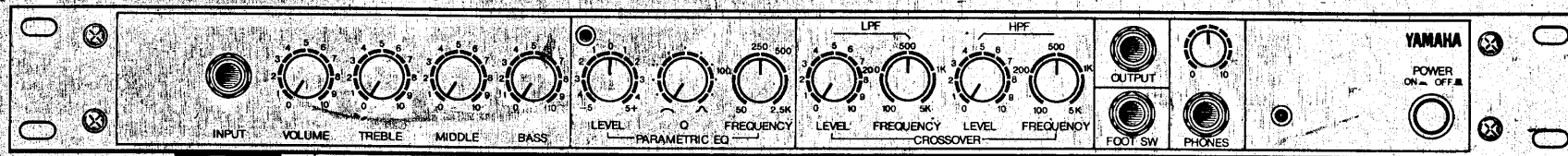


YAMAHA PB1

BASS AND INSTRUMENT PREAMPLIFIER



OWNER'S MANUAL

INTRODUCTION

The PB 1 Component Bass Preamplifier gives the musician the unique opportunity to control his bass guitar sound completely. You'll begin to see a whole new range of expressive possibilities in your instrument.

The PB 1 offers standard volume, treble, middle and bass controls — plus a full parametric equalizer system and independent variable high- and low-pass filters that permit a broad range of bi-amping applications.

The parametric equalizer section features independent level, "Q" and frequency controls that let you contour your sound in virtually any way you like. And the filters — essentially a built-in electronic crossover network — have independent frequency and level controls for both high-pass and low-pass bands.

Naturally, independent HPF and LPF outputs are provided from the crossover section. When you're not bi-amping, there are both unbalanced 1/4" phone plug and balanced XLR outputs for connection to any power amplifier or sound reinforcement system.

Send and return jacks are also provided for insertion of external signal-processing equipment, and a built-in headphone amplifier with an independent level control which permits private monitoring.

Find out just how broad a sonic spectrum your bass guitar can really cover with the Yamaha PB 1.

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PRE-USE CAUTION

- We recommend that you read the entire operating manual. Be sure to keep it in a safe place.
 - Before turning ON the power switch or plugging in the A.C. power cord, be sure to turn the volume all the way down.
 - When connecting a instrument, be sure to plug the connecting cord into the instrument first and then plug the other end into the PB 1. Plugging the instrument in last may harm your speakers.
 - Before connecting the PB 1 to a power amplifier or other auxiliary equipment, be sure to turn OFF the power on the PB 1. Also, when applying power, turn ON the PB 1 first and other equipment LAST.
- VOLTAGE SELECTOR**
(General Model only)
- Before turning the unit ON, make sure that the rear-panel voltage selector is properly set according to the line voltage in your area.

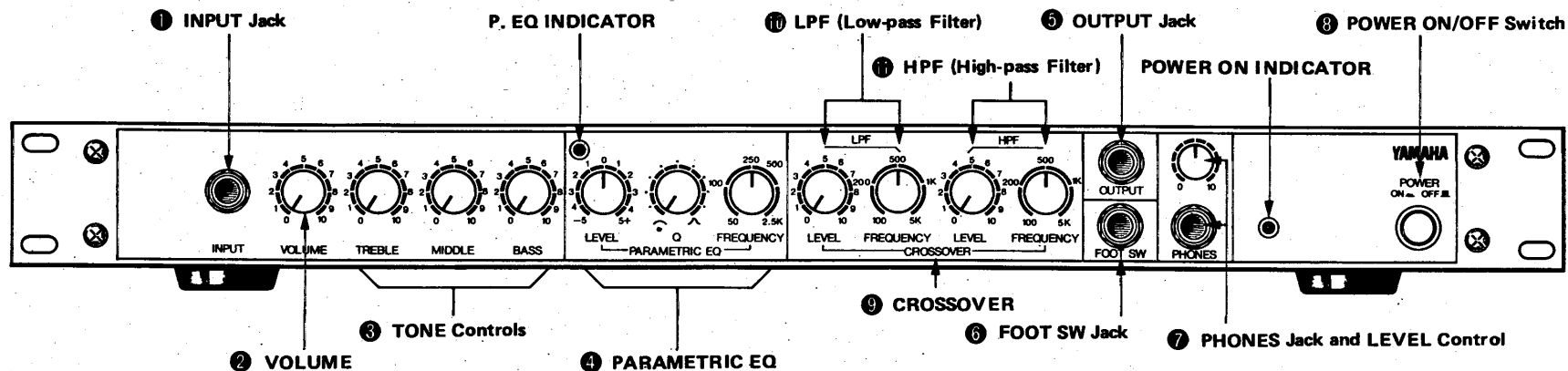
SPECIFICATIONS

GAIN	47dB (input to output at 1 kHz) 64dB (input to send output at 1kHz) 68dB (input to balanced output at 1 kHz) 15dB (return input to output)
NOISE	Less than -86dB (all volumes at Min) Less than -60dB (VOLUME, TREBLE, MIDDLE, BASS at Max)
PARAMETRIC EQ.	LEVEL control ± 15 dB Q control 0.35 ~ 3.0 FREQUENCY control 50 Hz ~ 2.5 kHz
LPF	FREQUENCY control 100 Hz ~ 5 kHz -12dB/oct.
HPF	FREQUENCY control 100 Hz ~ 5 kHz -12dB/oct.
CONTROLS (front panel)	VOLUME, TREBLE, MIDDLE, BASS, P. EQ(LEVEL/Q/ FREQUENCY), LPF LEVEL, LPF FREQUENCY, HPF LEVEL, HPF FREQUENCY, PHONES LEVEL, POWER SWITCH
(rear panel)	RETURN LEVEL, SEND LEVEL, BALANCED LEVEL, GROUND (LIFT) SWITCH, GROUND POLARITY SWITCH (U.S. and Canadian Models only) VOLTAGE SELECTOR (General Model only)
FOOT SW, JACK	P. EQ. ON/OFF
INPUT	INPUT JACK -20dB RETURN INPUT JACK -20dB
OUTPUT	OUTPUT JACK (front panel) 0dB/10 k ohms OUTPUT JACK (rear panel) 0dB/10 k ohms PHONES OUTPUT JACK -1dB/8 ohms LPF OUTPUT JACK 0dB/10 k ohms HPF OUTPUT JACK 0dB/10 k ohms SEND OUTPUT JACK 0dB/10 k ohms BALANCED OUTPUT XLR-3-32 0dB/600 ohms
POWER REQUIREMENTS	U.S. and Canadian Models : 120V AC, 60Hz 15W General Model: 110/120, 220/240V AC, 50/60Hz 15W
DIMENSIONS (W x H x D)	480 x 54 x 255 mm (18-7/8" x 2-1/2" x 10")
WEIGHT	4.8 kg (10.56 lbs)

* 0dB is referenced to 0.775V RMS. * Measured with a 6dB/octave filter @ 12.47 kHz.

Specifications subject to change without notice.

FRONT PANEL CONTROLS



1 INPUT Jack

Plug in the bass guitar or instrument here.

2 VOLUME

Controls overall volume level.

3 TONE Controls (TREBLE, MIDDLE, BASS)

These control the level of the high, middle, and low frequencies respectively. Set them to produce the desired tone quality.

* If all three controls are turned down all the way, no sound will be produced.

4 PARAMETRIC EQ

• LEVEL

Sets the amount of boost or cut at the frequency specified with the FREQUENCY control over a ± 15 dB range. Response is flat when the control is in the "0" position, boosted ($\cap$) in the "+" position, and cut ($\cup$) in the "-" position.

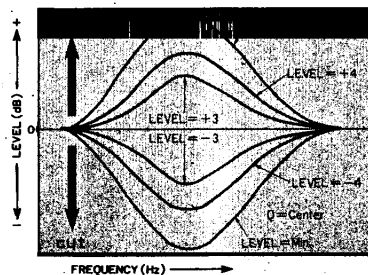
• Q

Set the equalized frequency range to either wide ($\cap$) or narrow ($\cup$). As the control is turned to the right, the frequency range becomes narrower, so only those frequencies in the immediate vicinity of the center frequency will be boosted or cut.

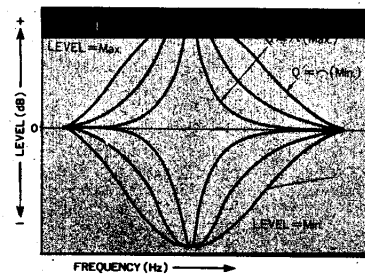
• FREQUENCY

Determines the equalizer's center frequency. The PB 1's adjustment range is 50 Hz to 2.5 kHz. When the foot switch is used, light will come on when the P. EQ is in use.

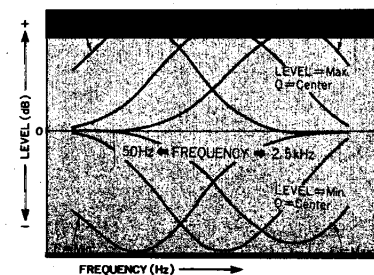
• LEVEL CONTROL



• Q CONTROL



• FREQUENCY CONTROL



⑤ OUTPUT Jack

The signal is output here after passing through the volume control, the tone controls, and the parametric equalizer. This jack can be used in parallel with the rear panel output jack.

⑥ FOOT SW Jack

Plugging in a foot switch here allows the parametric equalizer to be turned on and off remotely.

⑦ PHONES Jack and Level Control

Plug in headphones for practice or monitoring while on stage. Be sure to use low-impedance headphones.

⑧ POWER ON/OFF Switch

Main power switch. Turning on power lights the POWER indicator.

⑨ CROSSOVER (LPF, HPF)

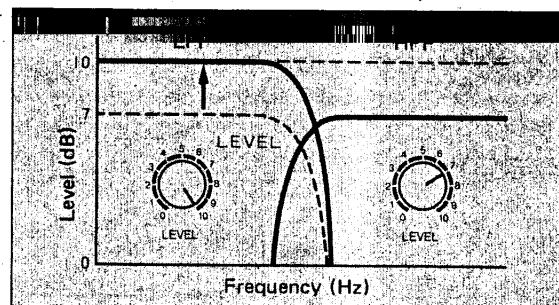
This unit has a built-in crossover that allows it to be used with two power amps and two speaker systems. In this case, the LPF and HPF levels and crossover frequencies (cutoff frequencies) can be adjusted individually. The main output should be used when only one amp and speaker system is used.

⑩ LPF (Low-pass Filter)

• LEVEL

Adjusts the output level of the low-pass filter. Together with the HPF level control, it can be used to

compensate for room acoustics or differences in efficiency between amplifier systems.



• FREQUENCY

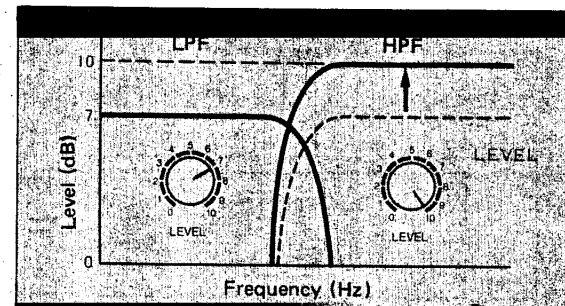
Adjusts the crossover frequency (cutoff frequency) of the low-pass filter. Refer to the specifications of the speaker systems to be used and determine the optimum crossover frequency. The adjustment range is 100 Hz to 5 kHz, and the attenuation slope is -20 dB/oct.

⑪ HPF (High-pass Filter)

• LEVEL

Adjusts the output level of the high-pass filter. Together with the LPF control, it can be used to

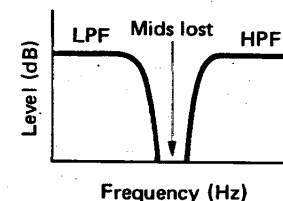
compensate for room acoustics or differences in efficiency between amplifier systems.



• FREQUENCY

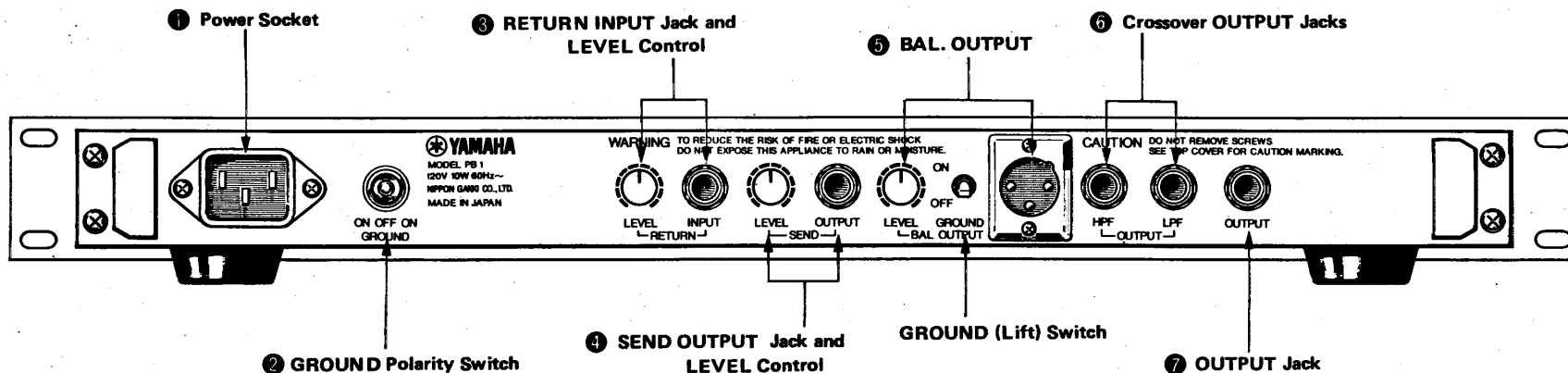
Adjusts the crossover frequency (cutoff frequency) of the high-pass filter. Refer to the specifications of the speaker systems to be used and determine the optimum crossover frequency. The adjustment range is 100 Hz to 5 kHz, and the attenuation slope is -12 dB/oct.

*This unit's LPF and HPF cutoff frequencies can be individually adjusted to provide optimum performance with the speaker systems being used. Be careful not to set the HPF frequency too far above the LPF frequency as this will result in mid frequencies being lost.

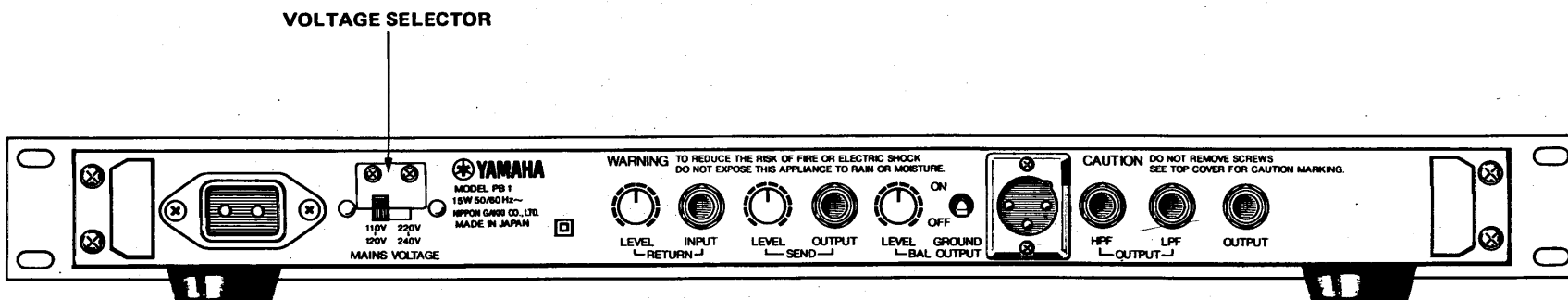


REAR PANEL CONTROLS AND CONNECTIONS

U. S. and CANADIAN Models

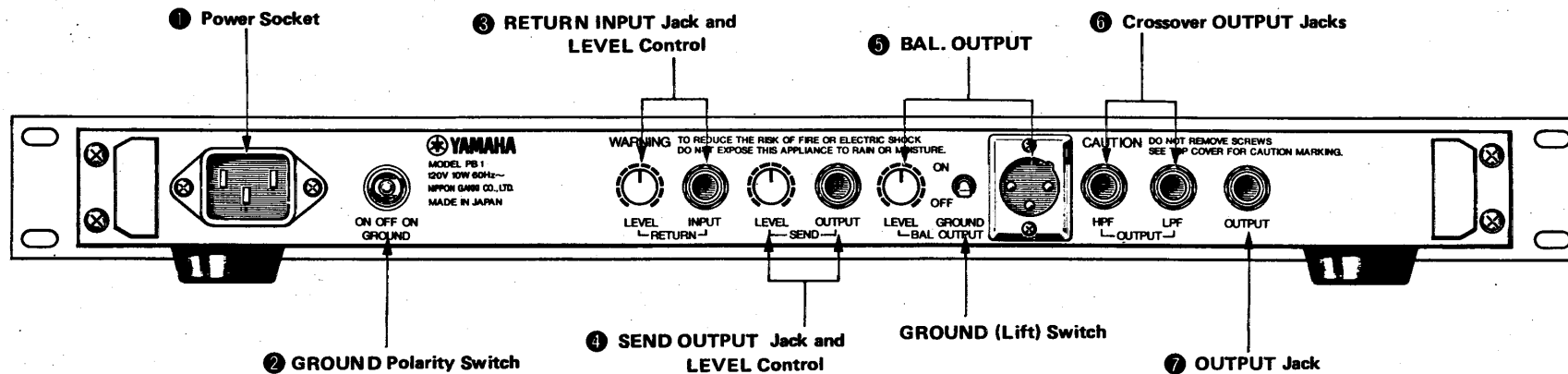


General Model

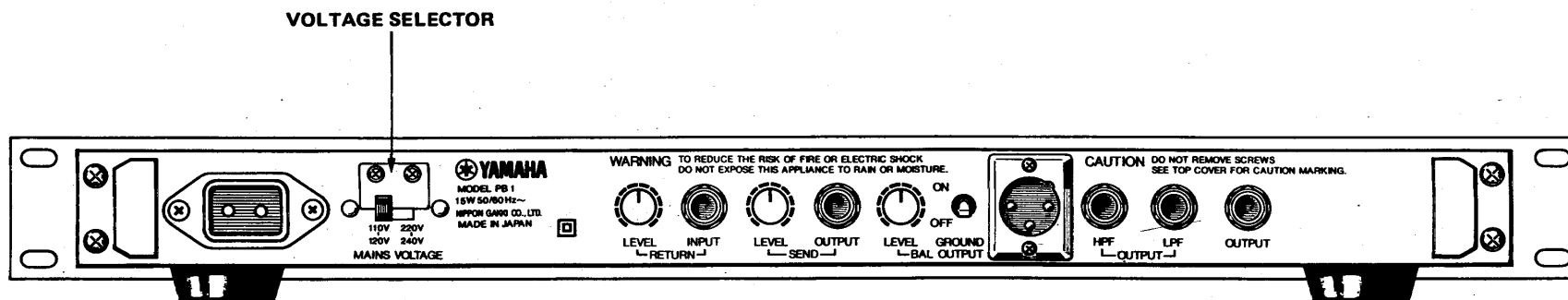


REAR PANEL CONTROLS AND CONNECTIONS

U. S. and CANADIAN Models



General Model



① Power Socket

Plug the A.C. cord in here.

② GROUND Switch

(U. S. & Canadian Models only)

Normally set to the center off position. If noise or hum is a problem, try setting the switch to the left or right position.

③ RETURN INPUT Jack and LEVEL Control**④ SEND OUTPUT Jack and LEVEL Control**

When an auxiliary effects is being used, it should be connected between the send output and the return input. Use the send and return level controls to match to the levels properly.

⑤ BAL. OUTPUT

This is a low-impedance, 600 ohms line output with level control. The matching connector is an XLR female type, perfect for connection to professional sound reinforcement and recording equipment. If a ground loop between the PB 1 and the connected equipment causes hum, try setting the GROUND (Lift) switch to OFF. Otherwise the switch should be ON.

⑥ Crossover OUTPUT Jacks (LPF, HPF)

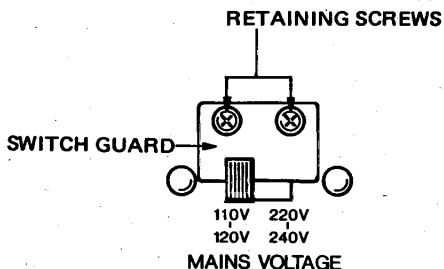
Crossover signals are for driving multiple speaker systems. Connect a 2-channel power amp or two monaural amps.

⑦ OUTPUT Jack

This is connected in parallel with the front-panel output jack. Connect a power amp or a speaker system with a built-in amp.

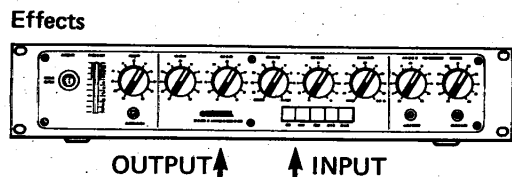
**VOLTAGE SELECTOR
(GENERAL MODEL ONLY)**

If your PB 1 has a voltage selector, check that it is set to your local voltage before you plug it in. If not properly set, unscrew the two switch-guard retaining screws, and reset the switch to indicate your supply voltage (110 to 120V or 220 to 240V). After setting the voltage selector switch to the correct voltage, replace the switch guard and attach it with two retaining screws.



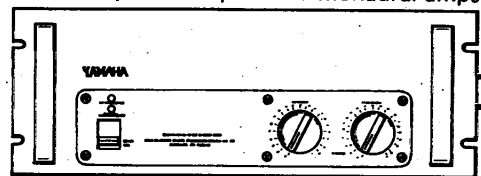
EXAMPLE SETUP

■ Send and return connections

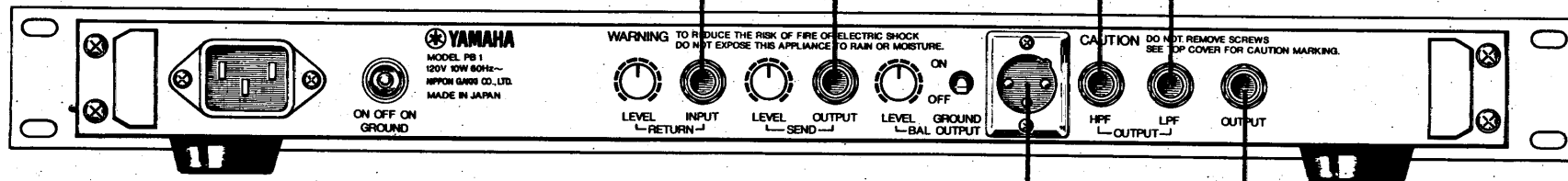
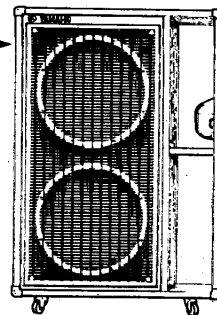
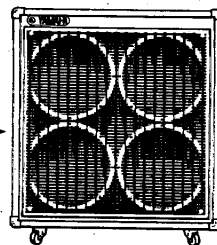


■ HPF, LPF connections (connections for multiple speakers)

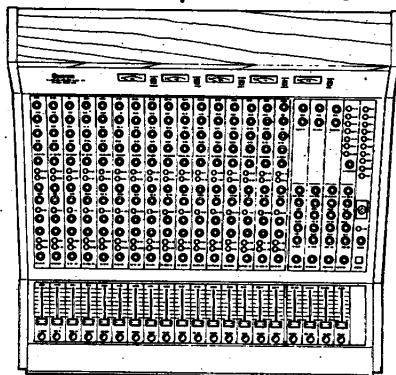
2-channel power amp or two monaural amps



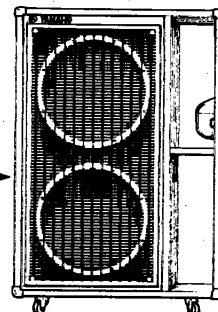
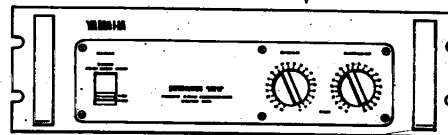
LPF output to low-frequency speaker



■ Balanced output connections

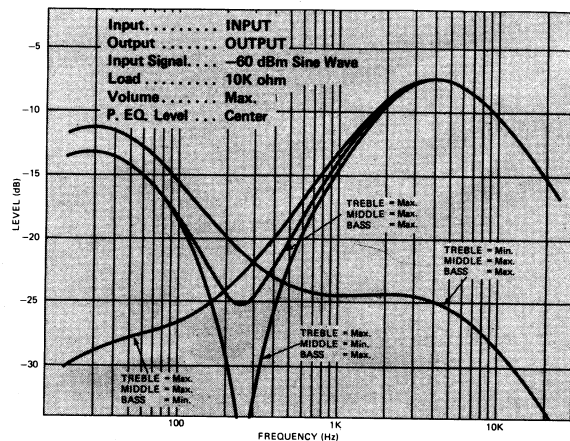


Power amp or speaker system with built-in amp

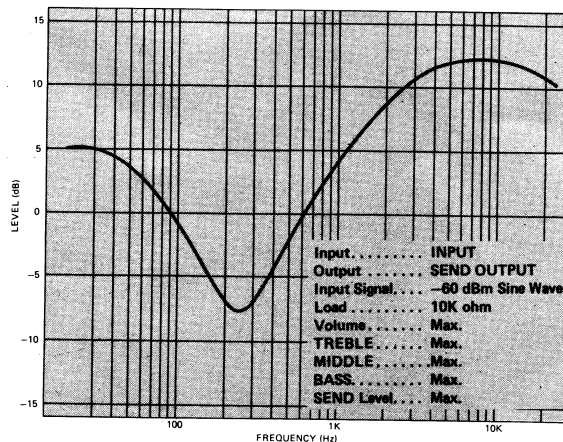


FREQUENCY RESPONSE GRAPHS

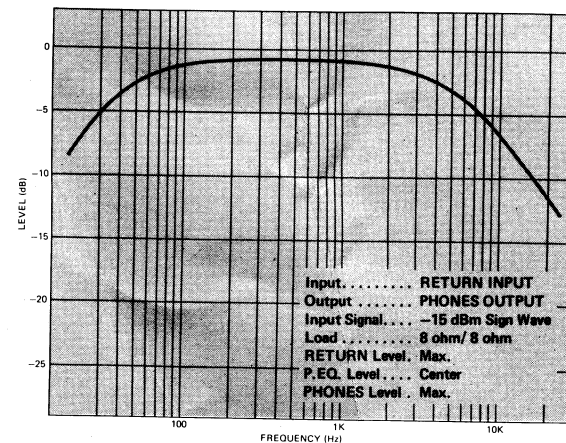
INPUT→OUTPUT



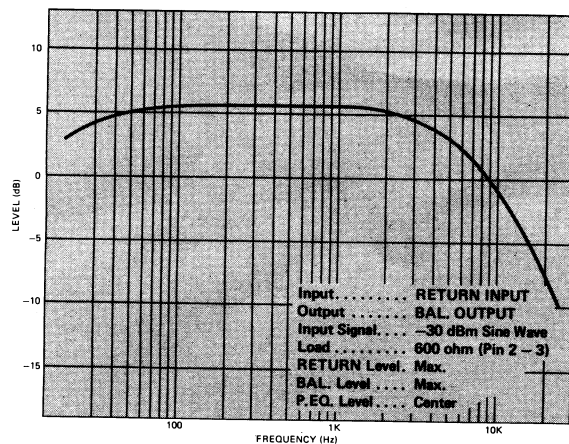
INPUT→SEND OUTPUT



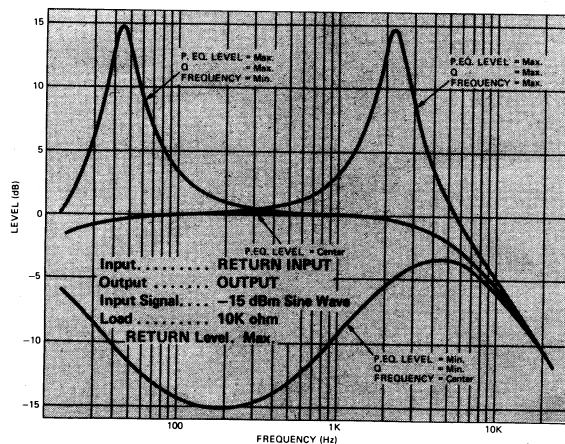
RETURN INPUT→PHONES OUTPUT



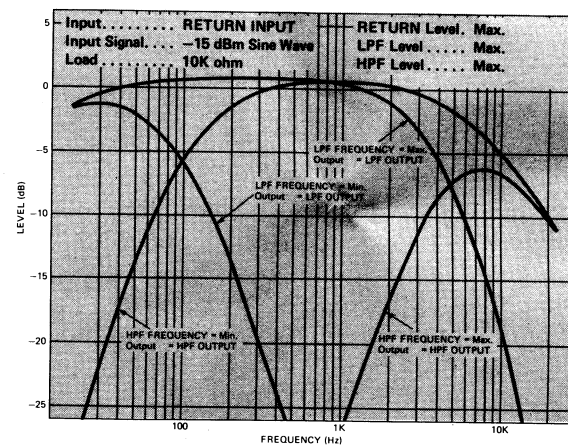
RETURN INPUT→BALANCE OUTPUT



PARAMETRIC EQUALIZER



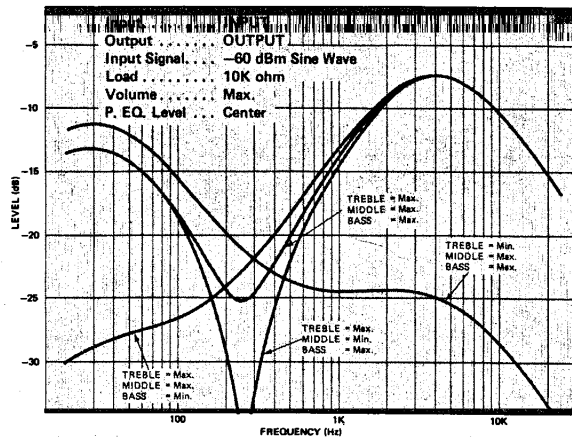
LPF, HPF



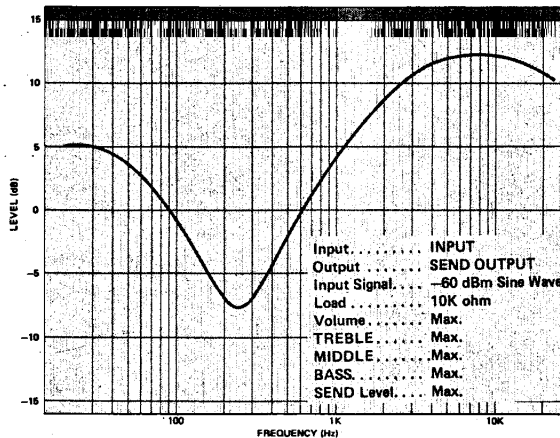
* Input Signal 0 dB is referenced to 0.775 V RMS.

FREQUENCY RESPONSE GRAPHS

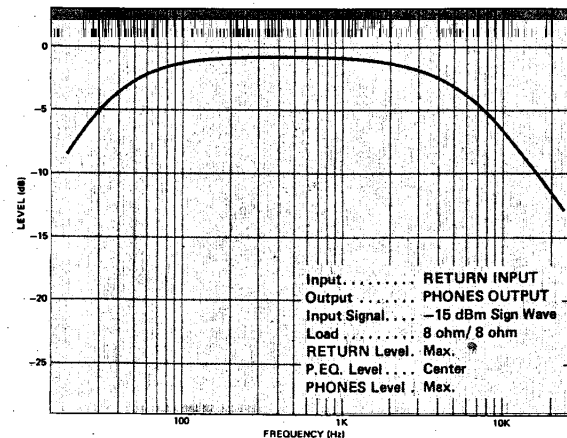
INPUT→OUTPUT



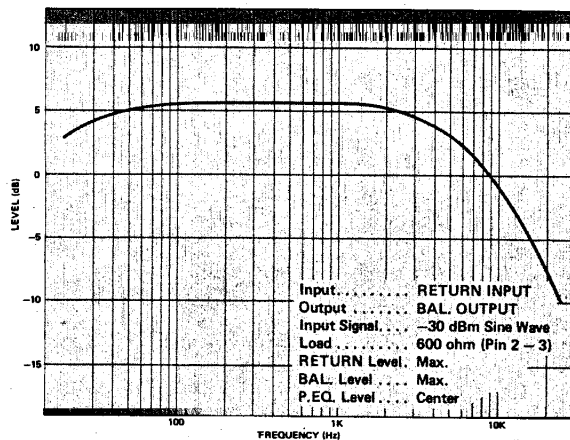
INPUT→SEND OUTPUT



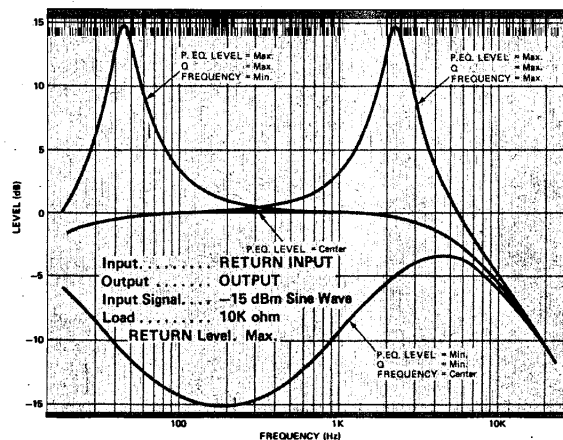
RETURN INPUT→PHONES OUTPUT



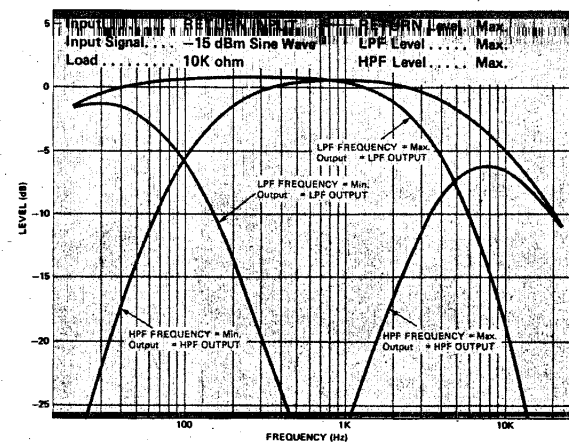
RETURN INPUT→BALANCE OUTPUT



PARAMETRIC EQUALIZER



LPF, HPF



* Input Signal 0 dB is referenced to 0.775 V RMS.

BLOCK DIAGRAM

