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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:

M o d e l _____

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

Linkwitz-Riley 24 dB/octave Subwoofer Filter
Linkwitz-Riley 12dB/octave Mid Bass, Mid Range and High
2,3, or 4-way active crossover
Input Combine Switch
Input Attenuation
Detented Frequency Selection Controls
Rear Fill Level Control
Sub Woofer Level Control
Gold RCA input and output connectors
PWM Power Supply
Designed and Handcrafted in the USA

Specifications



Signal-to-Noise Ratio	>102dB
Total Harmonic Distortion (1KHz, 1VRMS)	0.002%
Crossover Slopes:	
All Except Sub Low Pass	12 dB/octave
Sub Low Pass	24 dB/octave
Crossover Frequencies:	
Front: High Pass	80 Hz-7.5 KHz to 20 KHz
Mid Range	80 Hz-1.7 KHz to high pass
Mid Bass	55 Hz-500 Hz to midrange
Rear: High Pass	80 Hz-7.5 KHz to 20 KHz
Mid Range	80 Hz-1.7 KHz to high pass
Sub: Low Pass	20 Hz-270 Hz
Sub Sonic	7 Hz-46 Hz
Input Impedance	10 K Ω
Maximum Output (10 K Ω Load)	8 VRMS
Supply Voltage	11-15 VDC
Dimensions	5.125"W 10.50" L 1.750"H

FREQUENCY CHART

All crossover frequency controls are detented. Each "click" counted from the full counterclockwise position corresponds to a specific frequency. Refer to this chart and page 6 for set-up instructions.

Detent	Sub Sonic	Sub	Mid Bass	Mid Range	High Pass
1	7 Hz	20 Hz	55 Hz	80 Hz	80 Hz
2	7 Hz	22 Hz	56 Hz	80 Hz	88 Hz
3	7 Hz	22 Hz	56 Hz	80 Hz	88 Hz
4	7 Hz	22 Hz	56 Hz	80 Hz	88 Hz
5	8 Hz	24 Hz	56 Hz	80 Hz	88 Hz
6	8 Hz	24 Hz	60 Hz	88 Hz	96 Hz
7	8 Hz	26 Hz	64 Hz	88 Hz	100 Hz
8	8 Hz	28 Hz	68 Hz	88 Hz	108 Hz
9	9 Hz	30 Hz	72 Hz	96 Hz	116 Hz
10	9 Hz	32 Hz	80 Hz	96 Hz	128 Hz
11	10 Hz	34 Hz	84 Hz	104 Hz	140 Hz
12	10 Hz	36 Hz	92 Hz	112 Hz	152 Hz
13	10 Hz	40 Hz	100 Hz	120 Hz	172 Hz
14	11 Hz	44 Hz	112 Hz	128 Hz	200 Hz
15	12 Hz	48 Hz	124 Hz	136 Hz	216 Hz
16	13 Hz	54 Hz	140 Hz	152 Hz	248 Hz
17	14 Hz	60 Hz	152 Hz	168 Hz	280 Hz
18	15 Hz	64 Hz	160 Hz	176 Hz	304 Hz
19	16 Hz	66 Hz	168 Hz	184 Hz	324 Hz
20	16 Hz	70 Hz	172 Hz	192 Hz	344 Hz
21	17 Hz	74 Hz	180 Hz	200 Hz	368 Hz
22	18 Hz	78 Hz	192 Hz	216 Hz	392 Hz
23	19 Hz	82 Hz	200 Hz	232 Hz	424 Hz
24	19 Hz	88 Hz	212 Hz	240 Hz	452 Hz
25	21 Hz	94 Hz	224 Hz	264 Hz	492 Hz
26	22 Hz	100 Hz	236 Hz	280 Hz	536 Hz
27	23 Hz	108 Hz	252 Hz	312 Hz	656 Hz
28	25 Hz	118 Hz	272 Hz	344 Hz	752 Hz
29	26 Hz	128 Hz	292 Hz	384 Hz	880 Hz
30	29 Hz	142 Hz	312 Hz	448 Hz	1.02 KHz
31	32 Hz	162 Hz	344 Hz	512 Hz	1.26 KHz
32	35 Hz	180 Hz	372 Hz	616 Hz	1.56 KHz
33	38 Hz	198 Hz	400 Hz	752 Hz	2.11 KHz
34	40 Hz	212 Hz	424 Hz	888 Hz	2.65 KHz
35	41 Hz	226 Hz	440 Hz	1.00 KHz	3.12 KHz
36	43 Hz	238 Hz	456 Hz	1.17 KHz	3.77 KHz
37	44 Hz	248 Hz	472 Hz	1.37 KHz	4.90 KHz
38	45 Hz	256 Hz	480 Hz	1.53 KHz	5.88 KHz
39	46 Hz	264 Hz	492 Hz	1.69 KHz	6.70 KHz
40	46 Hz	264 Hz	492 Hz	1.77 KHz	7.40 KHz
41	46 Hz	270 Hz	500 Hz	1.77 KHz	7.50 KHz

INSTALLATION / MOUNTING

NOTE:

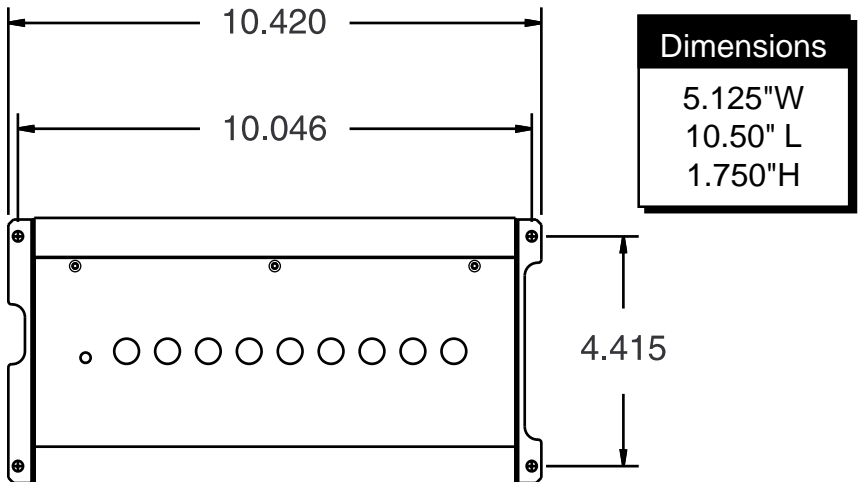
Before beginning, disconnect the negative (-) terminal of the battery to prevent an electrical short to ground. Reconnect the negative terminal only after all connections have been made.

Mounting

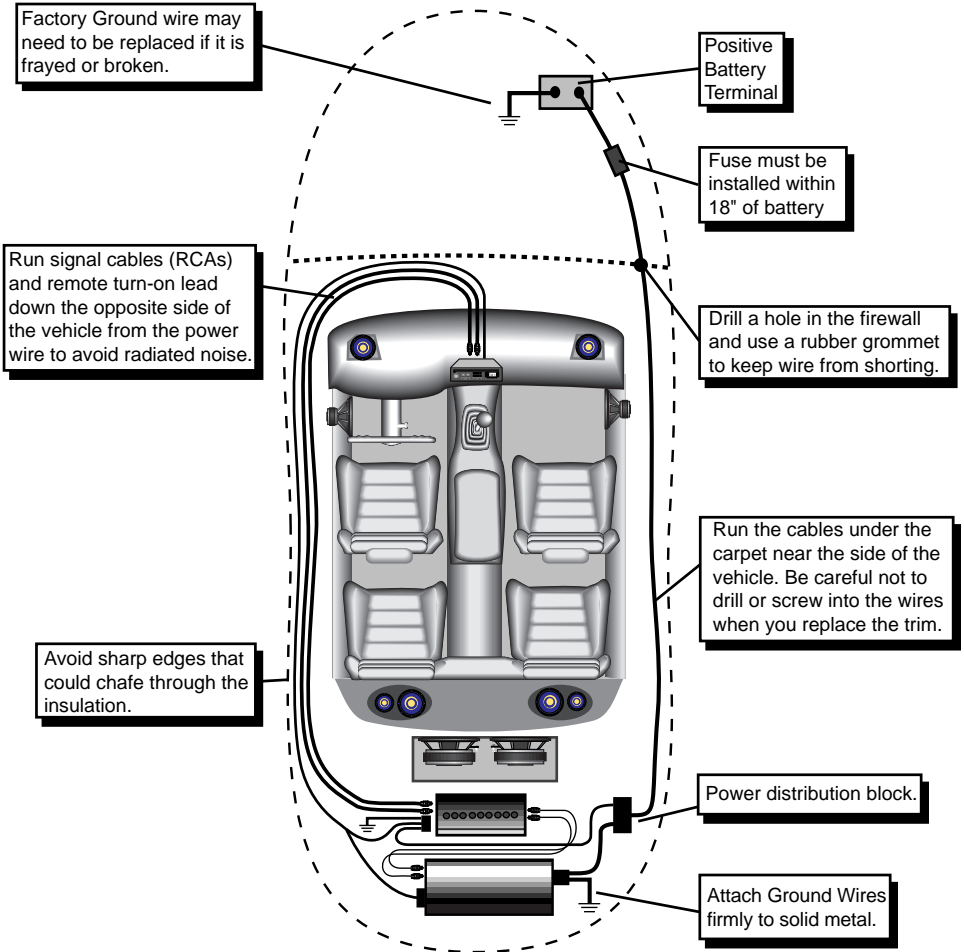


To prevent damage to the crossover while driving, mount it in a secure place. Choosing the appropriate location will depend upon your vehicle and the complexity of your system design. Typical mounting locations include the trunk and passenger compartment (floor or under seat). Never mount the crossover in a location that would subject it to immersion or exposure to water.

Once a location has been chosen, securely mount the **FRX-456** with four mounting screws. Be Careful! Inspect the area underneath to be sure you are not drilling into wires, brake or fuel lines, etc. that could be damaged by the drill bit or screws.



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 **FRX-456**. 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.

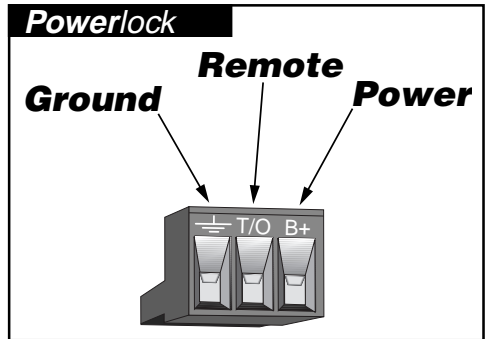
The ground wire should be of the same gauge as the power wire. As a rule of thumb, use as short a length of wire as possible.

Find a location near the crossover 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 **FRX-456** when the main system is activated.

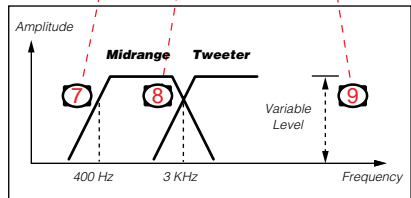
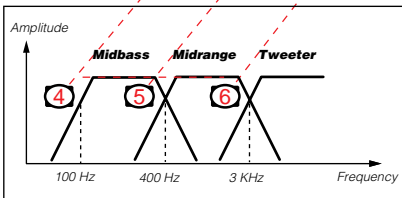
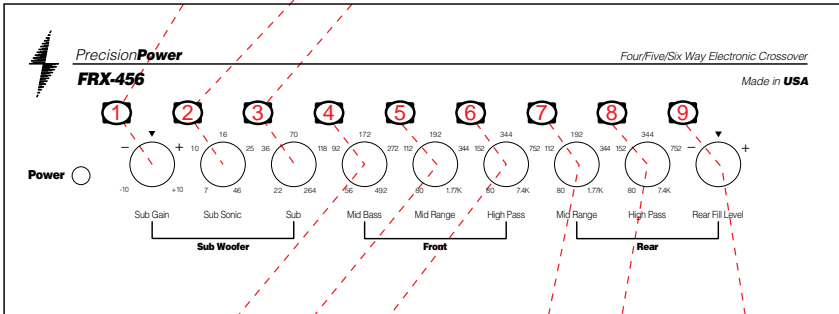
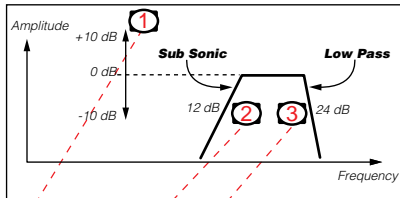
Once you have routed the power, ground, and remote wires through the vehicle, it is time to connect the wires to the **FRX-456**. Be sure that you have not reconnected the ground cable to the negative post of the battery.

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 **FRX-456**.

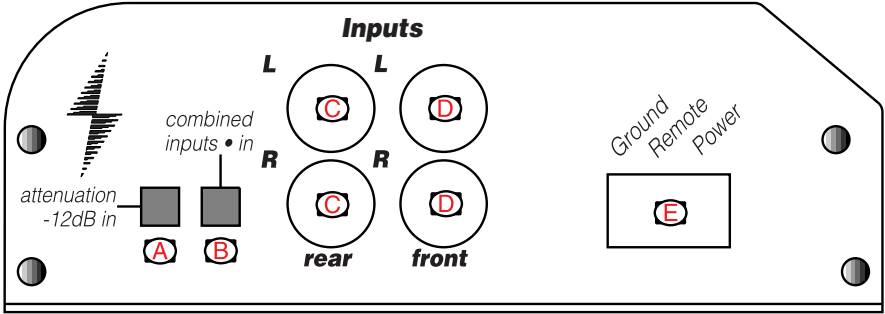


FUNCTIONS

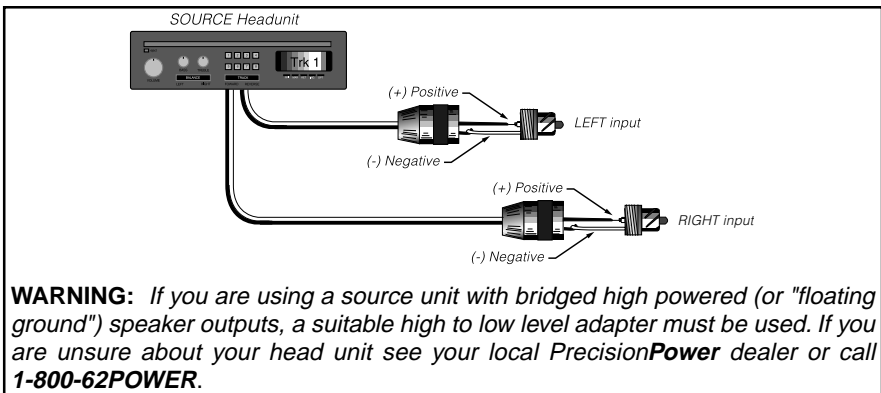
- ① **Sub Gain:** Adjusts Sub output level allowing a boost or cut of +/- 10dB.
- ② **Sub Sonic:** Sets a high pass to filter low Sub Sonic frequencies.
- ③ **Sub:** Sets lowpass Crossover frequency for the Sub output.
- ④ **Mid Bass:** Sets the Highpass crossover frequency to the Front Mid Bass Output.
- ⑤ **Mid Range:** Tracking 2-way crossover frequency sets Low pass to Front Mid Bass output and High pass to Front Mid Range output.
- ⑥ **High Pass:** Tracking 2-way crossover frequency sets High pass to Front High Pass output and Low pass to Front Mid Range output.
- ⑦ **Mid Range:** Sets High pass crossover frequency to Rear Mid Range output.
- ⑧ **High Pass:** Tracking 2 way crossover sets High pass frequency to Rear High Pass output and Low pass frequency to Rear Mid Range output.
- ⑨ **Rear Fill Level:** This attenuates the rear outputs.



INPUT



- A** *Attenuation* - Push this switch in to accept high level RCA inputs (up to 8v) or direct speaker lead inputs from common grounded (not high powered) headunits. See diagram below for wiring.
- B** *Combined Inputs* - Push this switch IN to connect Front and Rear Inputs. Leave the switch OUT for front/rear fading.
- C** *Rear Inputs* - For fading rear fill, connect the rear RCAs from your head unit here.
- D** *Front Inputs* - Connect the front RCAs from your head unit here.
- E** After connecting Ground, Remote, and Power wires, plug in the **Powerlock** connector here.



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

TROUBLE SHOOTING

NO SOUND

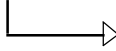
Is the LED lit?

YES

Check Input cables for signal by connecting them straight to the Subwoofer amplifier

NO

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



ANY SOUND NOW?

YES

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

NO

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

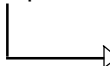
SOUND IN ONE CHANNEL ONLY

Reverse left and right RCA outputs for one band (i.e. subwoofers).

SOUND IS NOW IN

OPPOSITE CHANNEL

Reverse RCA inputs



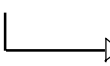
SOUND IS NOW IN

SAME CHANNEL

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

OPPOSITE CHANNEL

Reverse RCAs at head unit (Check Balance control)



SOUND IS NOW IN

SAME CHANNEL

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

OPPOSITE CHANNEL

Problem is in the head unit

SAME CHANNEL

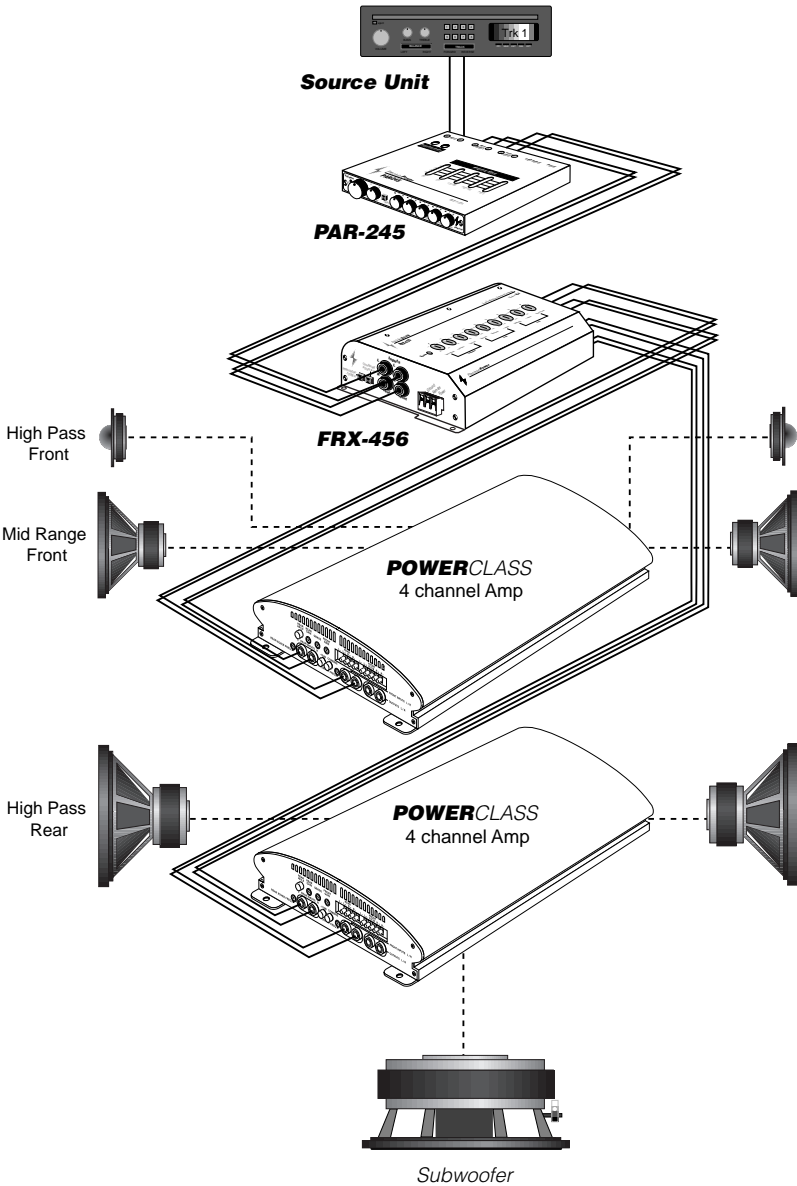
Problem is in the RCA cables

LOW OUTPUT FROM ONE BAND

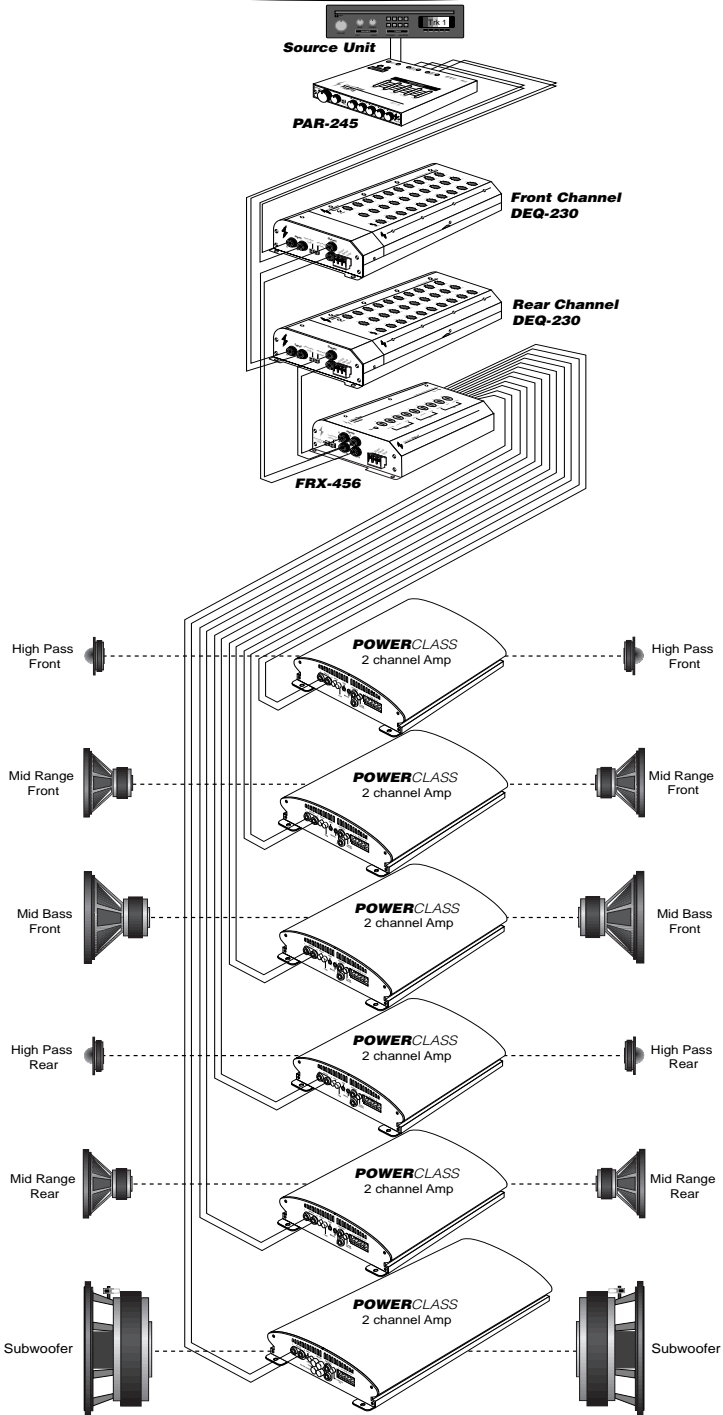
Check crossover frequencies for Low Pass points set higher than High Pass points, check level control setting for Sub and Rear Fill, and check gain control on the affected amplifier(s).

STILL LOW OUTPUT - See your local Authorized *PrecisionPower* Dealer or Call 1-800-62**POWER**.

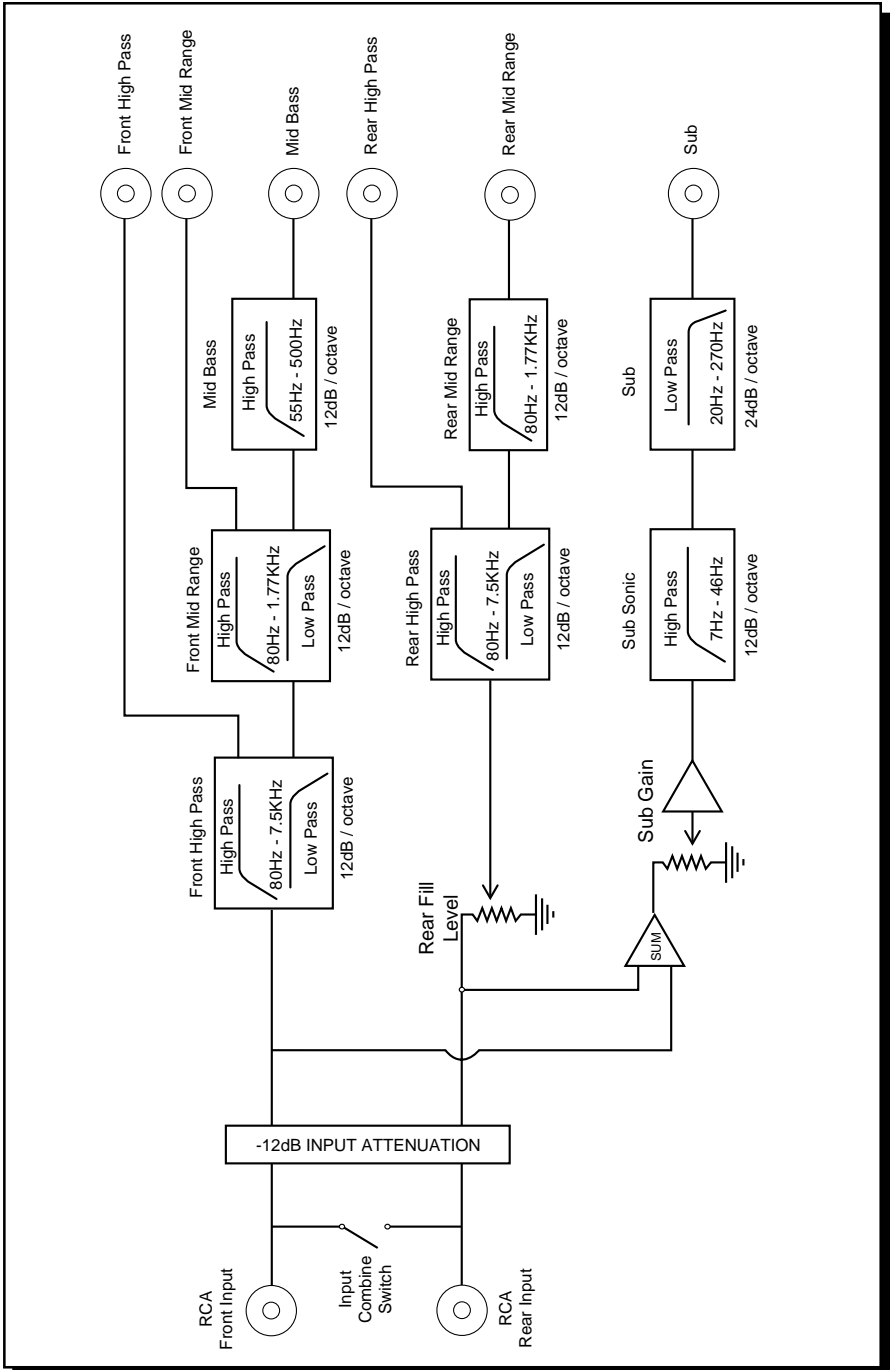
SYSTEM ONE DIAGRAM



SYSTEM TWO DIAGRAM



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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