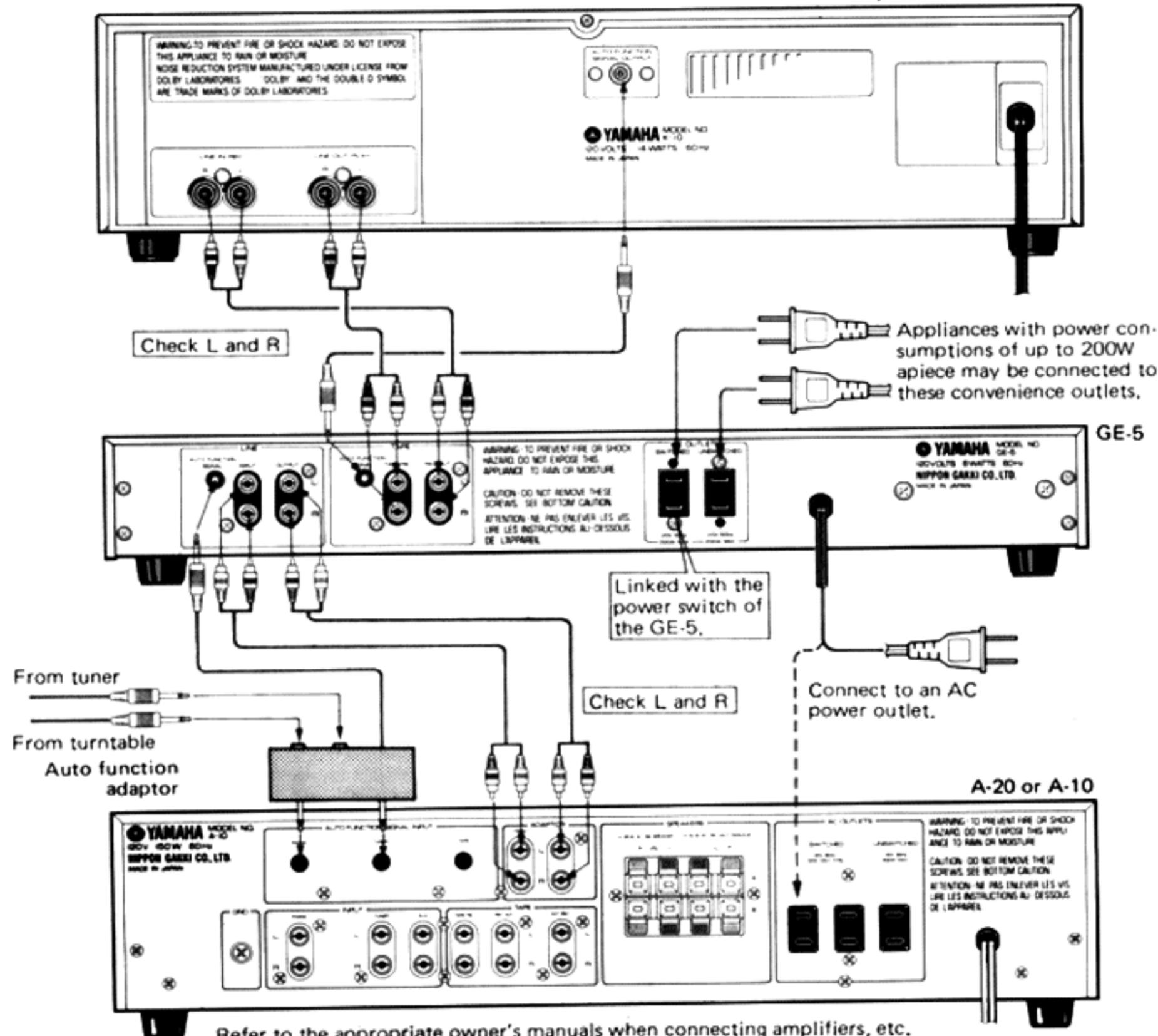
- 6**
When moving the unit be sure to first pull out the power plug and remove cords connecting to other equipment.
- 7**
Do not attempt to clean the GE-5 with chemical solvents as this might damage the finish. Use a clean, dry cloth.
- 8**
Be sure to read the "troubleshooting" section for advice on common operating errors before concluding that your GE-5 is faulty.
- 9**
Keep this manual in a safe place for future reference.
- 10**
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.

CONNECTION DIAGRAM / CONNECTIONS

Turn the power off on each unit, confirm the left (L) and right (R) channels, and make connections.

- When connecting to the Yamaha A-20 or A-10 integrated amplifier.

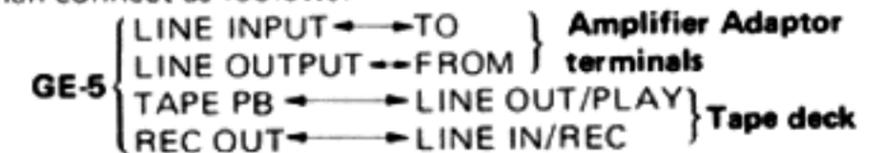
Tape deck K-10 or K-20



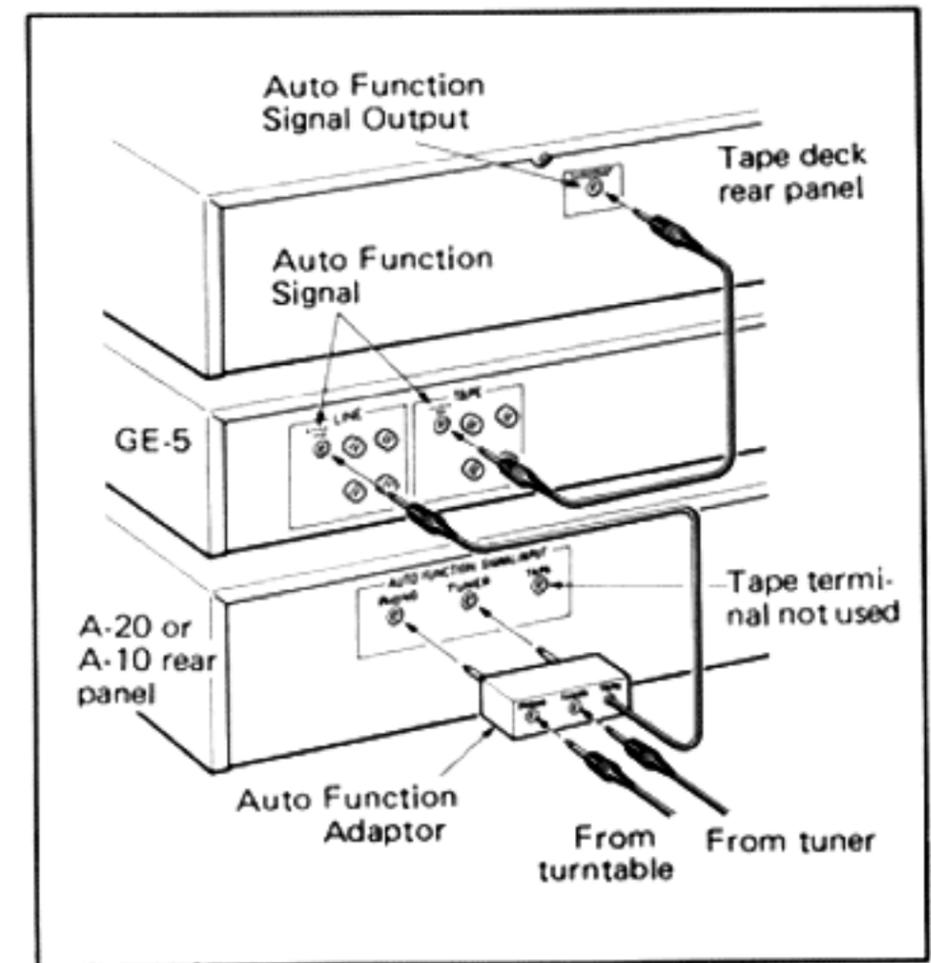
(Refer also to the connection diagram)

- When connecting to the Yamaha A-20 or A-10 integrated amplifier.

Confirm that the left and right channels are not reversed; then connect as follows:



- Using the GE-5 with the AUTO FUNCTION feature
When the provided Auto Function Adaptor is used to connect the GE-5 to the Yamaha A-10 or A-20 amplifier, the Auto Function will operate even with the tape deck connected to the GE-5. In this case, connect the Auto Function Adaptor as shown in the diagram.

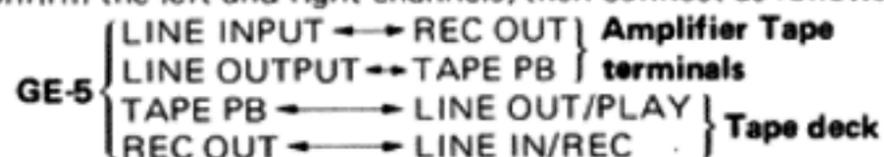


Refer to the appropriate owner's manuals when connecting amplifiers, etc.

■ **Yamaha A-560 integrated amplifier, etc.**

When monitoring with the amplifier with REC OUT SELECTOR or TAPE MONITOR.

Confirm the left and right channels; then connect as follows:



If the amplifier has a REC OUT SELECTOR, set the INPUT SELECTOR to TAPE 1 (or 2), and switch the input source with the REC OUT SELECTOR. If there is a TAPE MONITOR SWITCH, SET THE SWITCH TO MONITOR.

* It is impossible to take full advantage of the GE-5's features unless the amplifier or receiver has a REC OUT SELECTOR or a TAPE MONITOR SWITCH.

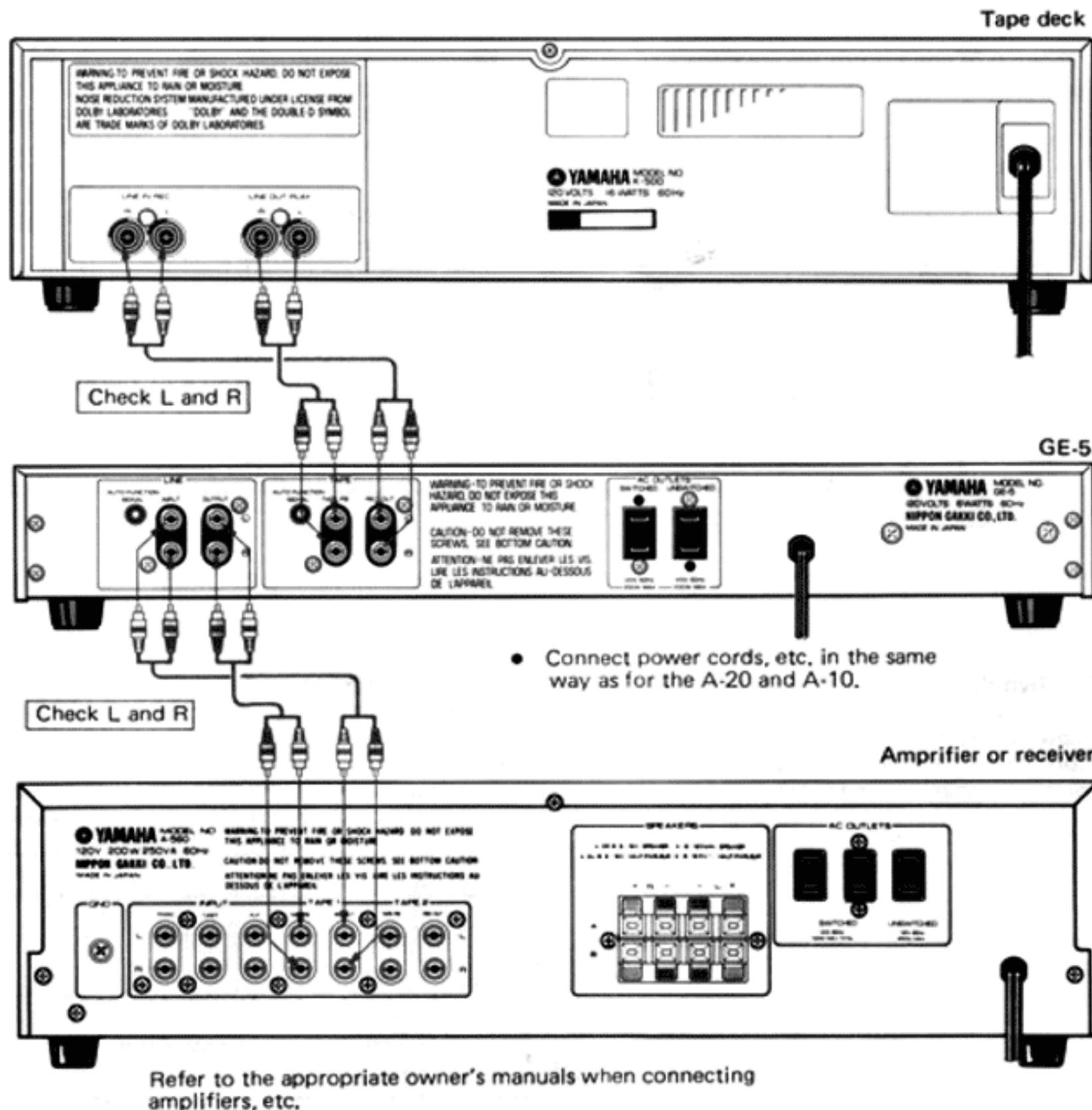
■ **Connection to AC OUTLET**

1. Any appliance whose power consumption does not exceed 200 W may be plugged into the SWITCHED AC OUTLET of the GE-5, allowing it to be turned on and off automatically via the GE-5 power switch.
2. Appliances whose power consumption is 200 W or less may also be connected to the UNSWITCHED AC OUTLET; however, the appliance will not be affected by the GE-5 power switch.

■ **Caution**

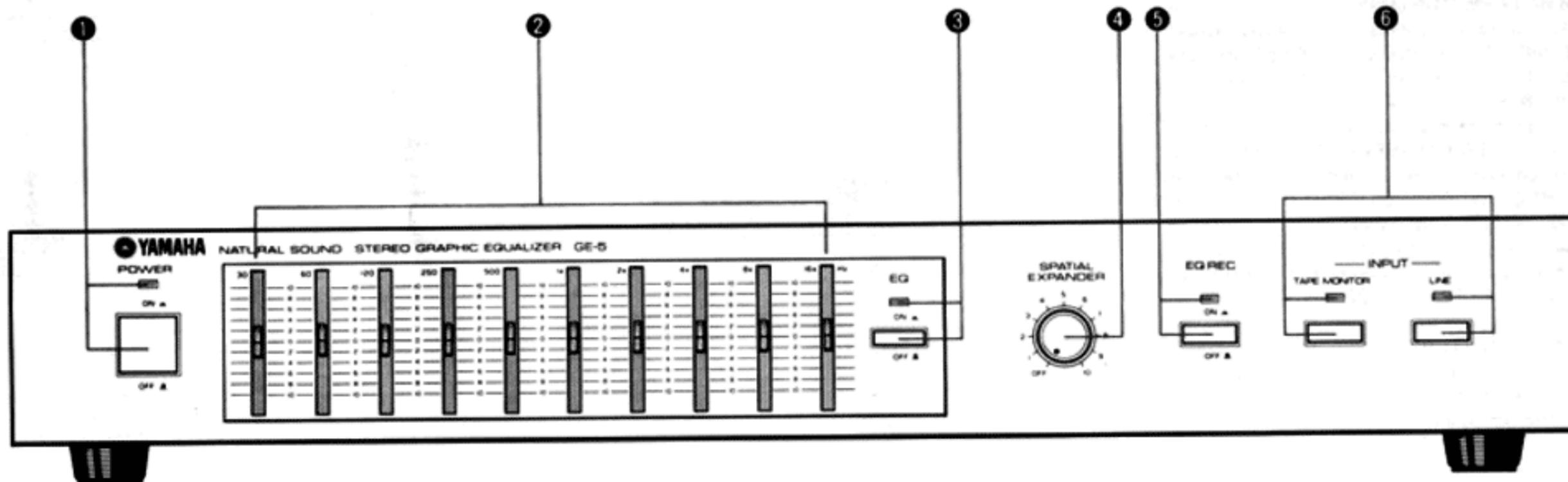
The cord should be plugged in and pulled out by holding the plug. Yanking on the cord itself could damage the cord. Connect the cord firmly. A poor connection could cause noise.

● **When connecting to amplifiers or receivers.**



● Connect power cords, etc. in the same way as for the A-20 and A-10.

FRONT PANEL PARTS AND FUNCTIONS



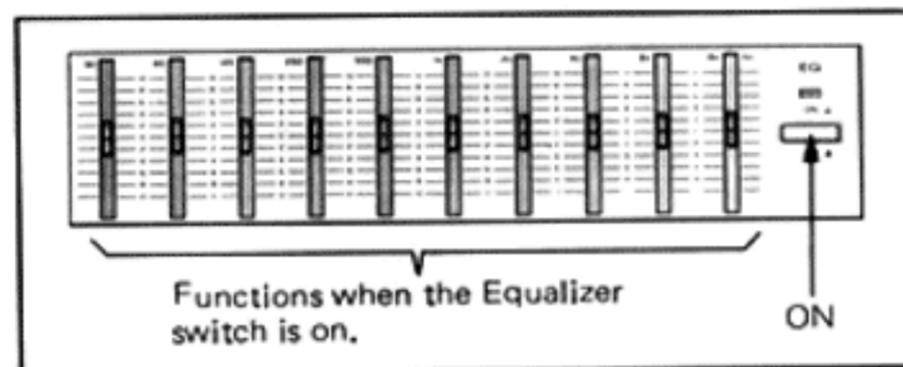
❶ POWER Switch

Push-on, push-off type. When the switch is turned on the indicator above will light.

- The muting circuit will function for a few seconds after power-on and no sound will be heard.

❷ Equalizer Levers

Adjust the tonal color by moving the levers for the various frequency bands. By moving the lever toward +10, the corresponding frequency is emphasized, while by moving the lever toward -10 the frequency is de-emphasized. The 0 position is flat. The adjustment range of each band is ± 10 dB.



• 30 Hz Lever

Moving this lever downward-reduces very low frequency rumble, or compensates a warped disc. Moving the knob toward + emphasizes the very low frequencies.

• 60 Hz Lever

Moving the lever downward reduces AC line hum and (reduces) the lower tone. Moving toward + emphasizes low tones such as pipe organ, drums, bass, etc.

- **120 Hz Lever**

This zone supports the lower end of the music and controls overall depth. The lever may be moved towards — to eliminate “boomy bass” caused by room acoustics.

- **250 Hz Lever**

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, moving the lever toward — may help.

- **500 Hz Lever**

This range is the foundation of music including both instruments and the human voice and it controls the overall power of the sound. As the knob is turned up, midrange sounds become more forward.

- **1 kHz Lever**

This zone affects the presence of the music (depth of tone), and is especially effective when playing back vocals. Moving the lever up and down will cause the vocals to be more “up front” or more reserved.

- **2 kHz Lever**

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 Lever**

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 becomes easy listening when the lever is moved towards —.

- **8 kHz Lever**

High frequency range. Strings, horns, etc. will be emphasized and this gives a slight difference in tone glaze and quality. Moving the control towards — reduces over-emphasized consonants in vocals and objectionable tape hiss. Moving the lever up, on the other hand, improves the sharpness of such instruments as cymbals.

- **16 kHz Lever**

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

- ③ **EQUALIZER ON/OFF Switch**

When adjusting tone color with the Equalizer Levers (30 Hz — 16 kHz), turn the switch ON (indicator lights). When the switch is OFF, the levers will have no effect on the sound regardless of their settings and a flat response is produced.

- ④ **SPATIAL EXPANDER**

When the switch is OFF, the sound will be played back with a normal sound image. By turning it to the right (clockwise), the Spatial Expander feature is activated and the sound image is expanded. The more the control is turned to the right, the wider the sound image will be expanded. (See page 9)

- ⑤ **EQUALIZER REC Switch**

Turn this switch on to allow the sound being recorded to be processed with the Equalizer Levers (30 Hz — 16 kHz) and the Spatial Expander (the indicator will light). When recording without such processing, turn the switch off.

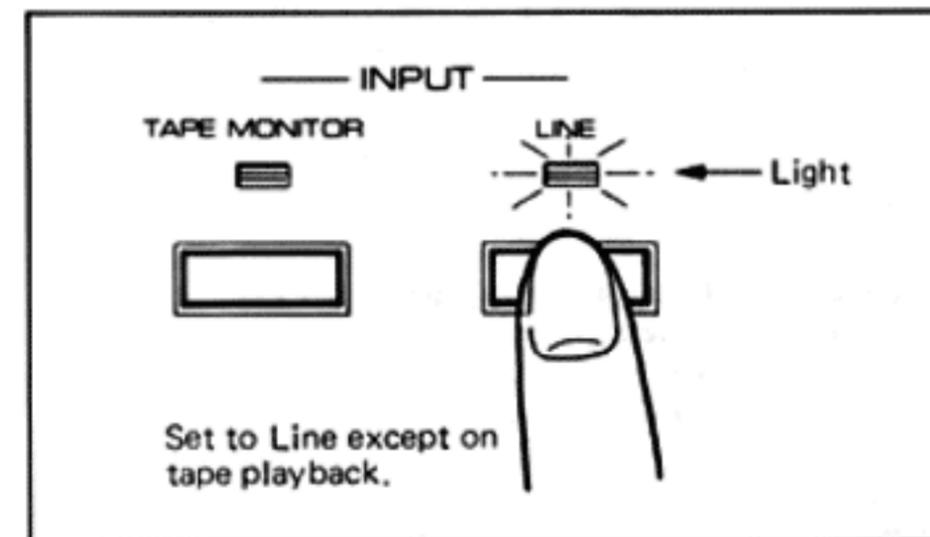
- ⑥ **INPUT Selector**

- **TAPE MONITOR Switch**

Press when playing the tape deck connected to the rear panel TAPE terminal (the indicator will light).
* When recording, turn the LINE MODE switch on.

- **LINE Switch**

When not playing back from the tape deck or recording, always engage the LINE switch (indicator will light).
* When power is turned on, the input source that was selected at the time power was turned off is automatically re-selected.



OPERATIONS

- Refer to the appropriate owner's manuals for amplifier and a tape deck.
- The tone controls of the connected amplifier, etc. should be set for a flat response.

[Connecting to the A-20 or A-10]

■ Equalizing disc play or FM broadcast reception (Fig. 1)

1. Turn on the power on each unit.
 2. Turn the ADAPTOR switch of the amplifier on.
 3. Press the LINE and EQ switches of the GE-5 to turn them on.
 4. Start the music source from the turntable or tuner.
 5. Adjust the volume level with the amplifier.
 6. Adjust the tone quality to your tastes with the Equalizer Levers and the SPATIAL EXPANDER.
- Verify the overall effect on the sound by turning the ADAPTOR switch on the amplifier on and off.

■ Equalizing playback from a tape deck (Fig. 2)

1. Turn on the power on each unit.
 2. Turn the ADAPTOR switch of the amplifier on.
 3. Press the TAPE MONITOR and EQ switches of the amplifier to turn them on.
 4. Operate the tape deck to play back the tape.
 5. Adjust the volume with the amplifier.
 6. Adjust to your favorite tone quality with the equalizer knob and the SPATIAL EXPANDER.
- The above explanation applies when the tape deck is connected to the GE-5. In this case, the INPUT

SELECTOR setting of the amplifier is irrelevant. When equalizing a tape deck connected directly to the amplifier, the operation is the same as with ordinary sources such as disc, FM stations, etc.

■ Equalizing disc, FM station, etc. playback and recording the result. (Fig. 3)

1. Turn on the power on each unit.
2. Turn ADAPTOR switch of the amplifier on.
3. Set the INPUT select of the GE-5 to LINE, and turn the EQ switch and EQ REC switch ON.
4. Start the source to be recorded (disc, FM station, etc.)
5. Adjust the tone quality to taste with the Equalizer Levers and SPATIAL EXPANDER.
6. Set the recording levels on the tape deck and begin recording.
7. The program being recorded can be monitored by connecting headphones to the amplifier or deck or via the speakers.

■ Dubbing with equalization (Fig. 3)

1. Connect two tape decks, one to the GE-5 and the other to the Tape In terminals of the amplifier.
2. Turn on the power on each unit.
3. Turn the ADAPTOR switch of the amplifier on.
4. Set the INPUT of the GE-5 to LINE and turn the EQ switch and EQ REC switches on.
5. Load the recorded tape into the deck connected to the amplifier and start playback.

6. By monitoring through speakers or headphones, adjust the tone quality to your taste with the Equalizer Levers and the SPATIAL EXPANDER.
7. Adjust the REC level, etc. of the deck connected to the GE-5; then start recording.
8. The program being recorded can be monitored through headphones or speakers.

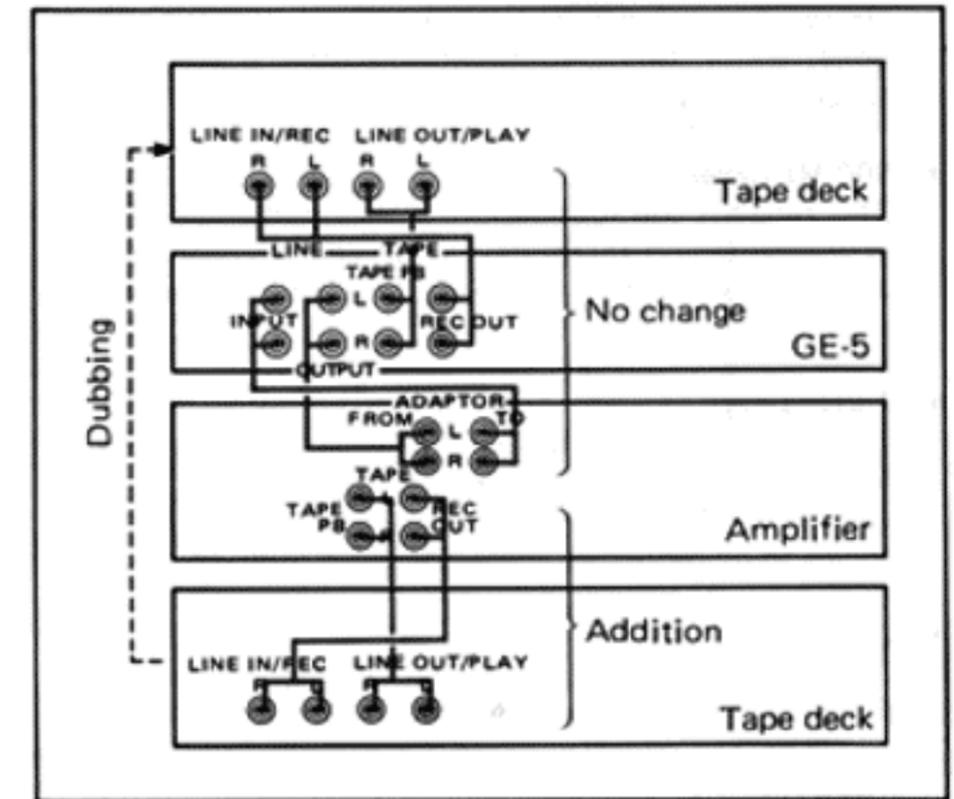


Fig. 1

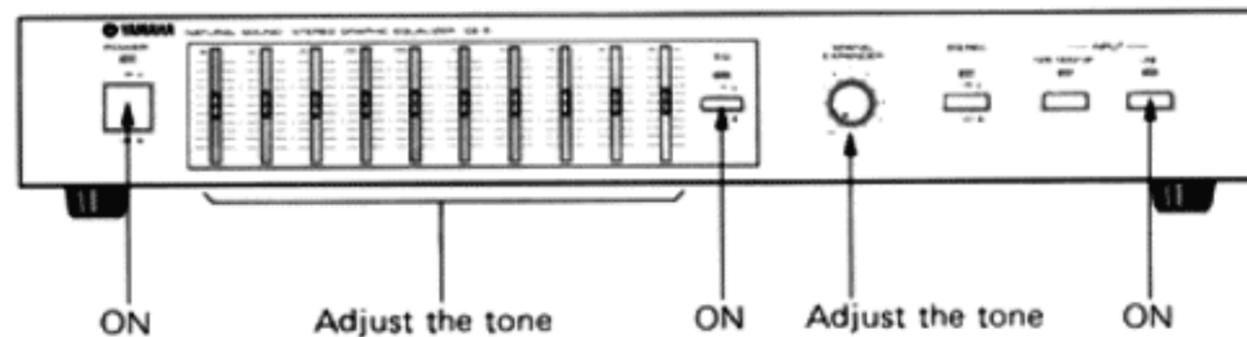
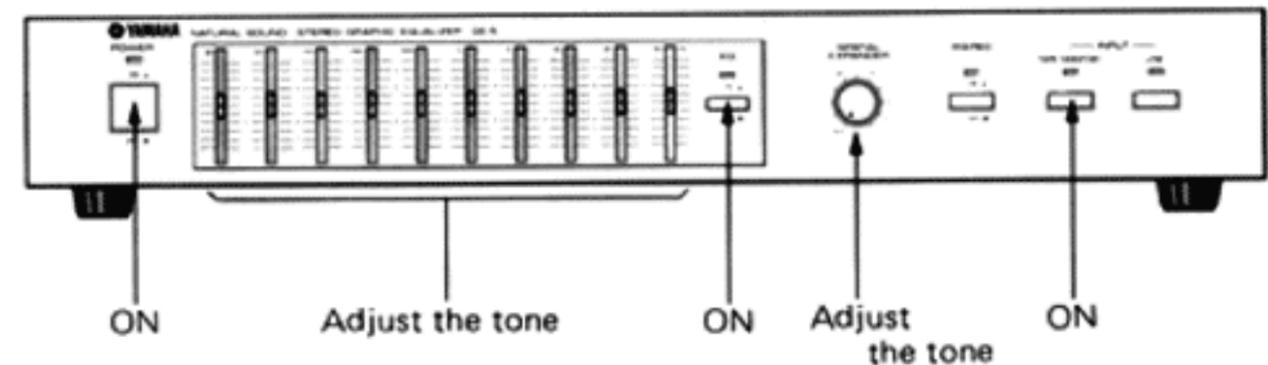


Fig. 2



Connecting to an amplifier with a REC OUT SELECTOR or a TAPE MONITOR switch, such as the A-560, R-10, etc.

- **Equalization of discs, FM stations, etc. (Fig. 1)**
 1. Turn on the power of each unit.
 2. Set the INPUT SELECTOR of the amplifier to TAPE 1 (2). Equalize with the Tape terminals of the unit connected to the GE-5 or set the TAPE MONITOR switch to MONITOR.
 3. Select the program source (PHONO or TUNER) with the REC OUT SELECTOR or the INPUT SELECTOR of the amplifier.
 4. Set the INPUT or the GE-5 to LINE, and turn the EQ switch ON.
 5. Start the program source (turntable, tuner).
 6. Adjust the volume with the amplifier.
 7. Adjust the tone quality to your taste with the Equalizer Levers and the SPATIAL EXPANDER.
 - Verify the overall effect by turning the INPUT SELECTOR of the amplifier to either PHONO or TUNER (or turn the TAPE MONITOR switch on/off).
- **Equalizing the tape deck on playback (Fig. 2)**
 1. Turn on the power on each unit.
 2. Set the INPUT SELECTOR of the amplifier to TAPE 1 (2), or turn the TAPE MONITOR switch on.
 3. Set the INPUT of the GE-5 to TAPE MONITOR, and turn the EQ switch on.

4. Operate the tape deck to start playing the tape back.
5. Adjust the volume on the amplifier.
6. Adjust the tone to your taste with the Equalizer Levers and the SPATIAL EXPANDER.
 - When equalizing a tape deck which is directly connected to the amplifier, use the same procedure as in the "disc, FM stations" section.

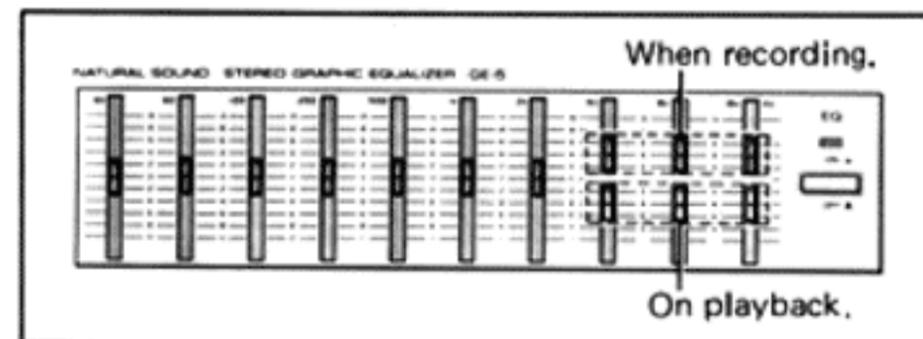
■ **Equalizing discs, FM stations, etc. and recording the result. (Fig. 3)**

1. Turn on the power on every unit.
2. Set the INPUT SELECTOR of the amplifier to TAPE 1 (2), or turn the TAPE MONITOR switch on.
3. Turn the REC OUT SELECTOR or the INPUT SELECTOR of the amplifier to the source to be recorded (PHONO or TUNER).
4. Set the INPUT of the GE-5 to LINE and turn the EQ switch and the EQ REC switch on.
5. Start the source to be recorded (disc, FM station, etc.).
6. Adjust the tone to your taste with the Equalizer Levers and the SPATIAL EXPANDER.
7. Set the recording levels on the tape deck and begin recording.
8. The program being recorded can be monitored with the speakers or headphones.

[Other use]

■ **Reduction of tape hiss**

Since tape hiss is in the high-frequency range, it can be reduced by setting the 4 kHz – 16 kHz levers up about 4 dB on recording, and lowering the levers by 4 dB on playback.



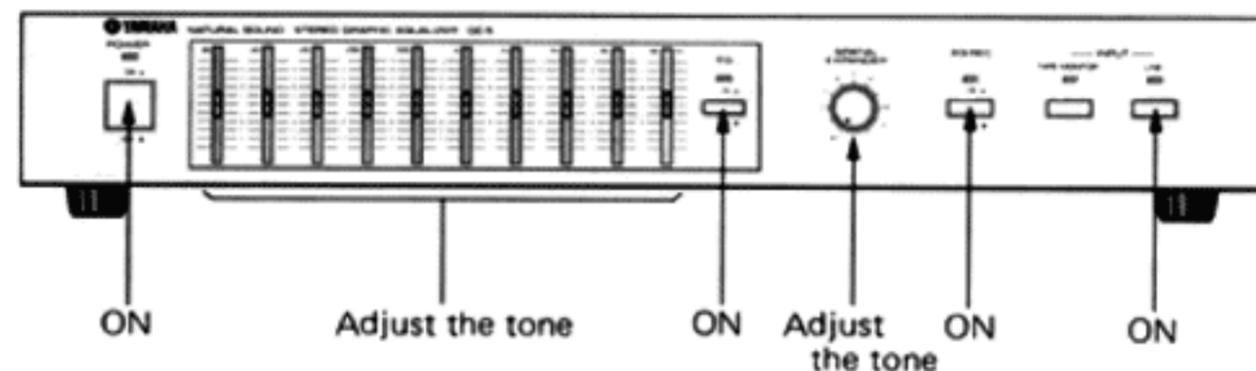
■ **Reduction of low-frequency noise such as record warp**

By lowering the 30 Hz control all the way to -10 dB, it is possible to eliminate large speaker cone excursions caused by record warp.

■ **Compensation for poor room acoustics**

The sound under actual listening conditions is affected greatly by the speakers, size of the room, the arrangement of the furniture, etc. By changing the equalizer levers and observing the effect, it is possible to compensate for such effects and greatly improve the sound. It is also possible to deliberately create altered tonal responses to match your mood.

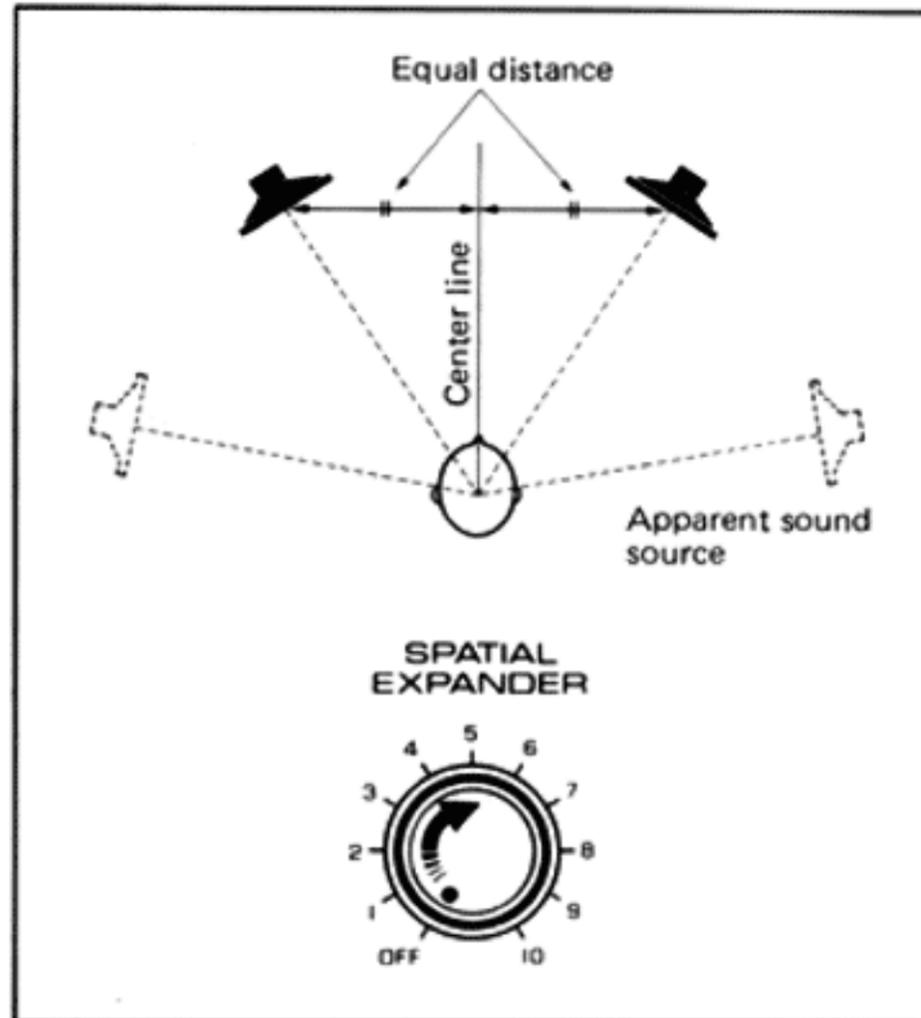
Fig. 3



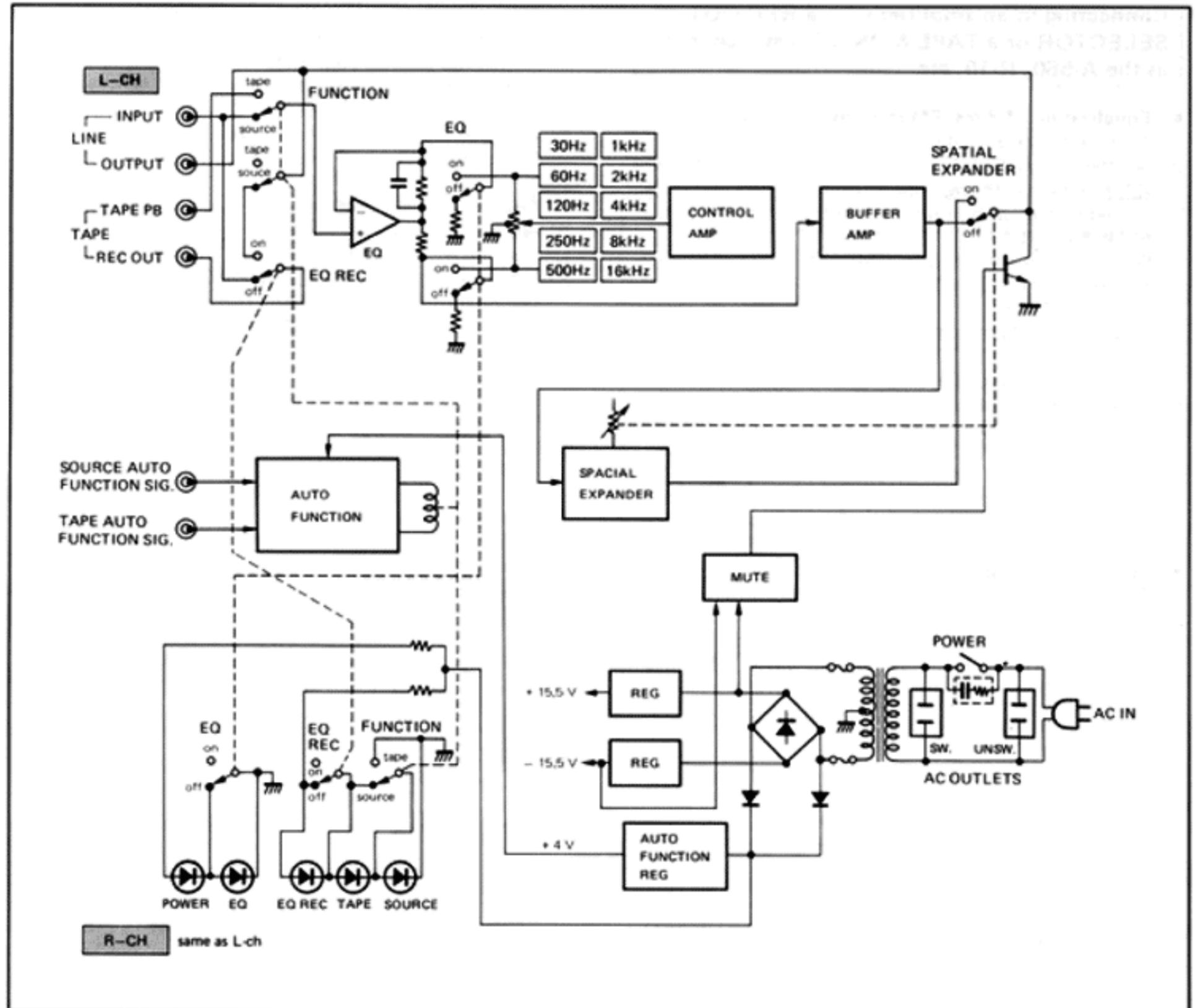
SPATIAL EXPANDER

Yamaha's advanced technology makes listening to a dynamic stereo music program even more exciting. At your command, the stereo sound field is expanded beyond the physical locations of your speakers, filling your room with incredibly realistic sound. Be sure to choose a listening position equidistant from the two speakers to enjoy the optimum expanded stereo effect. The Spatial Expander control is continuously variable from 1 (minimum) to 10 (maximum), and it should be set for the most pleasing results depending on the particular program source. The best effect is produced by music sources with excellent separation, and for these high-quality sources as setting of 5 - 7 is best.

- No effect is produced with monophonic sources or mono mode.
- There is almost no effect when headphones are used.



BLOCK DIAGRAM



TROUBLESHOOTING / SPECIFICATIONS

■ TROUBLESHOOTING

Before assuming that your amplifier is faulty, check the following troubleshooting list which details the corrective action you can take yourself without having to call a service engineer. If you have any doubts or questions, get in touch with your nearest Yamaha dealer.

| Fault | Cause | Cure |
|--|--|---|
| No sound is heard. | <ul style="list-style-type: none"> • Power plug or connecting cords are plugged in incompletely. • There is a mistake in the connections. • The INPUT SELECTOR is set improperly. | <ul style="list-style-type: none"> • Plug in firmly. • Check the connections. • Press the TAPE MONITOR switch to play tapes back; press LINE in other cases. |
| Excessive noise. | <ul style="list-style-type: none"> • Electric appliances being used nearby. • Connecting cords are not plugged in securely. | <ul style="list-style-type: none"> • Turn off the appliances causing the noise. • Check the connections. |
| Playback sound is not properly balanced. | <ul style="list-style-type: none"> • Tone controls, etc. on the amp are not set to flat. | <ul style="list-style-type: none"> • When using the equalizer, set the tone control of the amplifier to either flat or Defeat. |
| Auto Function is not working. | <ul style="list-style-type: none"> • The LINE and TAPE connections are reversed. • Improper connections. | <ul style="list-style-type: none"> • Check the connections. |

■ SPECIFICATIONS

Rated Output (Line/
Tape, 150mV Input) 150mV

Input Impedance (Line/
Tape, 150mV Input) 50K-ohms

Total Harmonic Distortion
(20 to 20,000 Hz,
1V output, Volume
control flat position) Less than 0.01%

Frequency Response 20 to 20,000 Hz, ± 0.2 dB

Signal-to-Noise Ratio
(IHF-A-Network,
150mV/4.7 kohms

Terminated) Better than 85dB
Center Frequencies 30, 60, 120, 250, 500,
1k, 2k, 4k, 8k, 16kHz

Equalizer Control Range ± 10 dB

Power Supply 120V/60 Hz

Power Consumption 6 W

Dimensions (W x H x D) 435 x 72.3 x 279 mm
(17-1/8" x 2-7/8" x 11")

Weight 3.25 kg (7 lbs, 3 oz.)

Specifications subject to change without notice.