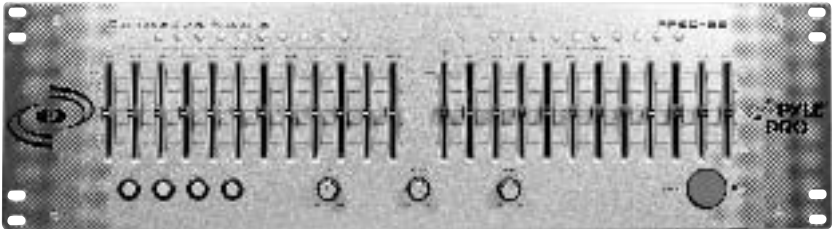


# **PYLE<sup>®</sup>** **PRO**

**24 CONTROLS 12-BAND  
STEREO GRAPHIC EQUALIZER**



**MODEL:PPEQ-86**

**OWNER'S MANUAL**

## **INTRODUCTION**

**PPEQ-86** narrow band frequency balance controls provide an infinite frequency response variations to allow you matching your speakers to your room, reducing or eliminating inadequacies in your high fidelity music system, tailoring the reproduction of music in accordance to your choice.

**PPEQ-86** can enhance your sound system in the following ways:

Any system suffering from rumble or low frequency overload can be remedied by attenuating the lowermost controls of the equalizer. With little in the way of fundamentals below 30Hz, it is unlikely you will miss any of the music.

Noises due to the scratches on the record surface or even the hiss on the tape can be eliminated or reduced by bringing down the control level at 9 KHz. Even Dolby processed tape or encoded FM Broadcasts can be compensated for the boosted highs.

Tonal quality of Broadcasting Stations that attenuate or accentuate either highs or lows can be equalized for pleasant listening. High performance recording tapes that require special equalization in playback can be accommodated by appropriate adjustments on the controls of **PPEQ-86**.

Phono cartridge or speaker inadequacies can be corrected for pleasant listening. Find the correct slide control on your **PPEQ-86** and move it up or down a few dB.

In cases, when you want to hear the vocalist or any specified musical sound, louder, the **PPEQ-86** can give you perfect satisfaction.

## **INSTALLATION**

### **CAUTIONS:**

- (1) The unit should connect to an AC out-let providing the proper voltage of 120 V, 220 V AC/60Hz, 50Hz.
- (2) If your sound system does not provide a tape monitor function, it will not be possible to connect the equalizer with your sound system.

Please refer to Fig. (1) or Fig. (2) installation instruction picture for connecting the equalizer with your sound system and be sure.

- \* Set the tape monitor control switch of the sound system to ON position.
- \* Set the loudness control switch of the sound system to OFF position.

**CONNECTIONS:  
CONDITION 1.**

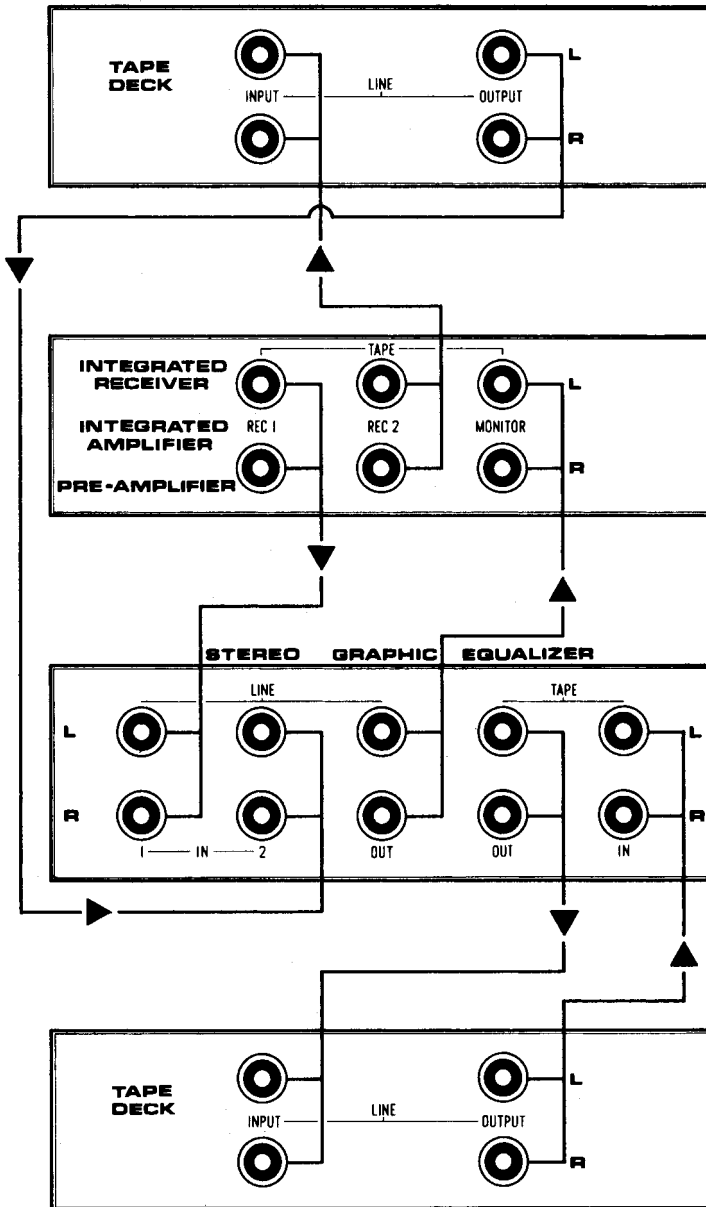


Fig. 1

CONDITION 2.

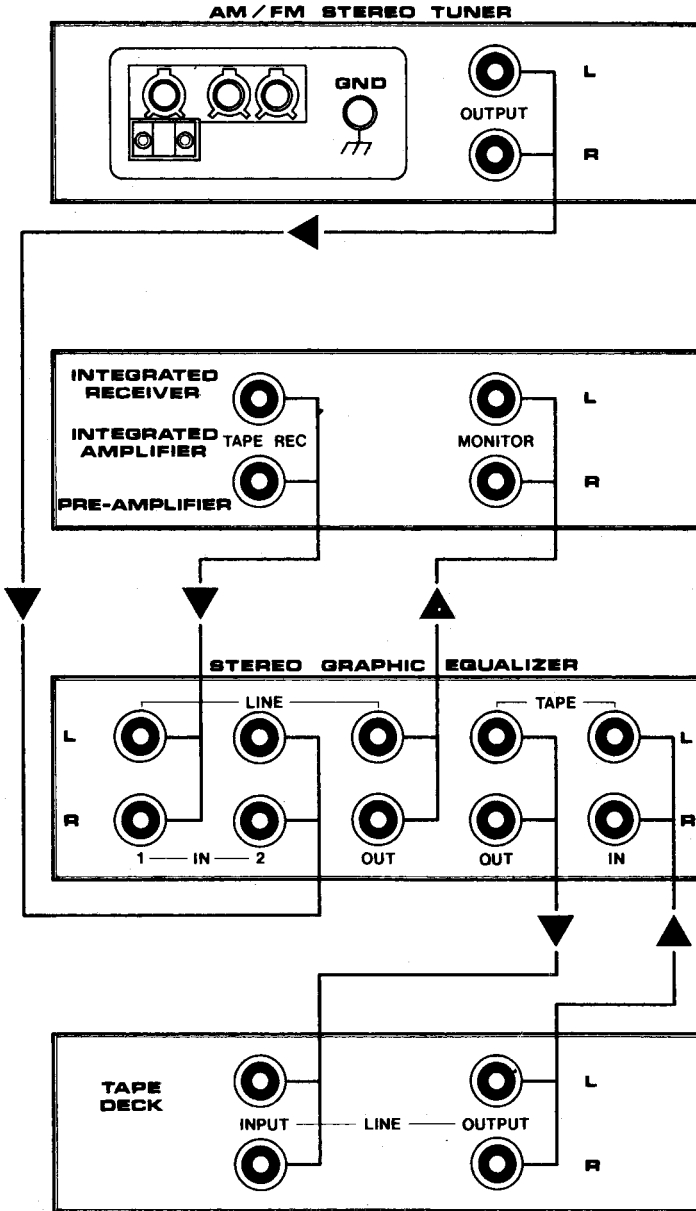


Fig. 2

## OPERATING:

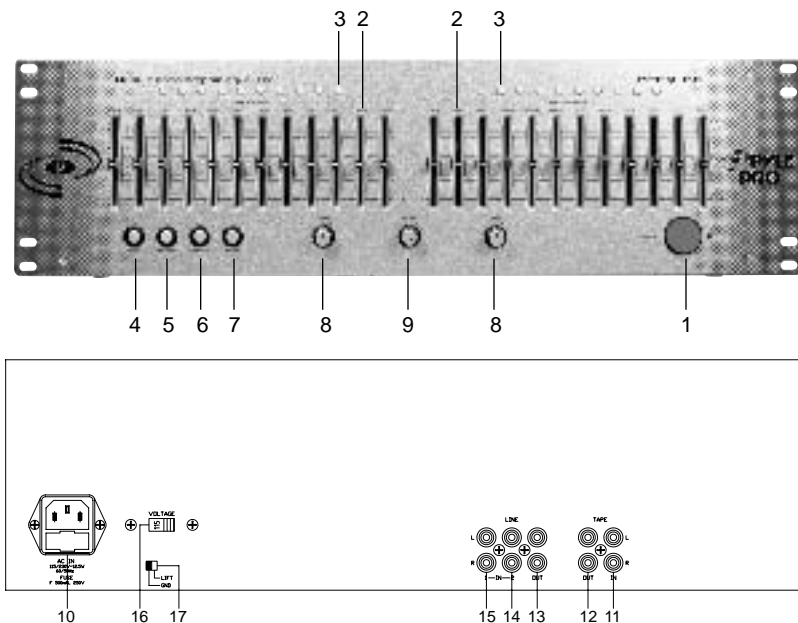


Fig.3

### 1. POWER SWITCH

To push in the power switch for power supplied from house-hold AC outlet to operate the equalizer and that time the LED indicator should be lighted. Contrary, to push out the power switch for shutting off power supply when the equalizer does not work and that time the LED indicator should not be lighted.

### 2. FREQUENCY BOOST-CUT CONTROLS

Control over the response curve is accomplished by 12 slide control levels each of left and right channel. (a total of 24 slide control levels) which permit a boost or cut of 12 dB minimum at the frequencies of 15Hz, 30Hz, 60Hz, 120Hz, 240Hz, 500Hz, 1KHz, 2KHz, 4KHz, 8KHz, 16KHz, 32KHz.

### 3. BLUE LED LEVEL DISPLAY METER

### 4. EQ IN/OUT SWITCH

When depressed, EQ effect is on.

### 5. SOURCE/TAPE SWITCH

Chooses input of source 1, 2, or tape from the rear panel connectors.

### 6. LINE 1/LINE 2 SWITCH

Chooses one of two sources plugged into the rear panel connectors.

### 7. PRE/POST SWITCH

Determines whether the output signal comes from before or after the equalizer circuits, but does not affect the tape circuits.

## 8. LEVEL CONTROLS

Located on the front panel of your Equalizer are two Variable Frequency Spectrum Level Balancing Controls.

Since it is possible that certain settings of the Frequency Equalization Slide Controls will increase or decrease the total average signal level, the LEVEL CONTROLS are used to adjust each channel so that the average output will be equal to the input signal level. This adjusts the Equalizer for Unity Gain.

## 9. LED METER ADJUSTMENT

When rotated, this control vary the sensitivity of the LED Meter. It should be adjusted so that the loudest and softest sound will be indicated in right position.

## 10. POWER CORD CONNECTOR

This connector is meant for the connection of the supplied main cord.

## 11. TAPE IN JACKS

For playback of tape, allowing EQ of pre-recorded tapes or re-EQ of a tape made using EQ.

## 12. TAPE OUT JACKS

These outputs feed your tape deck, enabling EQ of recordings being made.

## 13. LINE OUTPUT JACKS

These outputs typically plug into your preamp's "tape monitor" jacks.

## 14. LINE 2 SOURCE INPUT JACKS

## 15. LINE 1 SOURCE INPUT JACKS

## 16. 110V 60Hz/220V 50Hz SELECTOR

## 17. GROUND LIFT SWITCH

This switch is used to disconnect the signal ground from the mains and chassis earth ground. If it is determined that the equalizer is the cause of hum or buzz in your system due to a ground loop, move this switch to the "lift" position.

In this way, the equalizer is used to flatten the often uneven frequency response of stereo components and compensate for peculiarities in room acoustics and also to reduce noise in program source.

By moving the appropriate controls up or down a few dB, you can alter the total quality to suit your personal preference.

## TYPICAL FREQUENCY RESPONSE PER CHANNEL

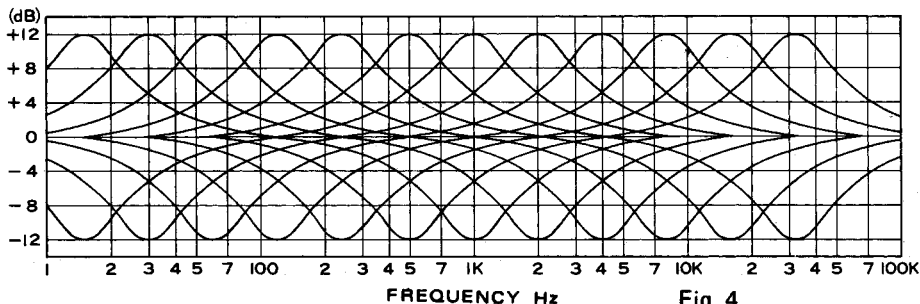
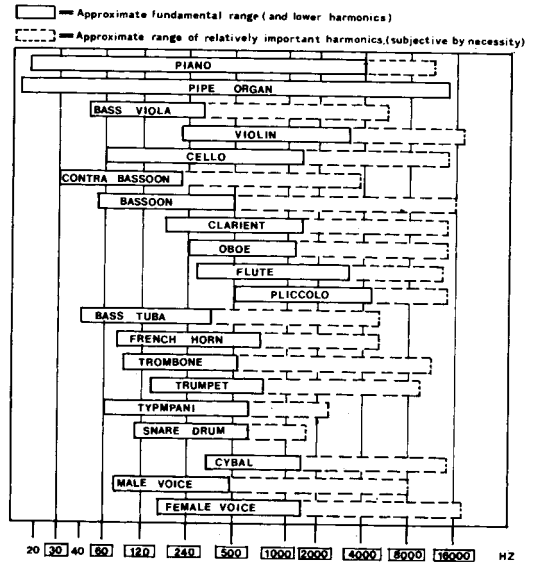


Fig. 4

# THE MUSICAL SPECTRUM

This chart correlates familiar musical instruments with the numerical frequencies that they produce. Given the often talked about musical range of 20 to 20,000 Hz, it is surprising to see how low musical fundamentals actually are. (Almost all are under 3,500 Hz.) It should be understood however that if all instruments were perceived only by their fundamental frequency output (white areas), they would all sound alike. It is the harmonics or overtones (Shaded areas) that give each individual instrument its character or timbre and set it apart from the rest.



[ ] = FREQUENCY LEVEL CONTROLS

Fig. 5

Interestingly enough, the human ear is more sensitive to certain octaves in the musical spectrum than to others. Whoever designed this engineering marvel deemed it necessary to tune the ear more toward the midrange frequencies where speech and voice communication occur, than to the outer octaves of low bass and high musical overtones. As a result, very small energy changes here will cause a more drastic psychoacoustic effect that larger changes would at the frequency extremes.

In order to discuss the qualitative effects of adjustment in tonal balance, it is best to arbitrarily divide the musical spectrum into five ranges:

**The Bass (approximately 20-140 Hz).** There is little musical material with fundamental frequencies below about 60 Hz, and what is normally perceived as low bass material is actually in the 60-140 Hz range. The very lowest frequency control can be used to enhance output for the few instruments in that range (organ, contrabassoon, etc.) or it can be used to reduce rumble, acoustic feedback and other low frequency aberrations. The 30 Hz, 60 Hz and 120 Hz controls will cause the greatest perceptible changes in "bass response"

**The Mid-Bass (approximately 140-400 Hz).** An over-accentuated mid-bass region will yield a very muddy and "boomy" quality to the music. A system shy of mid-bass will sound hollow and thin. The 240 Hz control is important for good overall balance.

The Mid-Range (approximately 400-2600 Hz). As the area where the ear is most sensitive to tonal balance, the mid-range is important in adjusting the qualitative sonic characteristics of your system. There is controversy among engineers and audiophiles as to what the proper balance should be in this range. Moreover, you will find some 500 Hz, 1000 Hz and 2000 Hz controls settings optimum for certain types of music with other settings just right for different types.

The Upper Mid-Range (approximately 2600-5200 Hz). Speaker designers often boost output in this range to effect a quality of "presence" to the music. Too much energy, on the other hand, sounds overbearingly harsh and strident. A good balance should be achieved between this and a more muffled sound. Use the 4000 Hz control for this effect.

The High End (approximately 5200-20,000 Hz). The region up to only about 12,000 Hz or so is what is normally perceived as high frequencies. Adjustment in this range affects the brilliance of music, with too much boost in energy yielding on unpleasant and piercing quality.

Most adults have hearing which rolls off rapidly above 14,000 to 17,000 Hz. As a consequence, the 16,000 Hz control will have a very subtle effect. It can be used to add a little more dimension to the sound or as a very high frequency noise filter.

## **SAFETY; USE AND CARE INSTRUCTIONS**

- \* Read Instructions — All the safety and operating instructions should be read before your Equalizer is operated.
- \* Water and Moisture — Your Equalizer 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.
- \* Ventilation — Your Equalizer should be situated so that its location or position does not interfere with its proper ventilation, for example, your Equalizer 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:
- \* Heat — Your Equalizer should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
- \* Power Sources — Your Equalizer should be connected to a power supply only of the type described in the operating instructions or as marked on your Equalizer.
- \* Cleaning — The cabinet can be cleaned with a soft cloth or if necessary cleaned with a cloth dampened with water. Never use polish, solvents, abrasives or strong detergents on the cabinet since these can damage the finish.
- \* Nonuse periods — The power cord of your radio should be unplugged from the outlet when left unused for a long period of time.
- \* Object and liquid entry — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.



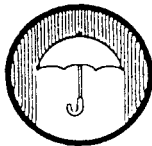
## SPECIFICATION

Frequency Response	5 Hz-100 KHz	+ 0.5 dB -1.0 dB
Control Frequencies	15 Hz 30 Hz 60 Hz 120 Hz 240 Hz 500 Hz 1KHz 2KHz 4KHz 8KHz 16KHz 32KHz	
Control Range		±12 dB
Harmonic Distortion (at 1V output 20Hz-20KHz)		0.02%
Hum and Noise (at 1V input Shorted)		-90 dB
Intermodulation Distortion (70Hz/7KHz @ 4:1 ratio)		0.02%
Dynamic Range (10K Ohms load)		8 volts/RMS
Gain Level		0 dB ± 1 dB
Input Impedance		50K Ohms
Inputs		2 main & 1 tape monitor
Outputs		1 main & 1 tape out
Power Consumption		120V AC /60Hz 11W Export (220V AC /50Hz 15W)
Cabinet Dimension		482W x 132H x 187D mm (19") x (5.2") x (7.4")
Set Weight		4.5kg (9.9lbs)

## CARE AND MAINTENANCE

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Your Pyle Stereo 12-Band Graphic/Equalizer is an example of superior design and craftsmanship. The following suggestions will help you care for your equalizer/booster so you can enjoy it for years.



Keep the graphic/equalizer dry. If it does get wet, wipe it dry immediately. Liquids contain minerals that can corrode electronic circuits.



Use and store the graphic/equalizer only in normal temperature environments. Temperature extremes can shorten the life of electronic devices and distort or melt plastic parts.



Handle the graphic/equalizer gently and carefully. Dropping it can damage the circuit boards and can cause it to work improperly.



Keep the graphic/equalizer away from dust and dirt, which can cause premature wear of parts.



Wipe the graphic/equalizer with a damp cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the graphic/equalizer.

# NOTES

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**[www.pyleaudio.com](http://www.pyleaudio.com)**

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