

# YAMAHA MX-600/L

*Natural Sound Stereo Power Amplifier*

*Amplificateur stéréophonique de puissance de la série "Natural Sound"*

CENTER

OWNER'S MANUAL

MODE D'EMPLOI

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Thank you for purchasing the YAMAHA MX-600/U stereo power amplifier.

## **ABOUT THIS MANUAL**

To obtain the finest performance from your new power amplifier, please read this manual carefully, keeping it handy for future reference.

After you know which **PRECAUTIONS** to take, the section **CONNECTIONS** will show you how to hook up the MX-600/U to your control amplifier and speakers. Operation of this power amplifier is explained under **FRONT PANEL CONTROLS AND THEIR FUNCTIONS**. If you have any trouble, the final section on **TROUBLESHOOTING** tells you what to do before contacting your YAMAHA dealer.

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### **IMPORTANT:**

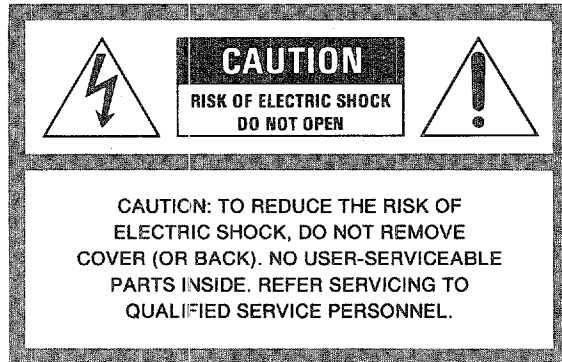
Please record the serial number of your unit in the space below.

Model: MX-600/U

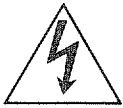
Serial No.:

# SAFETY INSTRUCTIONS

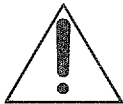
Read this before operating your MX-600/U.



## ● Explanation of graphical Symbols



The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert you to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## WARNING:

To prevent fire and shock hazards, do not expose your amplifier to rain or moisture.

**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, stoves, or other appliances 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 plugs, 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.

**16. 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.

**17. Grounding or Polarization** — The precautions that should be taken so that the grounding or polarization of an appliance is not defeated.

**18. Speaker Connection** — To reduce the risk of shock or fire and prevent short circuits, strictly follow the instructions for connecting speakers on p. 6.

## PRECAUTIONS

### 1 LOCATION

Install this unit in a cool, dry, clean place - away from windows (direct sunlight), heat sources, excessive vibration, dust, moisture or cold. Avoid sources of hum such as transformers, motors, etc..

Turn the unit off and disconnect it when moving it.

### 2 VENTILATION

Do not place records or other objects that block ventilation on top of the amplifier as this will cause its internal temperature to rise and may result in damage.

### 3 HANDLING

Do not use force on controls, terminals or cords. Remove plugs by gripping them directly, not by pulling the cord.

### 4 CLEANING

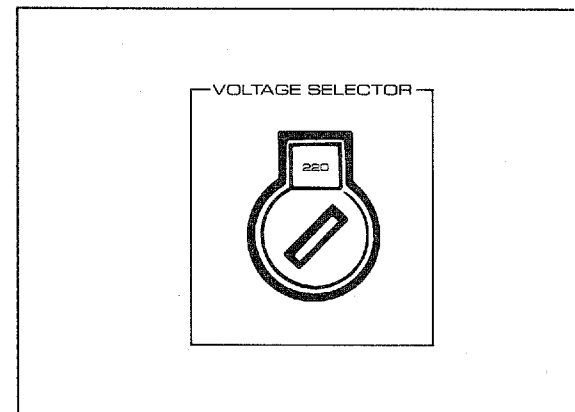
Wipe the exterior with a soft, dry cloth. Never use chemical solvents, as this might damage the finish.

## ■ MODEL VERSIONS

The illustrations on the right show the rear panels of the three types of MX-600/U models. Note that the Australian model has no AC convenience outlet, while the general model is equipped with a selector for voltage conversion.

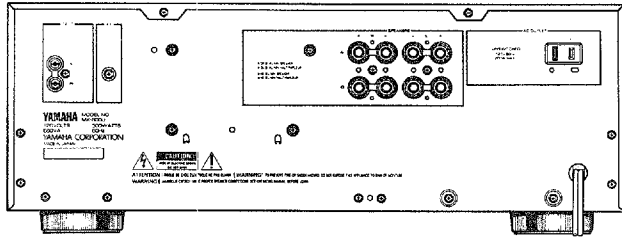
## ■ VOLTAGE SELECTOR (General Model only)

This must be set to your local voltage BEFORE connecting the amplifier to a wall socket. To do so, rotate the selector with a screwdriver until the correct voltage value (110/120 or 220/240) is visible.

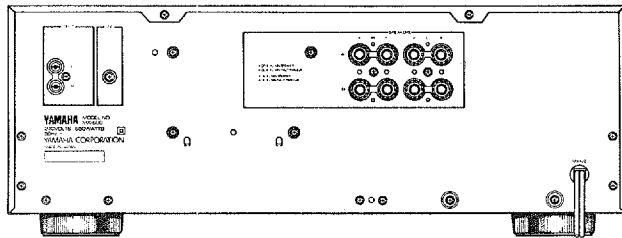


# FEATURES

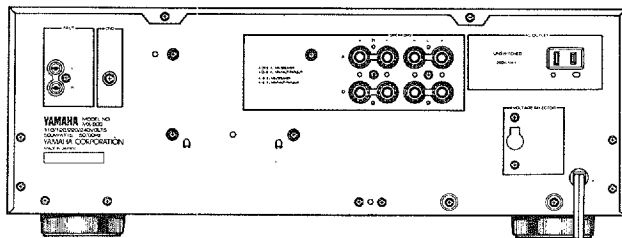
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U.S. & Canadian model



Australian model



General model

- *Hyperbolic Conversion Amplification Circuit*
- *High Dynamic Power*
- *Two-Pair Speaker Support*
- *LED Power Level Meters*
- *Overload Protection Circuitry*

## *About the Hyperbolic Conversion Amplification Circuit*

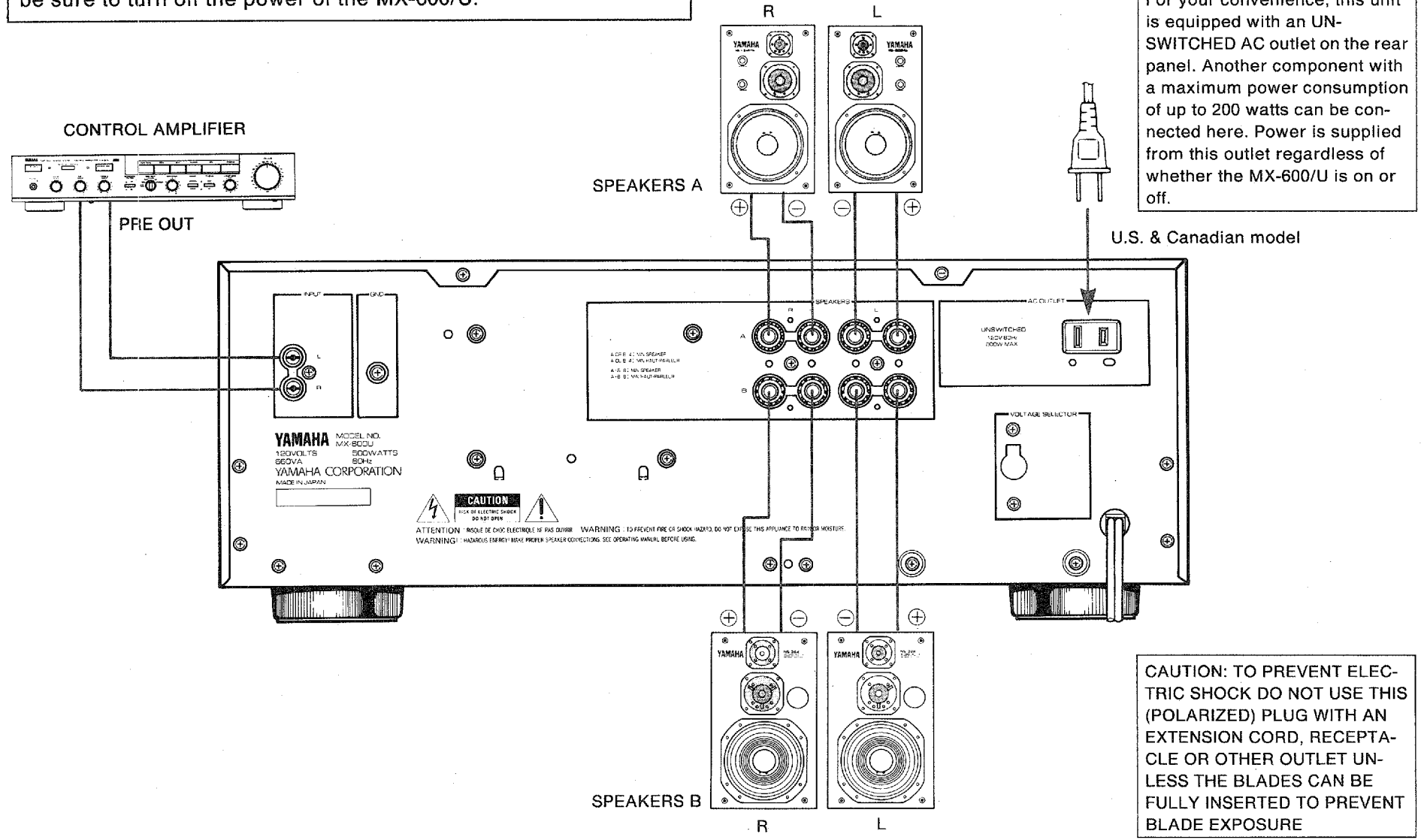
This new kind of circuitry, developed by Yamaha, eliminates the only serious drawback of previous Class A operation amplifiers. These had to switch to non-linear class AB operation above a certain load current, causing a slight deterioration in the otherwise excellent sound quality. The new Hyperbolic Conversion Amplification Circuit does away with this problem, allowing your Yamaha MX-600/U to deliver superior performance constantly, without switching or cut-off, over its entire power range.

# CONNECTIONS

Make sure the left (L) and right (R) channels are connected consistently between components.

**NOTE:**

Before making or altering any of the connections described below, be sure to turn off the power of the MX-600/U.



## CONNECTING A CONTROL AMPLIFIER

Making sure that the control amplifier is also turned off, connect the output jacks (PRE OUT) of your control amplifier to the corresponding INPUT jacks on the rear panel of this unit. Always check that

- a) the RCA plugs of the connecting cord are clean,
- b) the left and right channels of both units correspond,
- c) connections are secure, and
- d) both units are properly grounded.

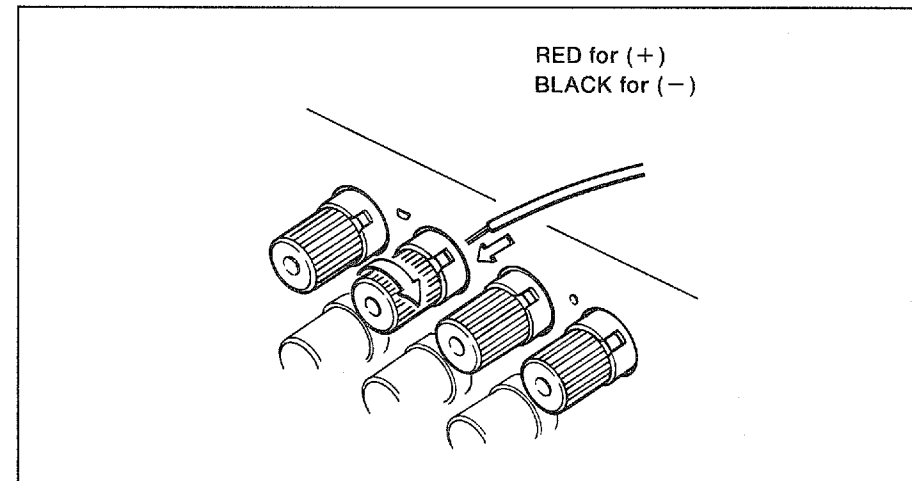
## CONNECTING SPEAKERS

Use only speakers within the rated impedance range indicated on the rear panel next to the SPEAKERS terminals and with adequate power handling capacity.

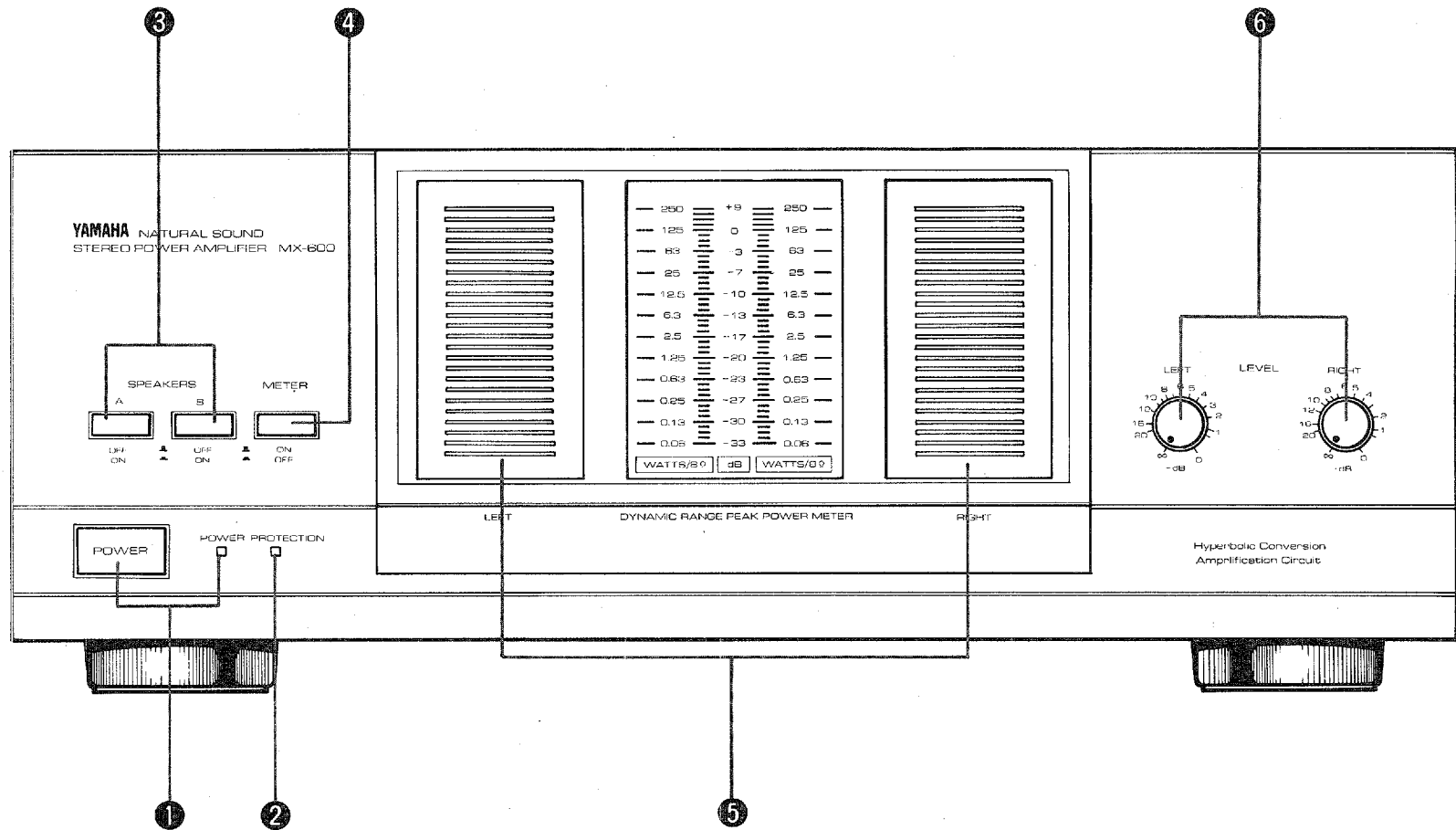
When connecting the speaker cords, observe the “+” and “-” markings on the backs of the speakers and MX-600/U. If the “+” and “-” polarities are reversed, the sound will be unnatural and lack bass.

Speaker cords should be cut as short as possible. Do not coil up excess cord or bundle it with cables from other components.

- Strip approximately 10 mm (3/8”) insulation from the ends of the speaker cords. Partly unscrew the plastic wire holders. Insert the stripped ends of the speaker cords as shown and retighten the holders. Make sure at least 1/16 inch (1.6 mm) of insulation is inside the wire holders (i.e. no exposed wire is visible) and no loose conductor wire strands are protruding after connection. To prevent speaker wires from coming loose, make sure wire holders are firmly screwed in.



# FRONT PANEL CONTROLS AND THEIR FUNCTIONS





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- ① **POWER switch and indicator:** Pressing this switch turns power on, causing the POWER indicator to light. To turn the unit off, press again.
  
  - ② **PROTECTION indicator:** Lights for several seconds after power is turned on, showing that the internal protection circuitry is currently activated. This mutes the output signal to the speakers, preventing the loud noise otherwise heard when switching on the amplifier.
  
  - ③ **SPEAKERS selector switches:** Allow you to select one or, by setting both switches to ON, both of the speaker pairs connected to the A and B terminals.
  
  - ④ **METER switch:** Activates the power peak meter. This display is not illuminated when the METER switch is in the OFF position.
  
  - ⑤ **Power peak meter:** Indicates the power output on a logarithmically compressed scale from 0.06 to 250 watts, independently for the left and right output channels. Readings are accurate for 8 ohm speakers only.
  
  - ⑥ **LEFT and RIGHT LEVEL controls:** These give you independent control over the power output levels to the L and R speakers. This allows you to preset speaker balance for optimum stereo imaging. These controls can also serve to protect speakers with power handling capacity lower than this amplifier's rated output.

# TROUBLESHOOTING

Before assuming that your amplifier is faulty, check the following list. If you still have any doubts or questions, contact your nearest YAMAHA dealer.

Symptom	Possible cause	Remedy
<b>No power even when the POWER switch is ON.</b>	<ul style="list-style-type: none"> <li>● The power cord is not plugged in securely.</li> </ul>	<ul style="list-style-type: none"> <li>● Plug in securely.</li> </ul>
<b>No sound is heard from the left and/or right speaker(s).</b>	<ul style="list-style-type: none"> <li>● The speaker cords are not properly connected.</li> </ul>	<ul style="list-style-type: none"> <li>● Check speaker connections and correct them.</li> </ul>
	<ul style="list-style-type: none"> <li>● Either or both LEVEL controls are set to <math>-\infty</math>dB.</li> </ul>	<ul style="list-style-type: none"> <li>● Adjust the appropriate LEVEL control(s).</li> </ul>
	<ul style="list-style-type: none"> <li>● The cords from the control amplifier are not secure.</li> </ul>	<ul style="list-style-type: none"> <li>● Connect them securely.</li> </ul>
	<ul style="list-style-type: none"> <li>● The control amp's balance is set to the extreme left or right.</li> </ul>	<ul style="list-style-type: none"> <li>● Adjust the control amp's balance control.</li> </ul>
<b>The sound ceases suddenly, and the PROTECTION indicator is lit.</b>	<ul style="list-style-type: none"> <li>● The speaker protection circuit has activated.</li> </ul>	<ul style="list-style-type: none"> <li>● Turn power OFF, then ON again to reset the speaker protection circuit.</li> </ul>
	<ul style="list-style-type: none"> <li>● There is a malfunction in the amplifier.</li> </ul>	<ul style="list-style-type: none"> <li>● Consult your YAMAHA dealer.</li> </ul>
<b>Unnatural sound lacking bass.</b>	<ul style="list-style-type: none"> <li>● The speaker polarities are reversed.</li> </ul>	<ul style="list-style-type: none"> <li>● Connect the speaker wires with the correct + and - polarity.</li> </ul>

# SPECIFICATIONS

## Minimum RMS Output Power Per Channel

20Hz ~ 20kHz	0.003% THD, 8 ohms	U.S.A., Canada	135W
		Australia	125W
		General	125W
	0.007% THD, 6 ohms	U.S.A., Canada	160W
		Australia	150W
		General	150W
	0.02% THD, 4 ohms		190W

## Dynamic Power Per Channel

(by IHF Dynamic Headroom measuring method)

8 ohms	U.S.A., Canada	220W
	Australia	175W
	General	175W
6 ohms	U.S.A., Canada	265W
	Australia	220W
	General	220W
4 ohms	U.S.A., Canada	360W
	Australia	290W
	General	290W
2 ohms	U.S.A., Canada	480W
	Australia	390W
	General	390W
1 ohms	U.S.A., Canada	500W
	Australia	420W
	General	420W

## Dynamic Headroom (U.S.A., Canada only)

8 ohms	2.12dB
6 ohms	2.19dB
4 ohms	2.78dB

## Power Band Width

0.03% THD 62.5W, 8 ohms	10Hz ~ 60kHz
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## Damping Band Width

1kHz, 8 ohms	70
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## Input Sensitivity/Impedance

MAIN IN	1.14V/60k $\Omega$
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## Frequency Response (20Hz ~ 20kHz)

+0, -0.2dB
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## Total Harmonic Distortions (20Hz ~ 20kHz)

MAIN IN to Sp Out, 62.5W/8 $\Omega$	0.003%
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## Intermodulation Distortion

Rated Output/8 ohms	0.003%
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## Signal to Noise Ratio (IHF-A-Network)

MAIN IN (shorted)	123dB
MAIN IN (5.1k $\Omega$ terminated)	119dB

## Residual Noise (IHF-A-Network)

16 $\mu$ V
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## Channel Separation (V01-30dB)

Input shorted, terminated, 1kHz/10kHz	89dB/70dB
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## Power Supply

U.S.A., Canada	AC120V, 60Hz
Australia	AC240V, 50Hz
General	AC110/120/220/240V, 60/50Hz

## Power Consumption

U.S.A., Canada	650W, 800V
Australia	650V
General	500V

## AC Outlet

Unswitched	200W max
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## Dimensions (W x H x D)

435 x 165 x 420mm (17-1/8" x 6-1/2" x 16-17/32")
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## Weight

13kg
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Specifications subject to change without notice.

**YAMAHA**