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Congratulations and thank you.....

for choosing *PrecisionPower* audio equipment. At *PrecisionPower* we proudly design, engineer and manufacture audio products at our facility in Phoenix, Arizona. Our award winning engineering team utilizes innovative technology to consistently deliver Absolutely State of the Art™ performance, sound quality, reliability, and value. This *PrecisionPower* product reflects our commitment to offer you unparalleled versatility and quality for years of dependable service and listening enjoyment.

Service



Do not attempt to service *PrecisionPower* products yourself. Performing exploratory surgery on your audio equipment yourself will void the warranty. Many parts of your *PrecisionPower* gear are custom built to our specifications. Our factory parts are not made available to anyone else nor are they for sale. Our goal is to make sure that your *PrecisionPower* product will always sound as good as the day it was purchased. Contact your authorized *PrecisionPower* dealer about obtaining any warranty service through *PrecisionPower*.(See Warranty inside back cover)

FOR YOUR RECORDS:

Model _____

Serial Number _____

Purchase Date _____

Caution!



The extended use of a high powered audio system may result in hearing loss or damage. While *PrecisionPower* systems are capable of "Concert Level" volumes with incredible accuracy, they are also designed for you to enjoy at more reasonable levels all of the sonic subtleties created by musicians. Please observe all local sound ordinances.

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FEATURES / SPECIFICATIONS

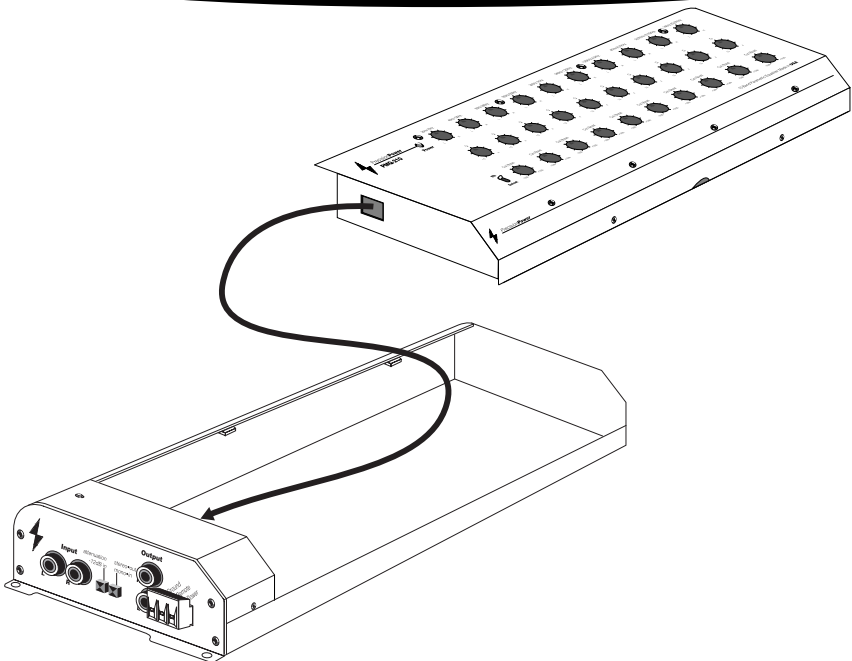
*10 Band Fully Parametric Equalizer
Detachable control panel with 20 ft. cable
for remote adjustment
10 center detent adjustable gain controls
10 center detent adjustable Q controls
10 adjustable frequency controls
Differential input stage
Mono/Stereo switch
Attenuation Switch
Defeat switch
Gold RCA input and output connectors
PWM Power Supply
L.E.D. power indicator
Designed and Handcrafted in the U.S.A.*

Specifications



<i>Signal-to-Noise Ratio</i>	<i>>102 dB</i>
<i>Total Harmonic Distortion (1kHz, 1VRMS)</i>	<i>0.017%</i>
<i>Cut / Boost Range</i>	<i>±12 dB</i>
<i>Input Gain</i>	<i>0 dB</i>
<i>Q Range</i>	<i>1.5 - 4</i>
<i>Attenuation</i>	<i>-12 dB</i>
<i>Maximum Input Voltage (attenuation out)</i>	<i>8 VRMS</i>
<i>Maximum Input Voltage (attenuation in)</i>	<i>16 VRMS</i>
<i>Maximum Output (10 kΩ Load)</i>	<i>8 VRMS</i>
<i>Frequency Response</i>	<i>0 to 50kHz ±1dB</i>
<i>Supply Voltage</i>	<i>11-15 VDC</i>
<i>Dimensions</i>	<i>17.10" L 5.065" W 1.783" H</i>

DETACHABLE CONTROL PANEL



Using the Two Part Design to your Advantage



In the past, when adjusting the system equalizer, it was necessary to go from the trunk to the RTA outside of the vehicle, or to the passenger compartment to listen to the changes made. Equalizing a system by going back and forth in this manner is a time consuming, difficult process. With the **PMQ-210** this is no longer the case. Before you begin your equalization process, simply remove the Allen head screw (located to the right of the thumb notch on the front bezel) that holds the main control panel to the docking bay, and carefully remove the main control panel. You will notice that it is connected to the docking bay via a short eight conductor cable. Make sure that the power is off! Remove the control panel, disconnect the short cord at both ends and then replace it with the 20 ft. cable (supplied). After plugging the control panel into the docking bay, turn power back on, and begin your pink noise analysis. This feature allows you to instantly make "real time" adjustments to the system.

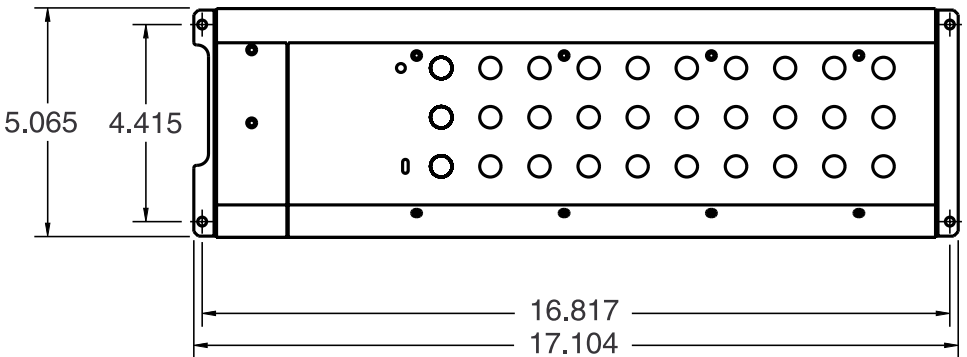
INSTALLATION / MOUNTING

Mounting



To prevent damage to the equalizer while driving, mount it in a secure place. Choosing the appropriate location will depend upon your vehicle and the complexity of your system design. Typical mounting locations include the trunk and passenger compartment (floor or under seat). Due to the potential of noise interference, we do not recommend mounting the control panel away from the main chassis of the **PMQ-210**. Never mount the equalizer in a location that would subject it to immersion or exposure to water.

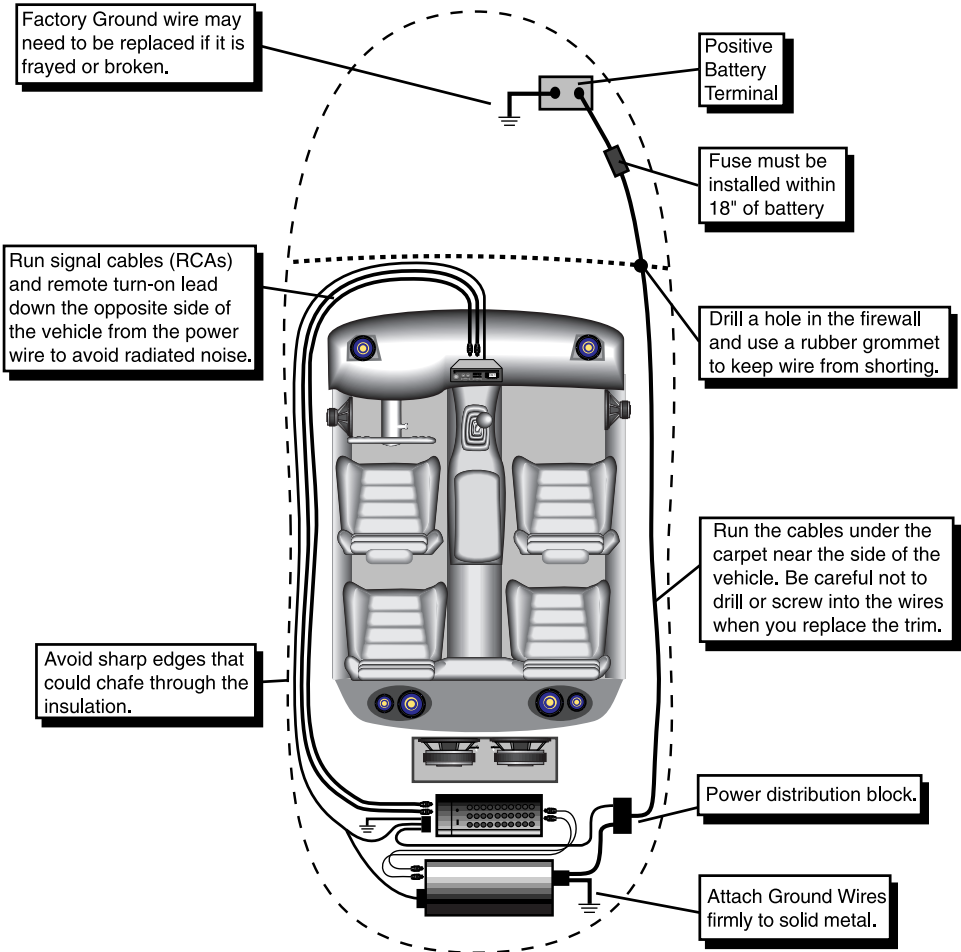
Once a location has been chosen, securely mount the **PMQ-210** with four mounting screws. Be Careful! Inspect the area underneath to be sure you are not drilling into wires, brake or fuel lines, that could be damaged by the drill bit or screws.



Dimensions

5.065"W
17.10" L
1.783"H

WIRING



NOTE



Before beginning, disconnect the negative (-) terminal of the battery prior to working on the positive (+) terminal to prevent a short to ground. This is important, unless you want to spend the rest of your life with a nickname like "*Sparky*," or "*Smokey*." Reconnect the negative terminal only after all connections have been made.

WIRING

The next step is to connect the Power, Ground, and Remote wires to your **PMQ-210**. The power wire should run from the mounting location through the vehicle to the battery or power distribution block. Avoid sharp corners, creases, and sharp body parts. When passing through any metal wall (i.e. firewall etc.), a grommet must be used to prevent the wire from chaffing and shorting to ground.

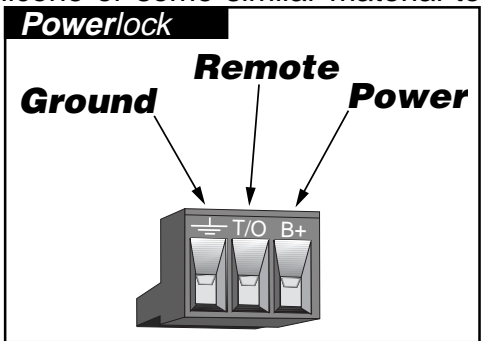
The ground wire should be of the same gauge as the power wire. As a rule of thumb, use as short a length of wire as possible.

Find a location near the equalizer that is metal (the floor is ideal) and clean an area about the size of a quarter to bare metal. Drill a pilot hole in the middle of this area. Be Careful! Inspect the area underneath to be sure you are not drilling into wires, brake or fuel lines, etc. Terminate the wire with a ring connector and attach it to the bare metal using a #8 sheet metal screw and washer (not supplied). We suggest crimping and/or soldering this connection. After the connection is complete, coat the area with silicone or some similar material to prevent rust from developing.

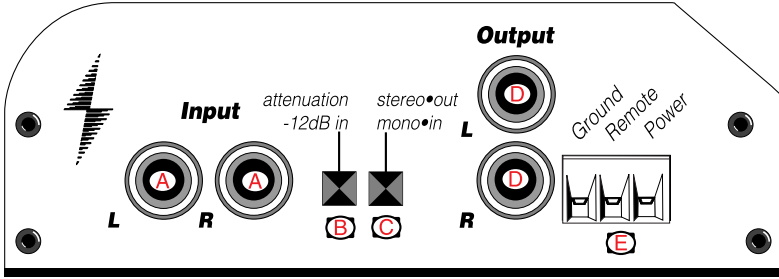
Finally, the remote wire needs to run to the power antenna (or amplifier remote) lead of the head unit. This wire supplies a 12 volt signal to the **PMQ-210** when the main system is activated.

Once you have routed the power, ground, and remote wires through the vehicle, it is time to connect the wires to the **PMQ-210**. Be sure that you have not reconnected the ground cable to the negative post of the battery.

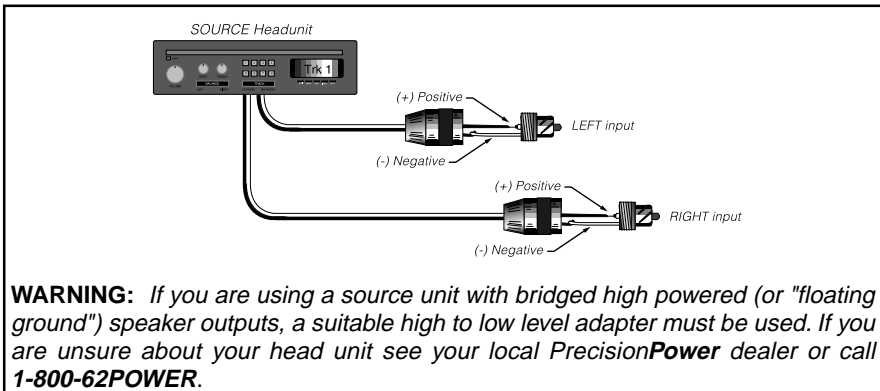
Cut off excess wire and, using wire strippers, strip the power, ground and remote cables about 1/8 inch. Locate the power, ground, and remote **Powerlock** connector (supplied). On the top of the connector are three slotted screws. With a small flat-bladed screwdriver, loosen the screws before attempting to insert the cables. After you have inserted the stripped end of each cable into the connector, secure it by tightening the associated screw. Check that each connection is tight. If the wires are secure, the connector may be plugged into the **PMQ-210**.



FUNCTIONS



- A** **INPUT** - Connect RCA cables from your source unit here.
- B** **Attenuation** - Push this switch in to accept high level RCA inputs or direct speaker lead inputs from common grounded (not high powered) head units. See diagram below for wiring.
- C** **Stereo/Mono Switch** - Push this switch IN to send Left Input to both channels of the **PMQ-210** for Mono operation. Leave the switch OUT for Stereo operation.
- D** **OUTPUT** - Connect RCA cables to your Preamp, Crossover or Amplifier here.
- E** After connecting Ground, Remote, and Power wires, plug in the **Powerlock** connector here.

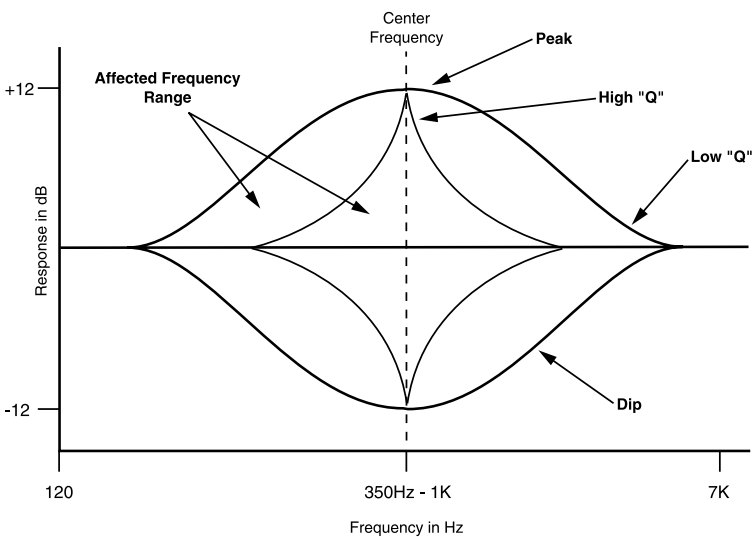


To use Speaker Level Inputs (common ground head units only), connect RCA plugs to the front or rear speaker leads as shown, and push IN the Attenuation switch.

PARAMETRIC OPERATION

The **PMQ-210** Parametric Equalizer puts an incredible amount of control in your hands. Correctly adjusted, it can solve many of the problems you will encounter along your road to perfect sound. Incorrectly adjusted, it can cause just as many problems. By following these guidelines, you will avoid common pitfalls in system tuning and get your sound quickly dialed in. We recommend that you use a Real Time Analyzer (RTA) to speed things up, but it is possible to tune your system without it.

It is important to understand what a parametric equalizer actually controls to be able to use one effectively. On the face of the detachable control panel are ten sets of three controls each. On the top row are the frequency selection controls, which allow you to dial in the exact frequencies in need of adjustment. There are ten overlapping ranges that cover the entire audio spectrum. The second row consists of the "Q" adjustment from 1.5 to 4 for each frequency selected. Q is an indication of how wide or narrow the adjusted bandwidth is. A low Q (1.5) will affect a wide range of frequencies around the selected center frequency resulting in a gently curved shape, while a high Q (4) affects a narrow band resulting in a peaked shape as shown below. The last row of controls determines the amount of cut or boost, ± 12 dB, at each selected frequency.



SYSTEM TUNING

1) With the system turned OFF, remove the control panel from the chassis of the *PMQ-210*, replace the short connecting cable with the 20' cable, and take the control panel to the adjusting location (either inside the car or next to the RTA).

NOTE:

If you are using a Real Time Analyzer (RTA), go to step 2.
If not, go to step 10.

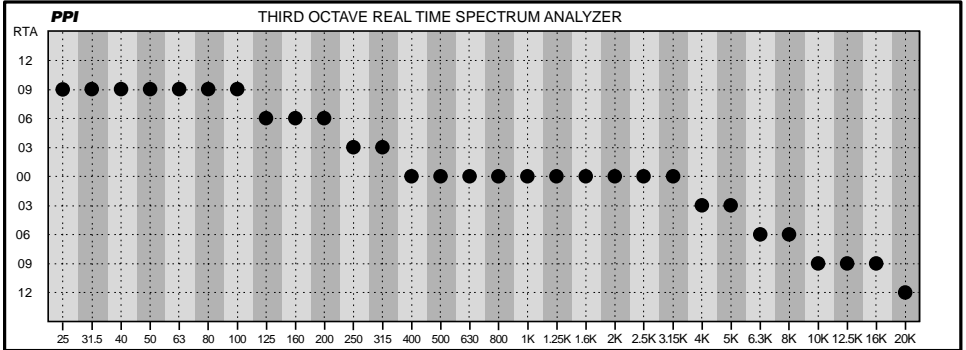
2) The next step is to locate a suitable source of "pink noise." A good choice would be the current IASCA competition reference disc. Also, some RTAs have a built-in pink noise source. Ideally, the pink noise should play through your head unit, allowing you to compensate for any frequency response changes caused by it, or anything else, before the amplifiers.

3) Next, place the microphone from the RTA in the driver's seat at approximately head level. Initially, set the analyzer to read at 3dB per step, and set the speed of the RTA's readout to medium." Turn on your system and start the pink noise. Raise or lower the volume until you can see all (or most) of your frequency response on the RTA scale (a little above or below is OK). Make sure all of the equalizer's Cut/Boost controls are at zero and look at the RTA screen.

4) You are trying to achieve a target frequency response, or "curve" that reflects your preference. You might think that a perfectly straight line would be best, but it really doesn't sound very good. Instead, shoot for a curve that starts about 9dB up at the low frequencies (25Hz to about 100Hz) dropping gently to 0dB in the midrange (250Hz to 3kHz), then dropping gently to -9dB at 16kHz and 20kHz. See the figure at the top of the next page.

5) If electronic crossovers are used, any large frequency sections corresponding to your crossover points that are low or high should be brought in line using crossover level controls or amp gain adjustments rather than the equalizer.

SYSTEM TUNING



6) To begin, you will probably see several peaks and dips in your RTA curve. Find the lowest offending frequency, and choose the appropriate frequency range control on the face of the control panel.

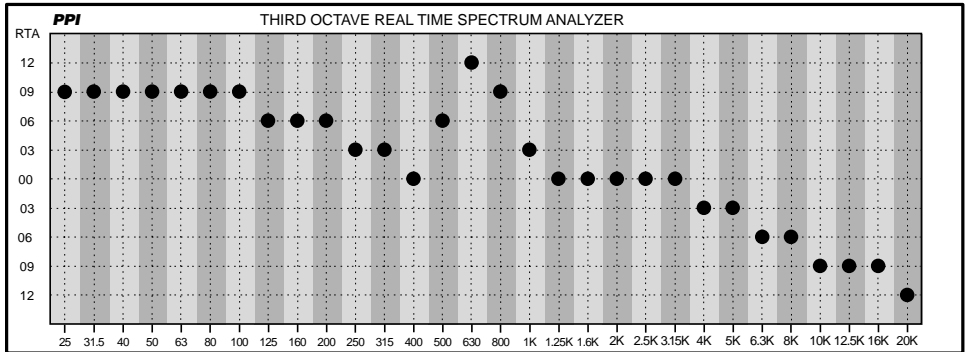
*Reading from left to right when looking at your new **PMQ-210**, the following are the frequency ranges; (also see page 16)*

1.	20Hz - 70 Hz
2.	40Hz - 130 Hz
3.	80Hz - 270Hz
4.	160Hz - 530Hz
5.	350Hz - 1kHz
6.	900Hz - 2.2kHz
7.	1.9kHz - 4.4kHz
8.	4kHz - 9.4kHz
9.	9.2kHz - 15.5kHz
10.	14.2kHz - 20kHz

7) Turn the Q control fully clockwise to 4, and the Cut/Boost all the way to +12dB. Now turn the Frequency control up and down as you watch the RTA display, and you will see a tall peak move right and left. When this moving peak lines up with the peak you want to control, turn the Cut/Boost control counterclockwise and you will see the peak diminish.

SYSTEM TUNING

8) When the center frequency of the original peak has been brought down to where you want it, you may see that adjacent frequencies are still higher than you want them. Turn the Q control counterclockwise until the adjacent frequencies come into line. If you are adjusting a dip in the curve, the procedure is the same except that you will start with the Cut/Boost control at -12dB instead of +12dB.



Move to the next frequency and repeat until you run out of frequencies to adjust. Try to remove the peaks before filling the dips. Periodically, while you are making adjustments, compare the new curve you are making to the system in an unequalized state by using the defeat switch on the lower left corner of the control panel.

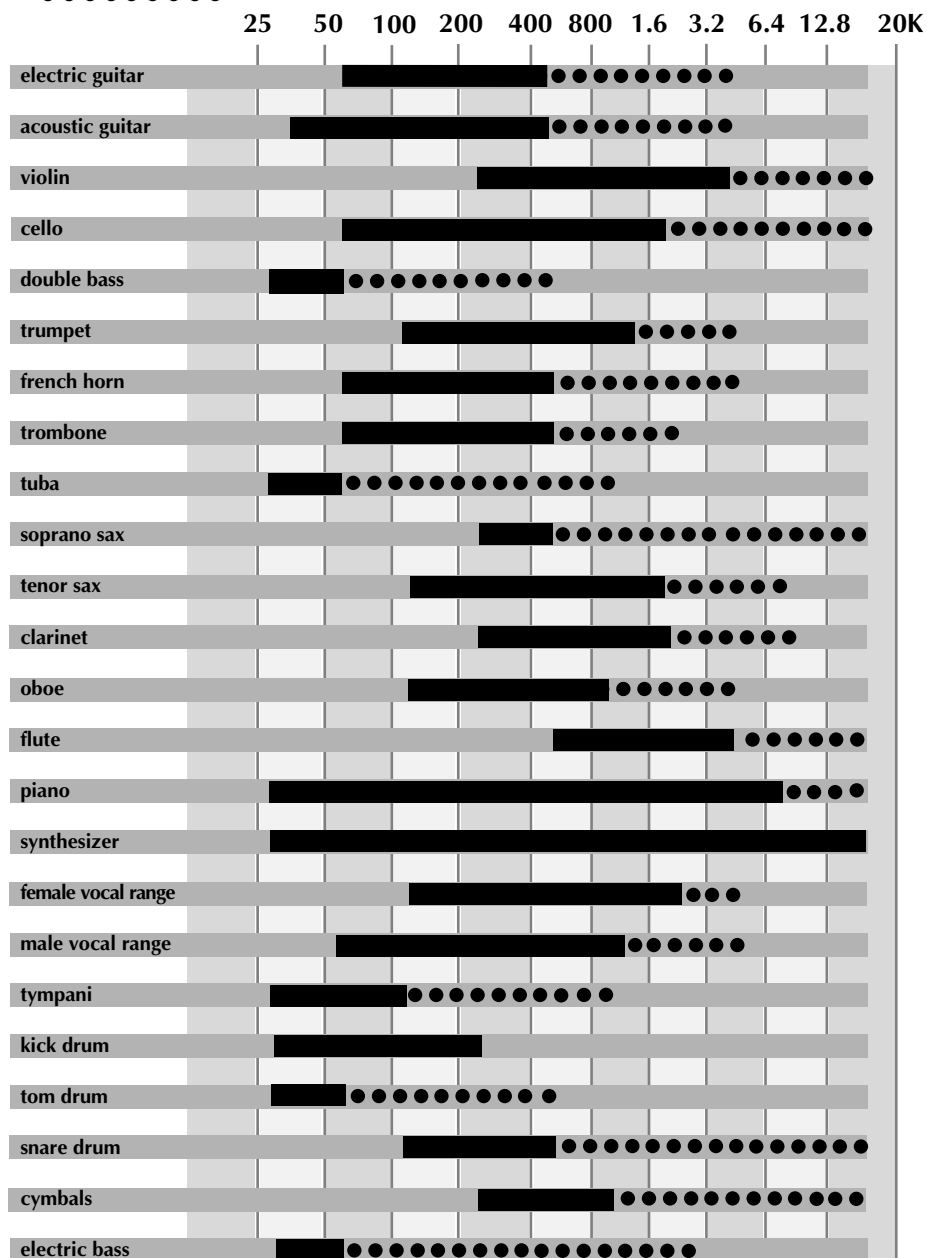
9) Play your favorite music. If the sound isn't what you're looking for, go back to the pink noise and smoothly adjust your curve for more bass, less midrange or whatever you think will correct the sound. Remember that this is your system - don't let someone else tell you how it should sound! When the sound is close to what you want, move to step 10.

10) Play several different music tracks. If you hear an instrument, voice, or other sound that is too loud, find the sound on the chart on page 11. This will give you clues as to what frequencies need to be adjusted on the **PMQ-210**. (If you have already tuned using an RTA, this step is icing on the cake.) Make one adjustment at a time, giving yourself time to notice the changes.

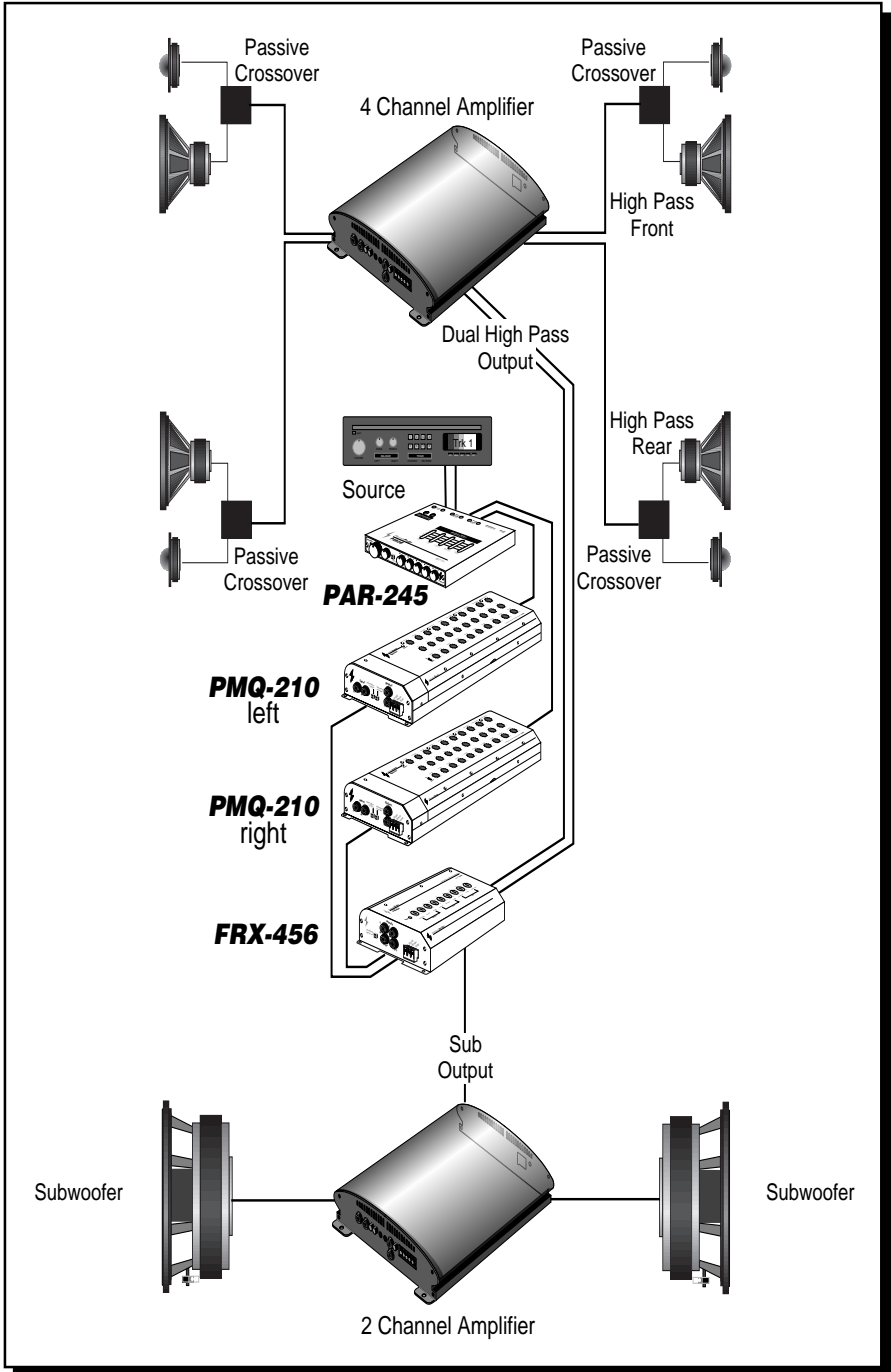
11) Turn off the power and securely replace the control panel back into the main chassis when finished tuning your system.

FREQUENCY DISTRIBUTION

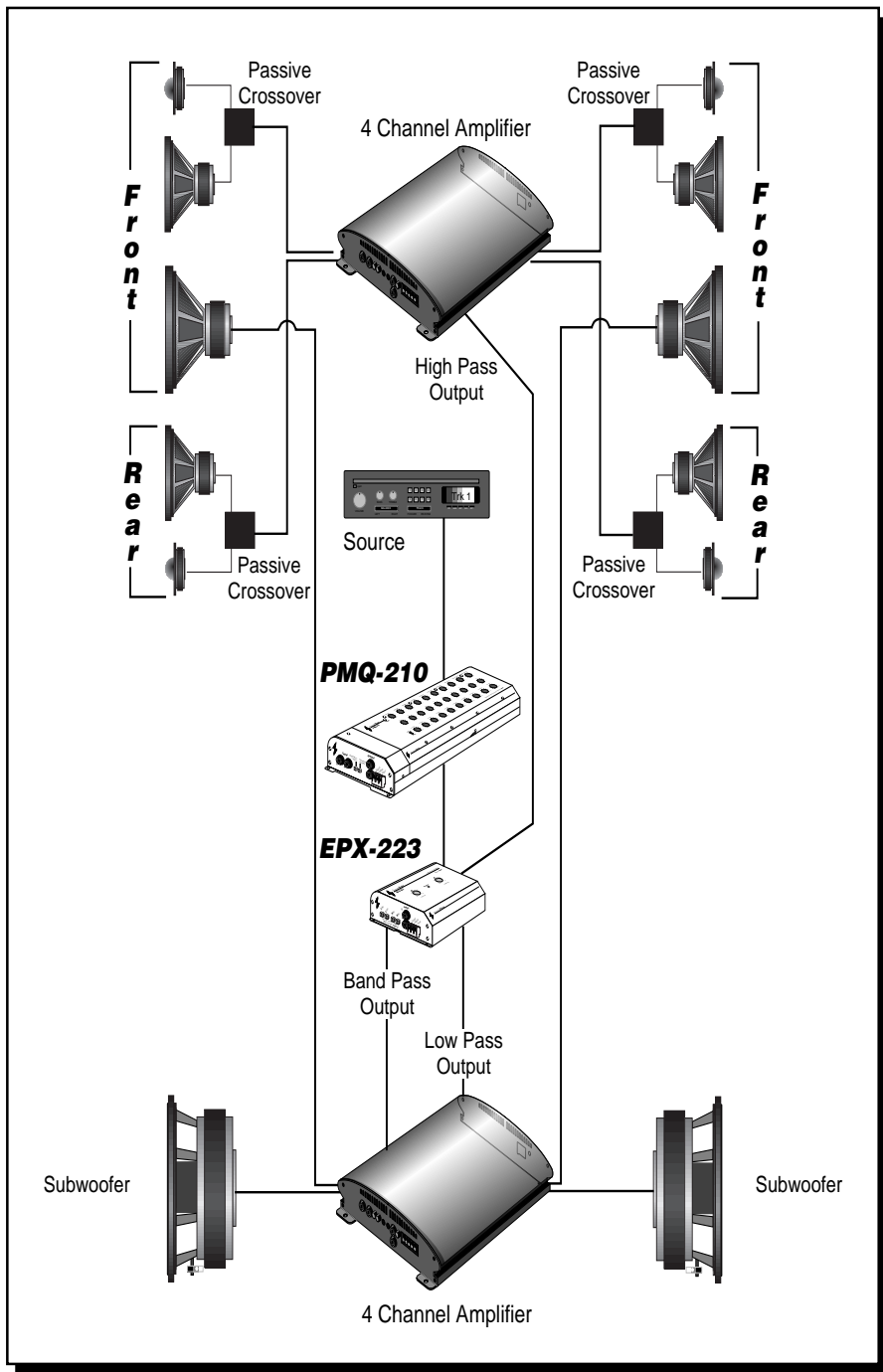
FUNDAMENTAL NOTE
 HARMONIC OR OVERTONE



SYSTEM ONE



SYSTEM TWO



TROUBLE SHOOTING

NO SOUND

Is the LED lit?

YES

Check Input cables for signal by connecting them to the next component in line.

NO

Check Power and Remote turn-on wire for voltage. Make sure Ground wire is secure.

→ **ANY SOUND NOW?**

YES

Problem is in the Equalizer. See your local Authorized *PrecisionPower* Dealer or call 1-800-62**POWER**.

NO

Problem is elsewhere in the system. Check head unit and amplifiers.

SOUND IN ONE CHANNEL ONLY

Check Balance control.

Reverse left and right RCA outputs.

→ **SOUND IS NOW IN**

OPPOSITE CHANNEL

Reverse RCA inputs.

SAME CHANNEL

Problem is in the amplifier, speakers or associated wiring of the silent channel.

→ **SOUND IS NOW IN**

OPPOSITE CHANNEL

Reverse RCAs at head unit.

SAME CHANNEL

Problem is in the Equalizer. See your local Authorized *PowerPower* Dealer or call 1-800-62**POWER**.

→ **SOUND IS NOW IN**

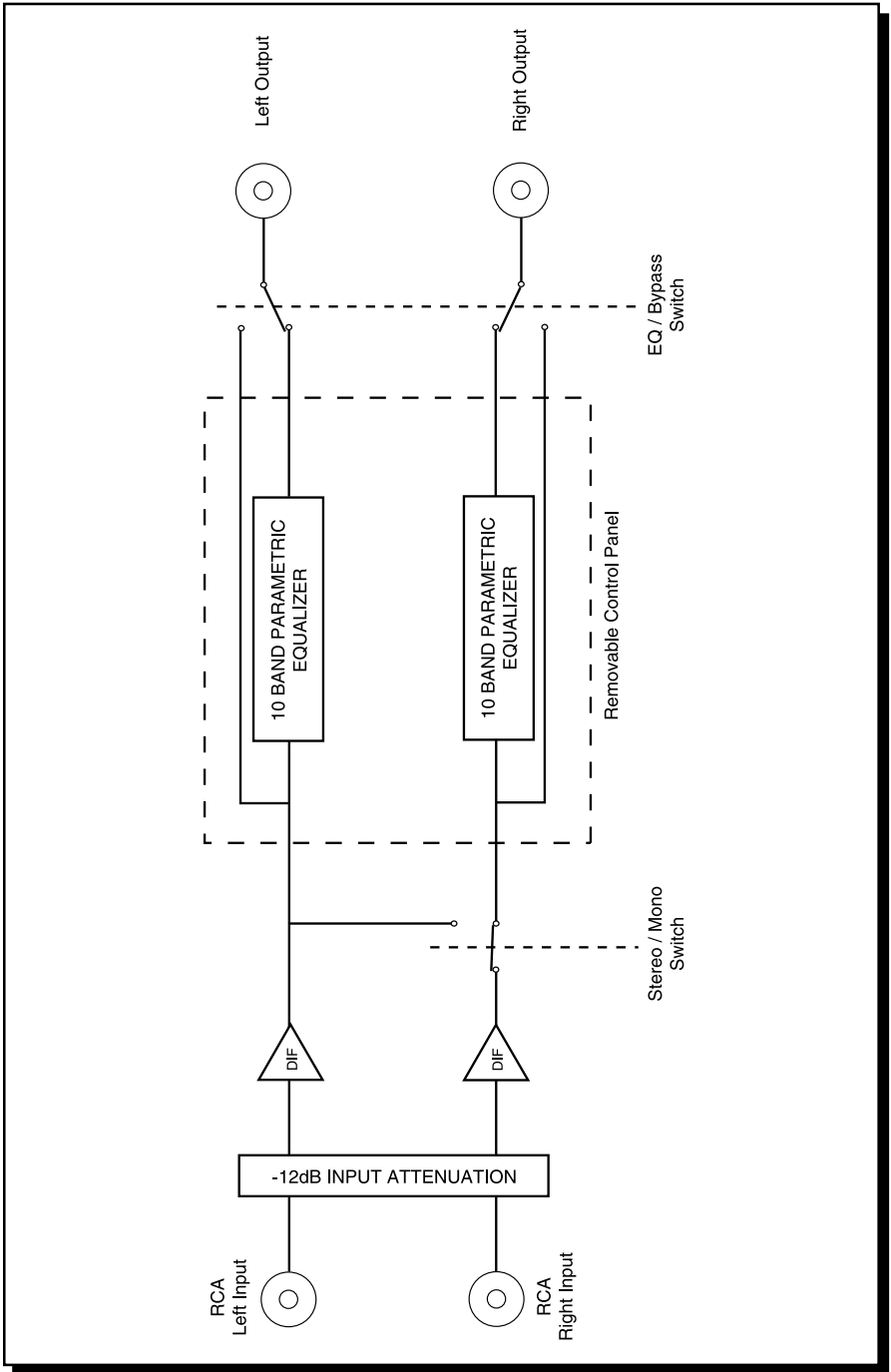
OPPOSITE CHANNEL

Problem is in the head unit.

SAME CHANNEL

Problem is in the RCA cables.

BLOCK DIAGRAM



WARRANTY

Three-Year Limited U.S.A. Warranty

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. **PrecisionPower** warrants its products to be free from defects in materials and workmanship under normal use and service for a period of three (3) years from the date of original purchase when the unit is installed by an Authorized Dealer. Non-Authorized Dealer installed products carry a one (1) year parts and ninety (90) days labor limited warranty. The extent and conditions of Limited Warranty are as follows:

1. Authorized Dealer Installed Products: **PrecisionPower** will either repair or replace at no charge, to the original purchaser, any unit which **PrecisionPower's** examination discloses to be defective and under warranty, provided the defect occurs within three (3) years from the date of original purchase when the unit is installed by an Authorized Dealer and the product is returned immediately to **PrecisionPower**. This warranty is not transferable.

2. Non-Authorized Dealer Installed Products: **PrecisionPower** will either repair or replace at no charge, to the original purchaser, any unit which **PrecisionPower's** examination discloses to be defective and under warranty, provided the defect occurs within ninety (90) days from the date of purchase and the product is returned immediately to **PrecisionPower**. Warranty claims beyond ninety (90) days for Non-Authorized Dealer Installed Products will be for parts only and will extend for one (1) year from the date of purchase. This warranty is not transferable.

3. The date of purchase and proof of Authorized Dealer Installation of a PrecisionPower product must be established by an original sales receipt which must accompany the article being returned for warranty work.

4. This warranty shall NOT apply to any **PrecisionPower** product found to have the original factory serial number removed or defaced. All products received (by **PrecisionPower**) for in warranty or out of warranty repair, with their original serial numbers removed or defaced, will NOT be repaired and will be returned to sender, freight collect. Refer to original packaging for the serial number of your component speakers.

5. The provisions of this warranty shall not apply to any **PrecisionPower** product used for a purpose for which it is not designed, which has been repaired or altered in any way, or which has been connected, installed, or adjusted other than in accordance with the instructions furnished in **PrecisionPower's** owner's manual. Nor shall this warranty apply to any part which has been subject to misuse, neglect, or accident.

6. PrecisionPower does not authorize any other persons to assume any other liability in connection with its products. THIS WARRANTY IS THE ONLY EXPRESS WARRANTY MADE BY PRECISIONPOWER APPLICABLE TO ITS PRODUCTS. ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE APPLICABLE TO PRECISIONPOWER PRODUCTS IS LIMITED IN DURATION TO THE DURATION OF THIS LIMITED WARRANTY. PRECISIONPOWER SHALL NOT BE LIABLE FOR THE INCIDENTAL, CONSEQUENTIAL, OR COMMERCIAL DAMAGES RESULTING FROM THE BREACH OF THIS WRITTEN WARRANTY. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts; so the above limitations or exclusions may not apply to you.

7. Your product will be serviced on an in-warranty basis within the warranty period for the correction of warranted defects. If improper operation of your **PrecisionPower** product should occur, contact your Authorized Dealer for assistance with the return and factory repair of your **PrecisionPower** product. If an Authorized Dealer is not available, return the unit including your name, telephone number, return address, a copy of your sales receipt, and a description of the problem to:

PrecisionPower, Inc.
Service Department
4829 S. 38th Street
Phoenix, AZ 85040-2964

TO RETURN PRECISIONPOWER PRODUCTS OUT OF WARRANTY: Return the unit, postage prepaid, in the original protective carton. Please include a description of the problem and, if desired, a request for an estimate of repair costs. Unless a request for an estimate is included, the unit will be repaired as necessary. Please contact **PrecisionPower** Customer Service at 1-800-62-POWER for questions concerning out of warranty repair charges. Repaired unit will be returned with an itemized statement, C.O.D.

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