



MODEL: PWM-20

**4 BAND PARAMETRIC EQUALIZER WITH SUBWOOFER
ELECTRONIC CROSSOVER**

OWNER'S MANUAL

■ SPECIFICATIONS

4 VARIABLE FREQUENCY RANGES	BAND1 (60 - 150Hz) BAND2 (200 - 400Hz) BAND3 (1.2 - 2.5KHz) BAND4 (7.5 - 15KHz)
SUB-WOOFER CROSSOVER FREQUENCY	30Hz ~ 250Hz
BOOST/CUT	18dB
S/N RATIO	115dB REF 1V INPUT
FREQUENCY RESPONSE	20Hz ~ 25KHz
MAXIMUM OUTPUT VOLTAGE	8V RMS
THD	0.05%
INPUT SENSITIVITY	300mV ~ 2V
HEADROOM	20dB
INPUT IMPEDANCE	10K OHMS
STEREO SEPARATION	82dB/1KHz
OPERATING VOLTAGE	11-15V NEGATIVE GROUND
OUTPUT IMPEDANCE	50K OHMS
SIZE (HxWxD)	178x27.5x115mm

* DUE TO OUR CONTINUING EFFORTS TOWARDS PRODUCT IMPROVEMENT , THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

INTRODUCTION

Congratulation on your purchase of your new preamplifier equalizer. Our sonic excellence is considered our most important objective. Your selection of this component tells us you desire to achieve the same goal. Welcome to the rapidly expanding group of discerning audiophiles who rely upon our products.

This manual has been prepared to help you maximize your enjoyment of the outstanding performance and multiple advanced features of this unit. To fully realize the exceptional performance this product is capable of, it is necessary that all signal sources, amplifiers, and speakers are of the highest quality.

■ EQUALIZER BACKGROUND

There are basically three types of equalizers: graphic, parametric, and a hybrid of these two, often referred to as paragraphic. Additionally, there are passive equalizers, which have no gain, active gain preamps, which have a gain stage usually with a volume control, and booster equalizers which we won't consider here since they are inferior passive equalizers with inexpensive IC amplifiers built-in..

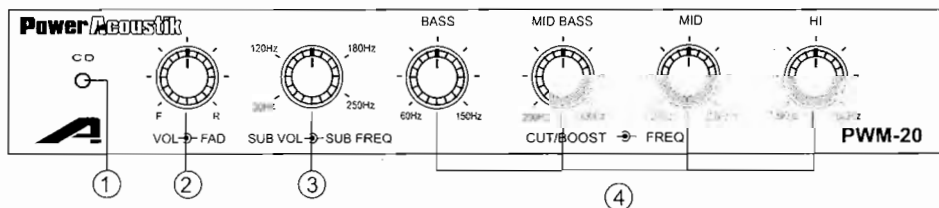
As in state-of-the-art home audio systems the optimum system requires a dedicated preamp with enormous gain to drive the various power amplifiers. Since home audio amplifiers do not have adjustable sensitivity, and require high output preamplifiers to drive them to maximum levels.

This unit is the first production preamplifier to incorporate a specific bandwidth parametric equalizer with adjustable Center Frequency Control on the front panel. With 18db boost or cut on its four bands, it can compensate for acoustic anomalies unique to the automotive environment. This unit easily becomes the "Mission Control Center" of any high end automotive sound system.

■ FEATURES

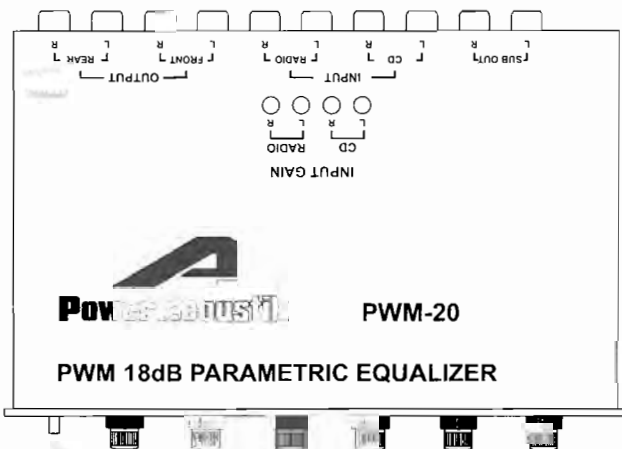
1. Volume control with up to 8 volts RMS of output.
2. Four band parametric equalizer with 18db boost Cut.
3. Adjustable Center Frequency Control on the front panel.
4. Low noise BI-FET op-amp design yields minimum distortion.
5. On-board 30V bi-polar switching power supply.
6. Subwoofer outputs and level controls.
7. Subwoofer frequency adjustable.
8. Input selector for Radio or CD.
9. Universal half-DIN chassis for ease of installation.
10. Gold-plated RCA input output connectors.
11. 20dB headroom eliminates signal overload.

■ FRONT PANEL CONTROLS



1. **INPUT SELECTOR SWITCH :** This switch selects the radio or CD input.
2. **MASTER VOLUME CONTROL:** Turning the outer bigger knob to adjust the volume between the front and rear speakers in a 4 speakers system. Turning the smaller knob to adjust the output level.
3. **SUB WOOFER CONTROL:** Turning the outer bigger knob to adjust the sub woofer frequency. Turning the smaller knob to adjust the output level of sub woofer RCA jack.
4. **BASS / MID BASS / MID / HI CONTROLS:** Turning the outer bigger knob to adjust the center frequency of each Band. Turning the smaller knob to boost or cut the selected frequency.

■ CD/RADIO INPUT GAIN CONTROL



* THE CD/RADIO L/R CHANNEL INPUT CAN BE ADJUSTED FROM THE TOP COVER.

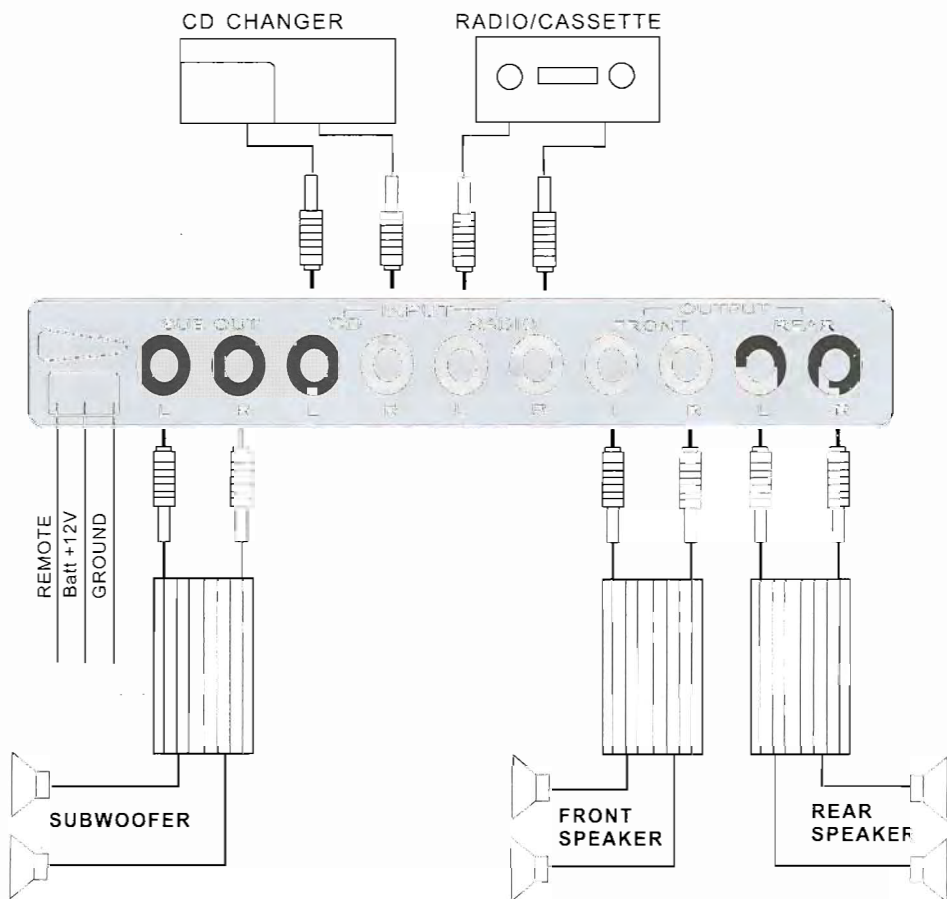


TURN THE KNOB CLOCKWISE TO GAIN THE INPUT LEVEL.



TURN THE KNOB COUNTER-CLOCKWISE TO CUT DOWN THE INPUT LEVEL.

ELECTRICAL INSTALLATION



NOTES:

Set your source volume at one-half to three-quarter up and leave it.

Always use the volume control as a master(main) volume control. It has better electronics, higher S/N ratio and is more linear than any source unit volume control available.

If engine noise is audible , check the ground connection on all units in the audio system.

