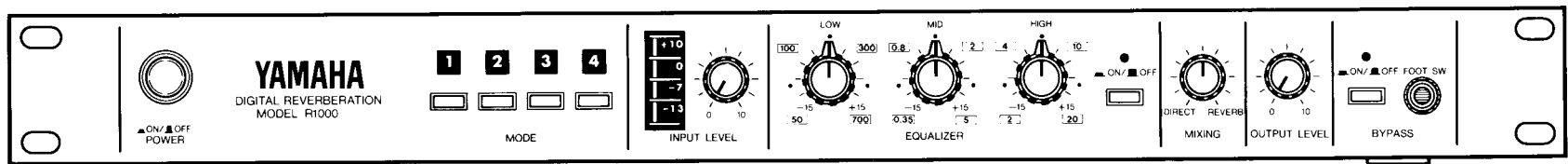


# YAMAHA

# R1000

## DIGITAL REVERBERATION

### OPERATING MANUAL



*Incorporating the most up-to-date advancements in digital signal processing, the Yamaha R1000 brings high performance to a highly versatile and affordable digital reverb unit.*

*The R1000 has been designed for use with a wide range of instruments, stage equipment and mixers. Controls are not only simple, but offer flexible operation as well, reverb and direct sound may be varied continuously in any of four different reverb time settings, and input/output levels adjusted for compatibility with peripheral equipment.*

*For precise acoustical control of music sources under a wide range of conditions, a three-band parametric equalizer enables continuously variable adjustment at low, mid and high frequencies. A 4-segment LED meter is also provided to aid users in tailoring input levels to avoid clipping while maintaining a high signal-to-noise ratio.*

## **WARNING**

**This equipment generates and uses radio frequency energy and if not installed and used properly, i.e. in strict accordance with the instructions manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.**

**Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.**

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## FEATURES

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- Mixing capability ensures versatile, precise adjustment of reverb and direct signals.
- Reverb time setting is easily adjustable by means of selector switch.
- Equipped with foot switch terminal for on-stage bypass switching.
- Three-band parametric equalizer controls enable effective, extremely flexible adjustment from natural reverb sound applications to use as a reverb unit.
- Completely eliminates undesirable physical vibration effects of spring-type reverb units. Operation is highly stable, so unit can be employed in virtually all situations.
- Fully arranged controls, outstanding performance.
  - 4-segment LED meter give clear indication of input levels.
  - Easy in-out connection with outboard equipment.
  - Designed for mounting in standard 19 inch racks.

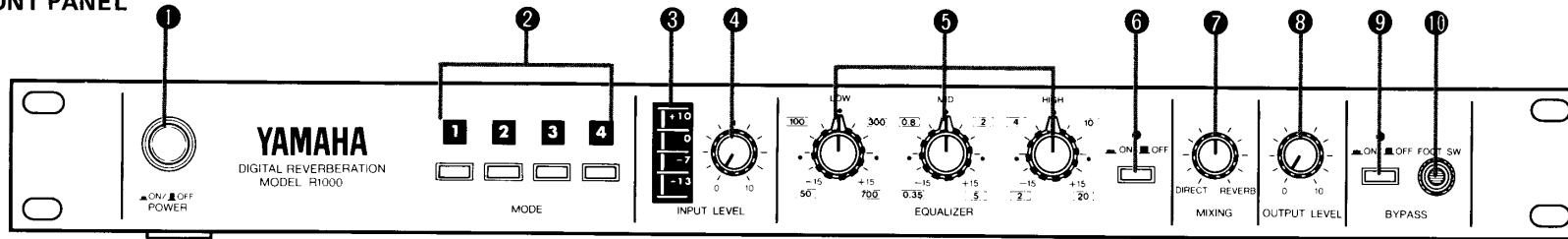
## CAUTION

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- Locate the R1000 out of the direct rays of the sun, avoiding locations subject to vibration and excessive dust, heat, cold or moisture.
- When displacing the instruments, be sure to disconnect the power supply cord and every connecting cord to prevent their breakage and short.
- Do not attempt to clean any accumulations of dirt with chemical solvents (such as alcohol or benzene). Wipe only with a clean completely dry cloth.
- Keep this manual in a safe place for future reference, and refer to it frequently until you are fully familiar with your R1000.
- Voltage Selector switch on the rear of the R1000 must be set for your local mains voltage *BEFORE* plugging in the AC main supply. Voltages are 110-130 or 220-240AC, 50/60Hz. U.S. and Canadian models are not provided with the voltage selector.

# NAMES OF THE PARTS AND THEIR FUNCTIONS

## FRONT PANEL



### 1 POWER SWITCH

Setting this switch on supplies power to the unit. When the power is turned on, one of the four indicators above the MODE selector will light up. The indicator will be extinguished when the unit is turned off.

### 2 MODE SELECTOR

This selects one of four reverb mode selector ranges: 1.5, 1.6, 2.3 and 2.4 seconds. When selected, the corresponding indicator will light up. Delay time from mode 1 through mode 4 becomes progressively longer, enabling more realistic effects when performing in large auditoriums or concert halls.

Select the mode by preference of reverb tone and time.

### 3 INPUT LEVEL METER

This meter lights to display the level of the input signals transiting the level selector switch → input level control → and insert in/out terminals, or the insert in signals. When using the INSERT IN terminals, the meter displays the level of the INSERT IN signals.

### 4 INPUT LEVEL CONTROL

This knob controls the level of the input signals. To obtain a high signal/noise ratio and a wide dynamic range, it is important to set the input level as high as possible between 7 and 8 and without allowing the +10dB lamp of INPUT LEVEL METER to light.

When peaking the equalizer, set the input level lower so that clipping margin of the equalizer circuit is provided.

### 5 EQUALIZER

The parametric equalizer enables a wide range of reverb effects. Setting may be made within a maximum of 15dB peak or dip. Center frequencies are as follows:

LOW ..... 50Hz ~ 700Hz

MID ..... 350Hz ~ 5kHz

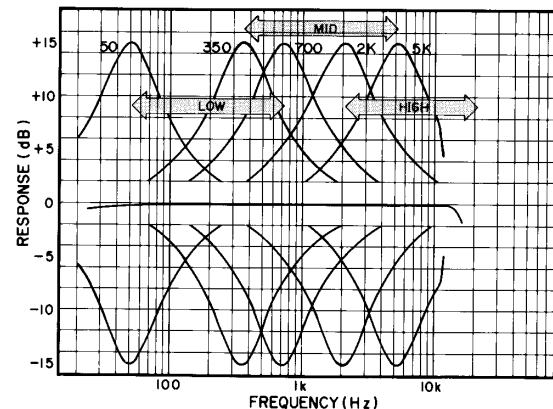
HIGH ..... 2kHz ~ 20kHz

Equalization may be varied continuously in each respective band. User can produce sound at will by first setting the equalizer to peaking or dipping position and then sweeping through the standard frequency.

### 6 EQUALIZER SWITCH

By setting the switch on, the indicator above the switch will light, enabling control over each band. With the switch off, a "flat" signal is reproduced. A better signal/noise ratio will be obtained by switching the equalizer off rather than setting each of the equalizer controls to the "0" position.

### • EQUALIZER RESPONSE (Reverberation Signal)



## 7 MIXING CONTROL

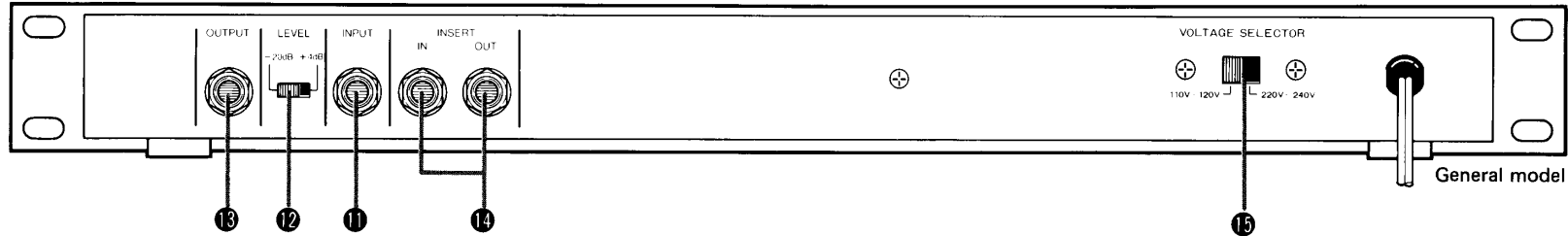
This knob controls the mixing balance between the direct and reverb signals.

Rotating the knob towards the DIRECT position (i.e., to the left) emphasizes the direct sound source. Set at the DIRECT position, only direct signals are obtained. Rotating the knob towards REVERB (i.e., to the right) emphasizes the reverb sound source. Turning all the way to the REVERB position will reproduce reverb sounds only.

## 8 OUTPUT LEVEL CONTROL

This knob controls the output level. However, it has no effect on the output level of the bypass signals. Use the output level control to adjust the volume balance of the bypass signals (with the BYPASS switch set to on or off) and reverb signals.

### REAR PANEL



## 11 INPUT

The input terminal is an unbalanced type phone jack with 50 Ohms input impedance, and a rated input level of +4dB/-20dB.

Connection should be made to a keyboard or mixer. If connection is desired with an electric guitar or low-level, high-impedance unit, use of a preamplifier or effector will be required.

## 12 LEVEL SELECTOR SWITCH

This switch is set in response to the input and output levels of the connected equipment.

Setting the switch sets both input and output stages to either +4dB or -20dB; this prevents any difference in level between this unit's input stage and the equipment connected to the output.

## 13 OUTPUT

The output terminal is an unbalanced type phone jack with 100 Ohms output impedance, and a rated output level of +4dB/-20dB.

Rated output is obtained with the INPUT and OUTPUT level controls both set to the "7" position (i.e., INPUT/OUTPUT is 1:1).

## 9 BYPASS SWITCH

When this switch is set to ON, the indicator lamp above the switch will light, meaning that the input signals are bypassing the reverb and equalizer stages, and supplied directly to the OUTPUT terminals.

## 10 FOOT SWITCH TERMINALS

This terminal is for connecting a foot switch which will enable remote operation of bypass on/off switching.

Connection of a foot switch to this terminal overrides operation of the bypass switch on the front panel.

Connection is made from here to the mixer or power amplifier. Even with the front panel's POWER switch turned off, signals will transit directly from input to output.

## 14 INSERT IN/OUT

By inserting a plug into the INSERT in jack, internal circuitry is shorted, and the inserted signals may be applied to the input. This may be employed when using compressor, fader or other types of effector equipment.

**INSERT IN:** input impedance and rated input level is 100 kOhms/-6dBm.

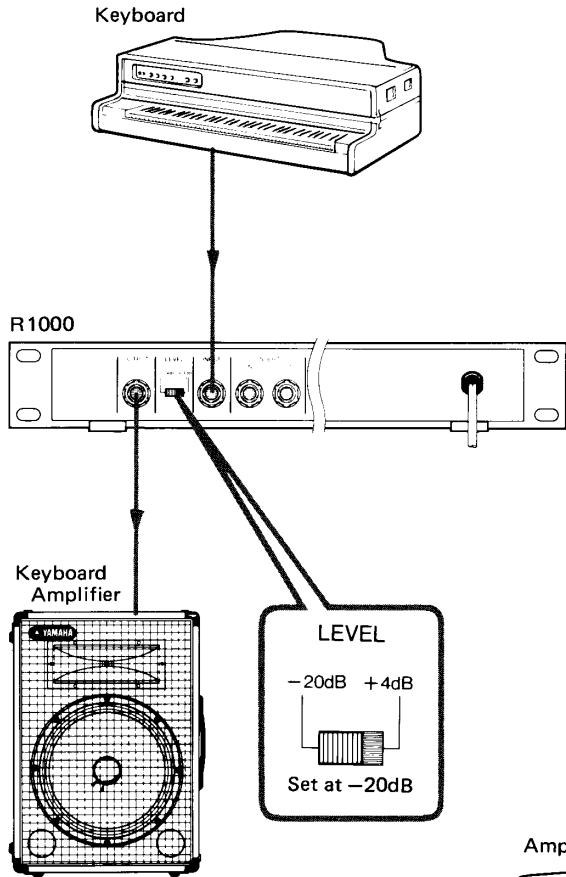
**INSERT OUT:** output impedance and rated output level is 100 Ohms/-6dBm.

## 15 VOLTAGE SELECTOR (GENERAL MODEL ONLY)

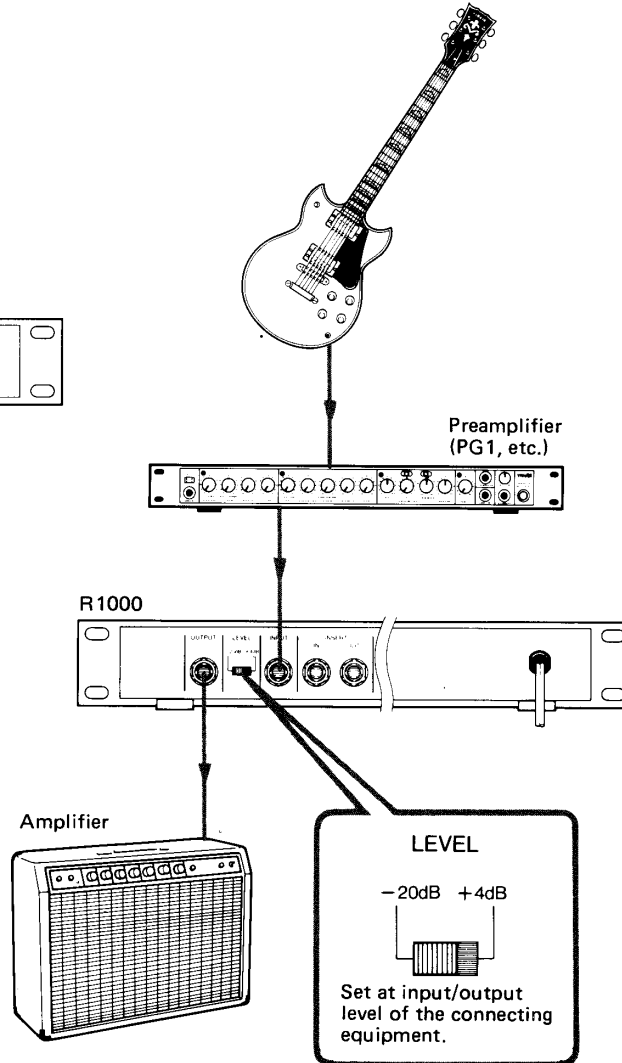
Set this to your local AC mains voltage. Failure to do so will result in seriously impaired performance or even severe damage.

# CONNECTION DIAGRAM

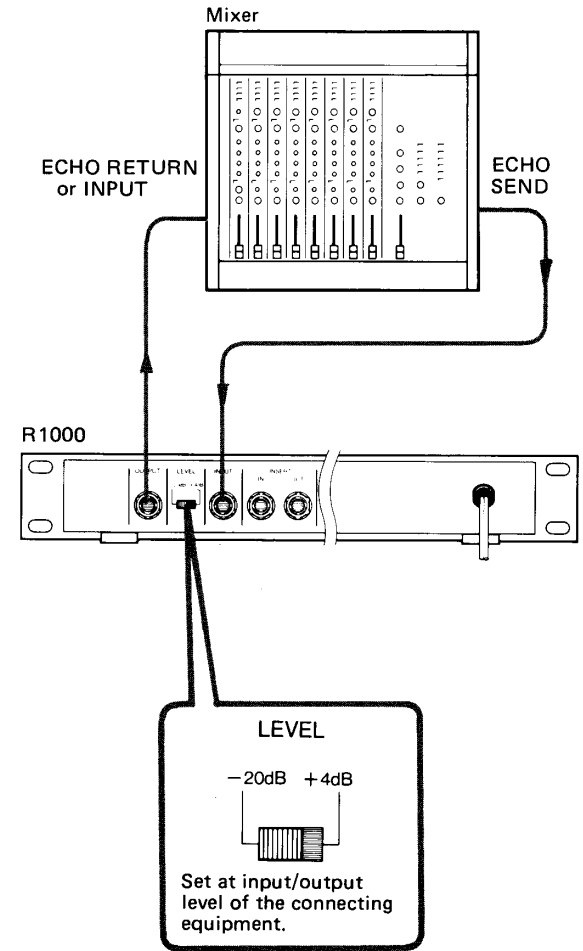
## ■ In Connection with Keyboard



## ■ In Connection with Electric Guitar



## ■ In Connection with Mixer



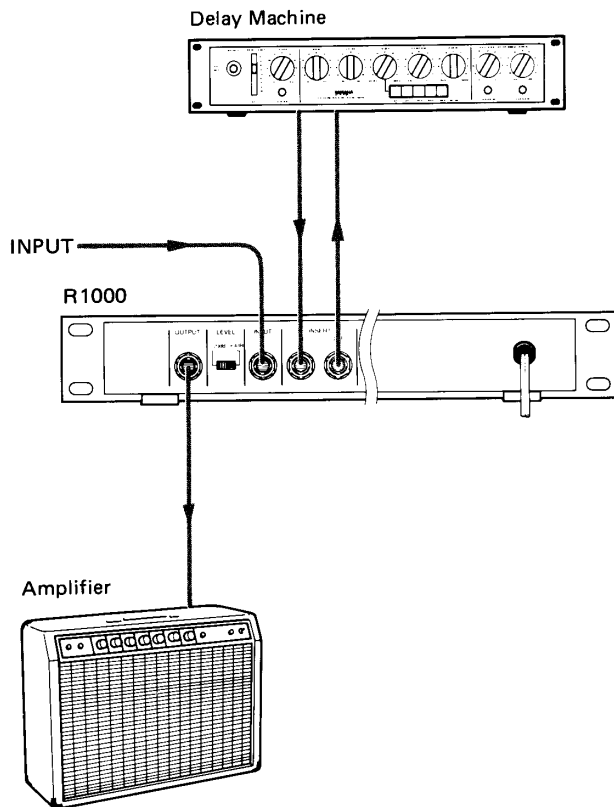
# CONNECTIONS FOR USE WITH DELAY MACHINE

**PRE DELAY :** The delay perceived from room acoustics is not produced at the moment just after the direct signal; rather, it "retains" the signal over that period and amplifies it.

This results in a more natural sound quality, with more pronounced reverb effect. Delay time may be set at any point between several to 10 milliseconds.

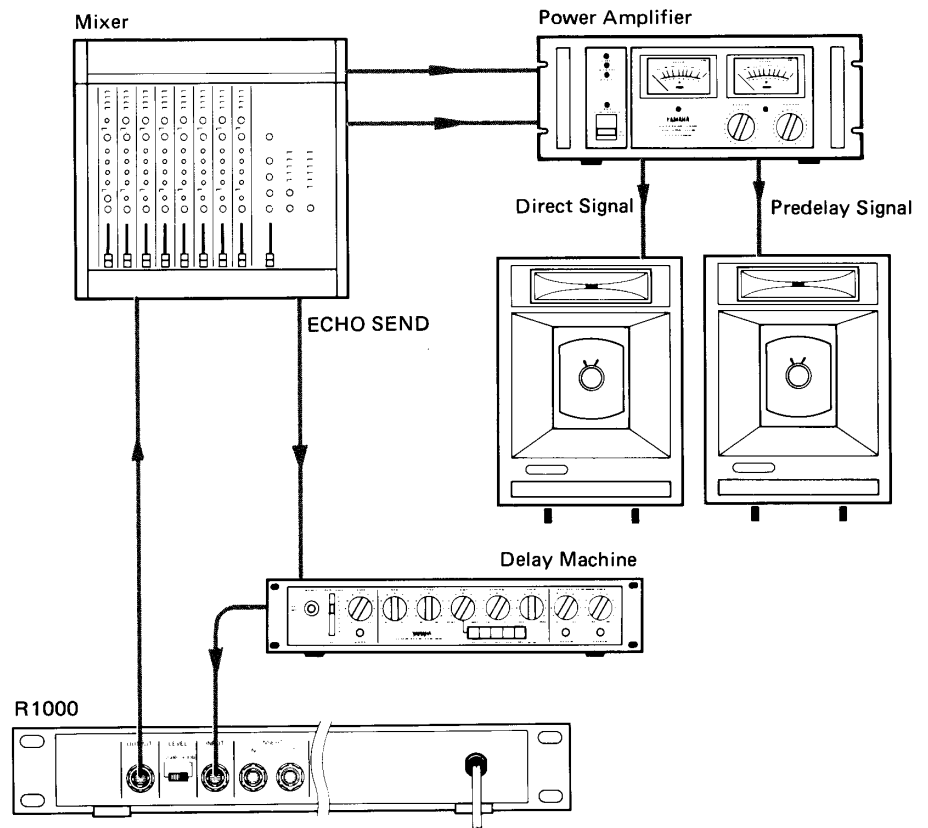
## ■ When not employed with mixer

Balance of the pre-delay and direct signals is adjusted by the mixing control.



## ■ When employing with mixer

Using the pan-pot, the direct and pre-delay signals are separated into left and right channels, enabling enhanced sonic dispersion.



# SPECIFICATIONS / BLOCK DIAGRAM

## SPECIFICATIONS

<b>Frequency Response</b>		
Direct	20Hz ~ 20kHz	0 <sup>+1</sup> / <sub>-2</sub> dB
Reverb.	30Hz ~ 10kHz	0 <sup>+1</sup> / <sub>-2</sub> dB
<b>Dynamic Range</b>		
	75dB (Output Level Control at nominal)	
<b>Hum &amp; Noise*</b>		
Direct	-60dB	
Reverb.	-50dB (Output Level Control at maximum)	
<b>Reverberation Time</b>		
	MODE 1: 1.5 sec.	
	MODE 2: 1.6 sec.	
	MODE 3: 2.3 sec.	
	MODE 4: 2.4 sec.	
<b>Input</b>		
Input terminal	Unbalanced (Phone Jack)	
Impedance	50kΩ	
Level	+4/-20dB	
<b>Output</b>		
Output terminal	Unbalanced (Phone Jack)	
Impedance	100Ω	
Level	+4/-20dB	
<b>Insert In</b>		
Insert In terminal	Unbalanced (Phone Jack)	
Impedance	100kΩ	
Level	-6dB	

<b>Insert Out</b>	
Insert Out terminal	Unbalanced (Phone Jack)
Impedance	100Ω
Level	-6dB
<b>Equalizer</b>	
Low	±15dB (50Hz ~ 700Hz)
Mid	±15dB (350Hz ~ 5kHz)
High	±15dB (2kHz ~ 20kHz)
<b>Power Requirements</b>	
U.S. & Canadian Models	120V AC, 60Hz
General Model	110 ~ 120 or 220 ~ 240 AC Selectable, 50/60Hz
<b>Power Consumption</b>	
U.S. & Canadian Models	26W
General Model	26W
<b>Dimensions</b>	
(W x H x D)	480 x 45 x 311.5 mm (18-7/8 x 1-3/4 x 12-1/4)
<b>Weight</b>	
	4.8 kg (10.6 lbs)

\* Hum and Noise are measured with a 6dB/octave filter at 12.47kHz.  
 ● 0dB is referenced to 0.775 Vr.m.s.  
 ● Specifications subject to change without notice.

## BLOCK DIAGRAM

