

# POWERCLASS™

## PC1400 / PC1800 OWNER'S MANUAL



# 100%

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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.

# FEATURES / SPECIFICATIONS

1400

Adaptive MOSFET Switching Power Supply  
Fully Complementary Triple Darlington Output Stage  
2 Way Variable Crossover with Line Outputs  
**AP-III** Protection Circuitry  
**QBASS™** Bass Boost  
Balanced Differential Input Stage  
High Voltage Input Capability with Input Attenuation Switch  
Gold Plated RCA Input and Output Connectors  
**PowerLock** Speaker and Power Wire Connectors  
Three Year Warranty when installed by an Authorized  
**PrecisionPower** Dealer  
Completely Designed And Handcrafted In The USA

## Specifications



Power Bandwidth	4.5 Hz - 100 kHz
Total Harmonic Distortion	0.02 %
Input Topology	Balanced Differential
Input Sensitivity	120 mv - 12 volts RMS
Input Impedance	10 k Ohms
Load Impedance	2 - 8 Ohms
Supply Voltage	11 - 15 volts
Damping Factor	>500
Slew Rate	>50 V/μS
QBASS™	Up To +12dB Boost @ 40Hz
Idle Current	.7 Amps
Crossover	Hp/Lp 12dB/Octave Linkwitz-Riley
Crossover Frequency	Variable 20-5kHz

## Continuous Output Power



**PC1400**  
200 WRMS x 1 @ 4 ohms  
400 WRMS x 1 @ 2 ohms

## Dimensions



**PC1400**  
Length - 11.75"  
Height - 2.25"  
Width - 8.9"

# FEATURES / SPECIFICATIONS

1800

Adaptive MOSFET Switching Power Supply  
Fully Complementary Triple Darlington Output Stage  
**AM IV** Protection Circuitry  
**QBASS PLUS™** Bass Boost  
**QBASS REMOTE™** Compatible  
Advanced Buss Technology  
Forced Air Thermal Management  
Detented, Variable 24dB/Octave Low Pass Crossover  
Detented, Variable 24dB/Octave Subsonic Filter  
Balanced Differential Input Stage  
High Voltage Input Capability with Input Attenuation Switch  
Gold Plated RCA Input Connectors  
**PowerLock** Speaker and Power Wire Connectors  
Three Year Warranty when installed by an Authorized  
**PrecisionPower** Dealer  
Completely Designed And Handcrafted In The USA

## Specifications



Power Bandwidth	4.5 Hz - 100 kHz
Total Harmonic Distortion	0.02 %
Input Topology	Differential
Input Sensitivity	150 mv - 12 volts RMS
Input Impedance	10 k Ohms
Load Impedance	2 - 8 Ohms
Supply Voltage	11 - 15 volts
Damping Factor	>500
Slew Rate	>50 V/μS
QBASS PLUS™	Up To +18dB Boost
Frequency Centers	30 Hz, 36 Hz, 44 Hz and 60 Hz
Idle Current	2 Amps
Crossover	LP, 24dB/Octave Linkwitz-Riley
Crossover Frequency	50 Hz - 300 Hz
Subsonic Filter	24dB/Octave
Subsonic Frequency	5 Hz - 50 Hz

## Continuous Output Power



**PC1800**  
400 WRMS x 1 @ 4Ω  
800 WRMS x 1 @ 2Ω

## Dimensions



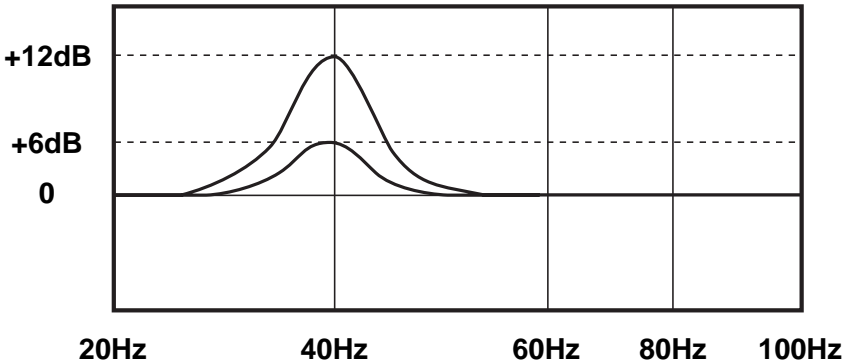
**PC1800**  
Length - 21.75  
Height - 2.25"  
Width - 8.9"

## QBASS™



On the **PC1400** amplifier, we offer tremendous control of your bass with **QBASS™**. On the front end panel of your **PC1400** you will find the **QBASS™** level control. Adjust the level control clockwise for up to 12dB of boost at a factory preset frequency of 40Hz.

## QBASS™



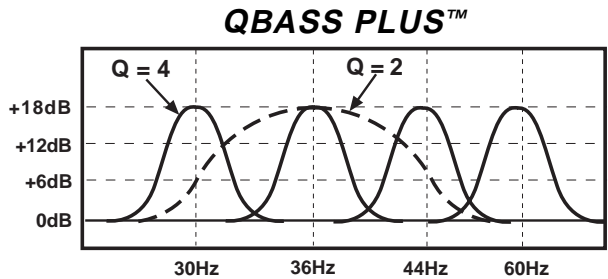
**CAUTION:** **QBASS™** should only be used in systems with strong subwoofers. 12dB is a lot of bass boost and could damage full range speakers.

## QBASS PLUS™



On the **PC1800** amplifier, we've taken bass control to a higher level with **QBASS PLUS™**. The two **QBASS** switches (labeled 1 and 2) on the front end of the amplifier allow you to select one of four frequency centers 30Hz, 36Hz, 44 Hz and 60 Hz. The Q SELECT switch determines the width of boosted frequencies. A 'Q' of 2 (switch out) will give you a wide boost while a 'Q' of 4 will boost a narrow range of frequencies. (See chart below.) On the rear end panel you will find the **QBASS™** level control and the plug-in for an optional **QBASS REMOTE™** dash mounted level control. Adjust the level control clockwise for up to 18dB of boost at your selected frequency and Q.

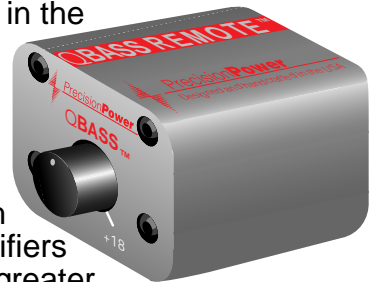
QBASS™ Settings		
1	2	Freq.
IN	IN	30 Hz
IN	OUT	36 Hz
OUT	IN	44 Hz
OUT	OUT	60 Hz



**CAUTION:** **QBASS PLUS™** should only be used in systems with strong subwoofers. 18dB is a lot of bass boost and could damage full range speakers.

### Optional **QBASS REMOTE™**

This boost control can be mounted in the dash and will supersede the boost control on the endplate.



Optional **QPORT™** expansion module allows one boost control to operate multiple amplifiers. Each **QPORT™** has outputs for four amplifiers as well as to another **QPORT™** for greater expansion. See your Authorized **PrecisionPower** Dealer for more information!

# INSTALLATION

## Tools/Parts needed for Installation (not supplied)



- Small flat blade screwdriver
- Phillips Screwdriver (#2 or medium sized)
- Wire cutters
- Wire strippers
- 4 - #6 round head screws, and 1 - #8 sheet metal screw (or nut, bolt, and star washer)
- 2 - Ring connectors (large enough to accommodate your method of grounding)
- In-line fuse or circuit breaker - see fuse chart below
- Power and ground wire - see Power Wire Calculator on page 4
- Speaker wire - 16 gauge or larger
- Grommets (sized to work with the power wire you plan to use in your installation)
- Tube of silicone sealant

## Fuse requirements



Amplifier	Maximum Fuse Rating
<i>PC1400</i>	35 Amp
<i>PC1800</i>	100 Amp

**You will need to install an in-line fuse or circuit breaker in the power wire within 18" of the battery. This fuse or circuit breaker is to protect your vehicle from fire in case the power wire shorts to the vehicle body.** If you are only using one amplifier, use the fuse rating indicated in this chart. If you are using more than one amplifier, add up the fuse ratings for all the amplifiers. This sum is the rating for your main fuse or circuit breaker. Use a power distribution block or fuse near your amplifiers with the appropriate fuse for each individual power wire.

# WIRING

The following is a basic formula to be used as a guide to determine current draw. A 50% amplifier efficiency rating is used as an average. Your new **POWERCLASS™** amplifier is more efficient, other amplifiers will probably be less. This formula is to be used as a guideline. Using wire of a larger gauge can only improve the current transfer of your system. Do not use smaller gauge wire.

Total RMS output x 2 = Total Input Wattage

$$\frac{\text{Total Input Wattage}}{\text{Supply Voltage}} = \text{Current Draw (in Amps)}$$

Example: A **POWERCLASS™** 1800 amplifier has one channel at 400 watts per channel RMS rating into 4 Ohms. You would use the formula in the following way:

$$400W \times 2 = 800W$$

$$\frac{800W}{12V} = 66.6A \text{ Total current draw.}$$

If the same amplifier is driven into a 2 ohm mono load, double it's 4 Ohm RMS rating. All **POWERCLASS™** amplifiers will effectively double their power at this load.

$$400W \times 2 \times 2 = 1600W$$

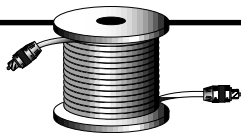
$$\frac{1600W}{12V} = 133.3A \text{ Total current draw.}$$

If you are using more than one amplifier, add up the total current draw for all of them and choose the appropriate gauge based on the grand total.

## Power Wire Calculator



### Recommended MINIMUM Gauge



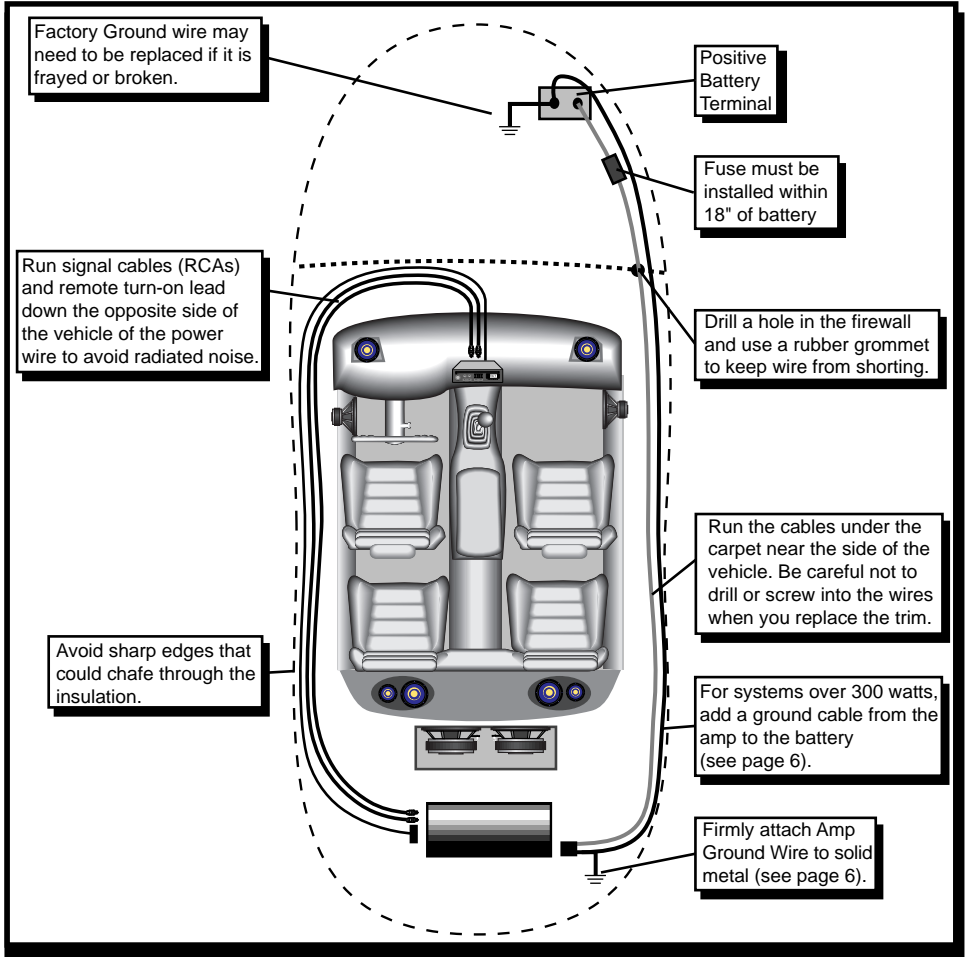
Total Current Draw ( in Amps)	Length Of Wire To Be Run							
	Up to 4ft.	4 to 7ft.	7 to 10ft.	10 to 13ft.	13 to 16ft.	16 to 19ft.	19 to 22ft.	22 to 28ft.
0-20	14	12	12	10	10	8	8	8
20-35	12	10	8	8	6	6	6	4
35-50	10	8	8	6	6	4	4	4
50-65	8	8	6	4	4	4	4	2
65-85	6	6	4	4	2	2	2	0
85-105	6	6	4	2	2	2	2	0
105-125	4	4	4	2	2	0	0	0
125-150	2	2	2	2	0	0	0	00

**NOTE:** The ground wire should be the same gauge as the power wire.



# WIRING

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.



## **Warning!**

*Fuse must be installed within 18" of battery*



## Grounding



Locate an area near the amplifier(s) that is metal and clean an area about the size of a quarter to bare metal. Inspect the area around and underneath to be sure you won't drill into wires, brake or fuel lines, etc. Drill a pilot hole in the middle of this area. Terminate the ground wire with a ring connector and attach it to the bare metal using a #8 sheet metal screw and washer or preferably, a bolt, nut and a star washer (not supplied). We suggest crimping and soldering this connection. After the connection is complete, coat the area (on both sides) with silicone or some similar material to prevent rust from developing on the bare metal.

If your grand total current draw is over 50 amps (or total output power is over 300 watts), you should run a ground wire beside your power wire from the battery to the amplifier(s) in addition to your regular ground wire. Keep the ground and power wires as close together as possible, and use the same gauge wire for both. This will ensure that you have a good ground path, and may eliminate such potential problems as engine noise and overheated amplifiers.

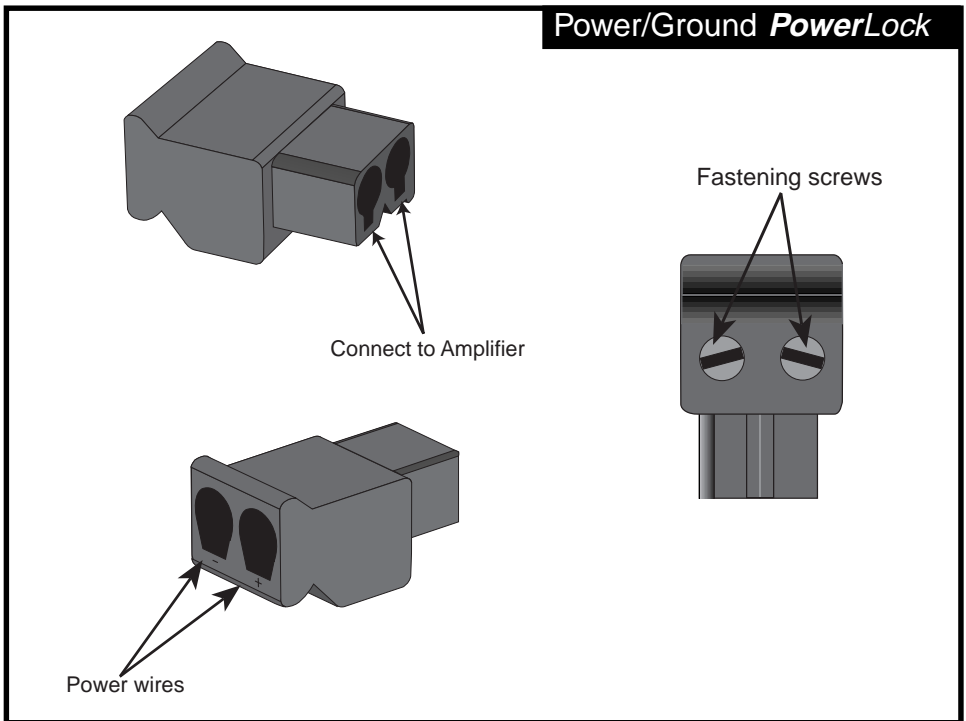
## Charging System Considerations



If your grand total current draw is over 100 amps (or total output power is over 600 watts), you are probably exceeding the capability of your charging system. Dimming lights and fluctuating voltage are solid indicators that you need to upgrade your alternator, battery (or go to multiple batteries), or both. Keep in mind that your amplifiers simply convert electrical energy to acoustical energy, and any electrical deficiency will compromise the performance of your sound system. For more information about charging system upgrades, see your local authorized *PrecisionPower* Dealer or call the *PrecisionPower* technical support office at 1-800-62**POWER**.

## POWER / GROUND and REMOTE

Once you have run both the power and ground wires, it's time to connect the cables to the amplifier. Cut off excess wire and, using wire strippers, strip the ends of the power and ground cables approximately 1/4 inch. Locate the **PowerLock** power and ground connector (supplied). With a small flat bladed screw driver, loosen the screws before attempting to insert the cables. Insert the wires into the appropriate hole, and tighten the screws. Once the wires are secure, the **PowerLock** may be plugged into the amplifier. The Power/Ground **PowerLock** will accommodate 4 gauge wire for the **PC1400/PC1800**.



### Remote turn-on

Your head unit should have a lead marked 'remote' or 'power antenna' which will be used to turn on your amplifier. Extend this lead through your vehicle along with your RCA signal wires. Strip 1/4 inch of insulation off the wire and insert the end into the center terminal of the 5-pin speaker/remote **PowerLock**.

# ENDPLATE DIAGRAM

## 1400

### 1. INPUTS

Plug in the RCA leads from your head unit or crossover here (see page 13).

### 2. GAIN

Use this control to match the output level of the head unit to the amplifier (see page 15).

### 3. -12dB

For use with high level inputs (4V up to 12V). Push this switch in to attenuate the input by 12dB (see page 13).

### 4. XOVER FREQ.

Detented control adjusts HP/LP crossover frequency from 20Hz to 5kHz (see pages 15 & 17).

### 5. HP/LP BUTTON

Push this switch in to activate the high pass crossover or out for lowpass signal to the speakers.

### 6. QBASS™ Level

Turn this control clockwise to boost the **QBASS™** circuit by up to 12dB.

### 7. RCA OUTPUTS

Provide either HP/LP signal to another amplifier. This signal will be HP if you've selected LP for the speaker outputs, and vice versa.

### 8. SPEAKER/REMOTE CONNECTOR

After connecting remote and speaker wires, plug in the **PowerLock** connector here

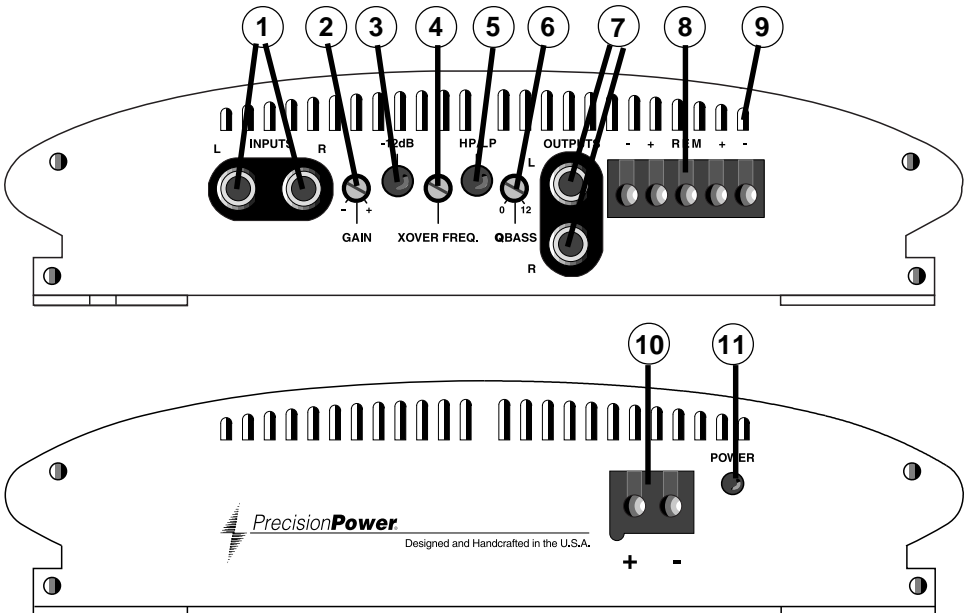
### 9. COOLING VENTS.

### 10. POWER / GROUND **PowerLock**

After you have **securely** connected your power and ground wires, plug in the Power / Ground **PowerLock** connector here (see page 9).

### 11. POWER indicator

A green light indicates that the amplifier is on.



# ENDPLATE DIAGRAM

## 1800

### 1. INPUTS

Plug in the RCA leads from your head unit or crossover here (see page 13).

### 2. GAIN

Use this control to match the output level of the head unit to the amplifier (see page 15).

### 3. SUBSONIC FREQ.

This is used to control the detented subsonic filter from 5Hz to 50Hz (see pages 15 & 16 ).

### 4. LOWPASS FREQ.

Detented control adjusts LP crossover frequency from 50Hz to 300Hz (see pages 15 & 16 ).

### 5. SUBSONIC ON/OFF

Push this switch in to activate the subsonic filter (see page 15 ).

### 6. LOWPASS ON/OFF

Push this switch in to activate the LP crossover (see page 15 ).

### 7. Q SELECT 4/2

Push this button in for a Q setting of 4 and out for a setting of 2 (see page 4).

### 8. SPEAKER/REMOTE CONNECTOR

After connecting remote and speaker wires, plug in the PowerLock connector here (see page 12).

### 9. FORCED AIR EXHAUST VENTS (see page 14).

### 10. -12dB

For use with high level inputs (4V up to 12V). Push this switch in to attenuate the input by 12dB (see page 13).

### 11. QBASS 1

Use this switch with the QBASS 2 to program the QBASS PLUS™ circuit. (see page 4).

### 12. QBASS 2

Use this switch with the QBASS 1 to program the QBASS PLUS™ circuit. (see page 4).

### 13. FORCED AIR INTAKE VENTS (see page 14).

### 14. QBASS™ Level

Turn this control clockwise to boost the QBASS PLUS™ circuit by up to 18dB.

### 15. QBASS REMOTE™ plug in

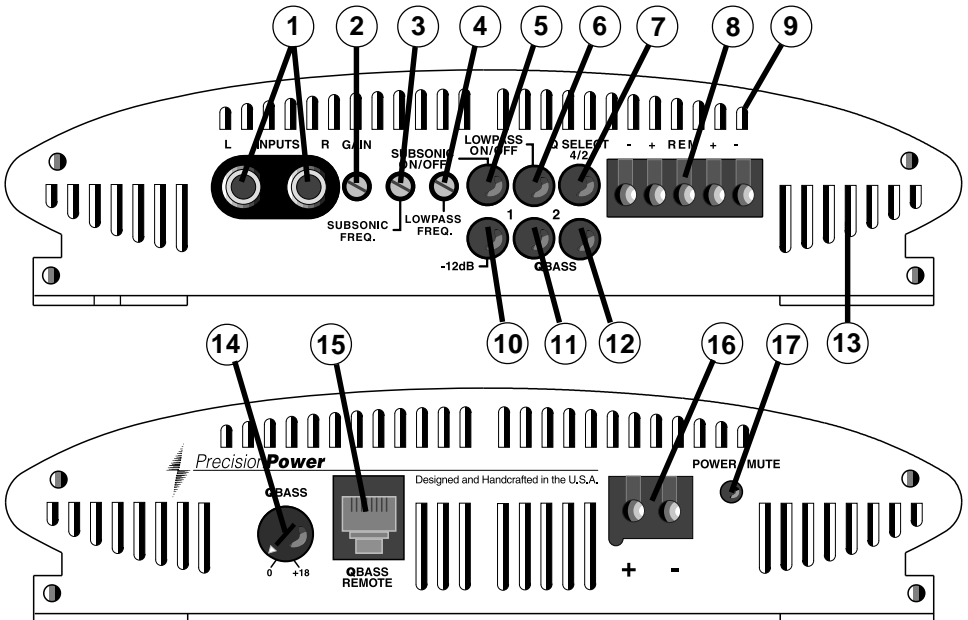
Plug in the data cable from the optional QBASS REMOTE™ dash mount level control here. (This will bypass the amplifier's on board QBASS control)

### 16. POWER / GROUND PowerLock

After you have securely connected your power and ground wires, plug in the Power / Ground PowerLock connector here (see page 9).

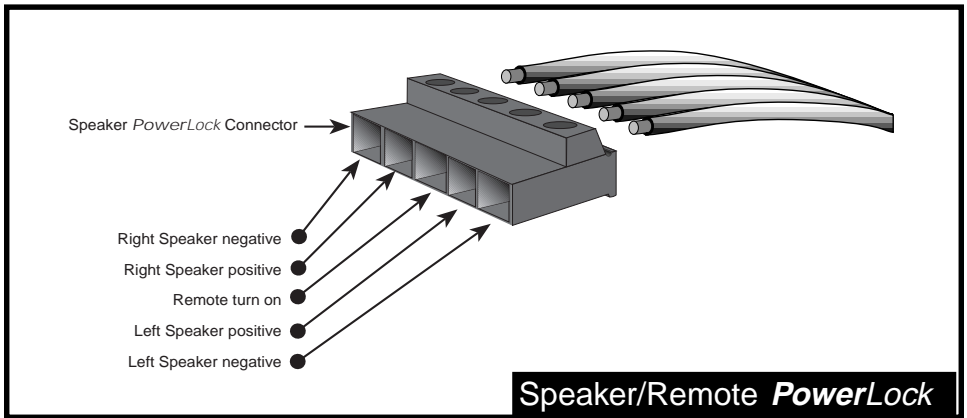
### 17. POWER / MUTE indicator

A green light indicates that the amplifier is on, a red light indicates that the amplifier's muting circuits have been engaged.



## SPEAKER WIRING

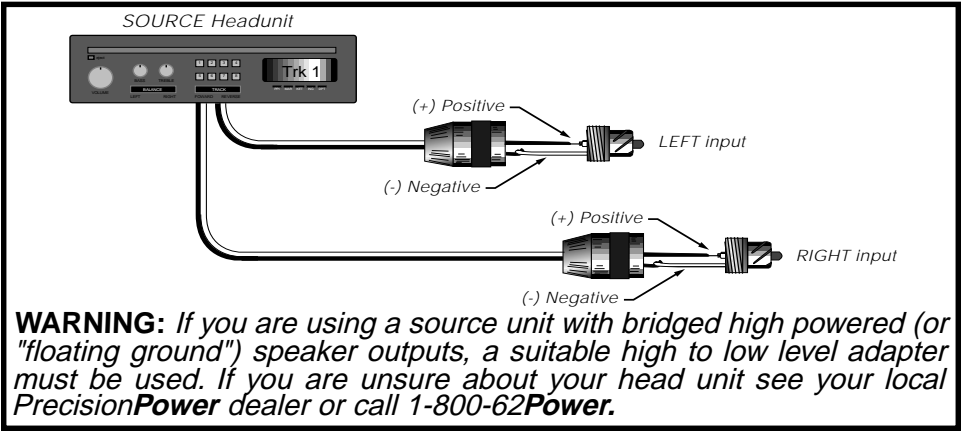
Using 14 gauge or larger, run the speaker wires from the amplifier location through the vehicle to the speakers. Observe the same precautions for routing these wires that you followed for running the power and remote turn-on wires. Locate the speaker/remote turn-on **PowerLock** connector.



Although the **PC1400/PC1800** is a mono amplifier, you will notice that there are two 'speaker negative' and two 'speaker positive' terminals as well as the 'remote turn-on' terminal. The two pairs of speaker terminals are parallel with each other, so you can use one each of the positive and negative, or you can use both sets for two speakers. Cut off excess and, using wire strippers, strip 1/4 inch of insulation. Loosen the appropriate screws on the underside of the connector, and insert the speaker leads into the end. Check to be sure you've maintained proper polarity before securing each wire, then plug the **PowerLock** connector into the amplifier with the screws facing down.

# INPUTS

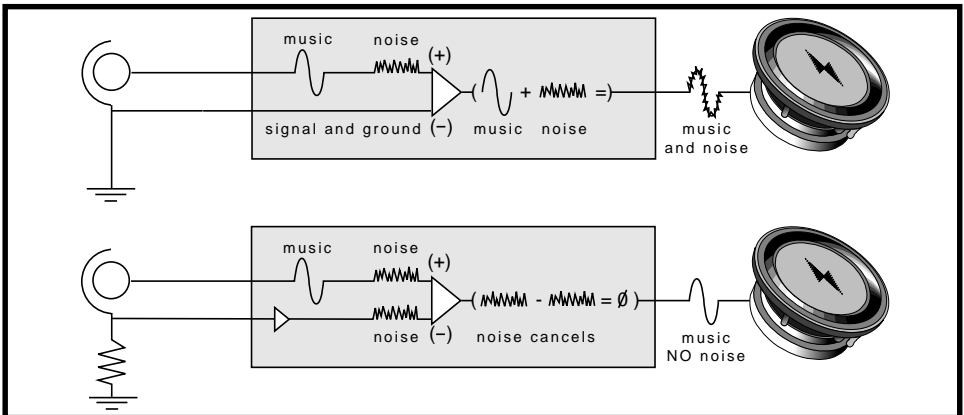
There is a pair of RCA inputs on the front end of your amplifier. The RCA cables from your head unit or crossover plug in here. If your head unit doesn't have RCA outputs don't worry. Simply add a set of RCA plugs (available at your dealer) to your front or rear set of speaker leads (see drawing below), plug them into the input jacks, and push in the -12dB input attenuation switch.



## Balanced Differential Inputs



This circuitry reduces noise radiated into your signal cables by up to 40dB. This is equivalent to a noise reduction of approximately one hundred times what the noise level would be without this circuitry. It provides all the benefits of a true 'balanced' line without the need of any special cables (see diagram below). This type of input works with any conventional RCA cable.

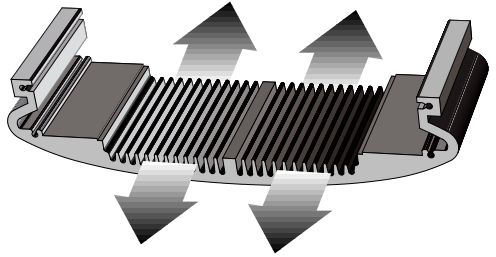


# THERMAL MANAGEMENT

## Heatsink Cooling



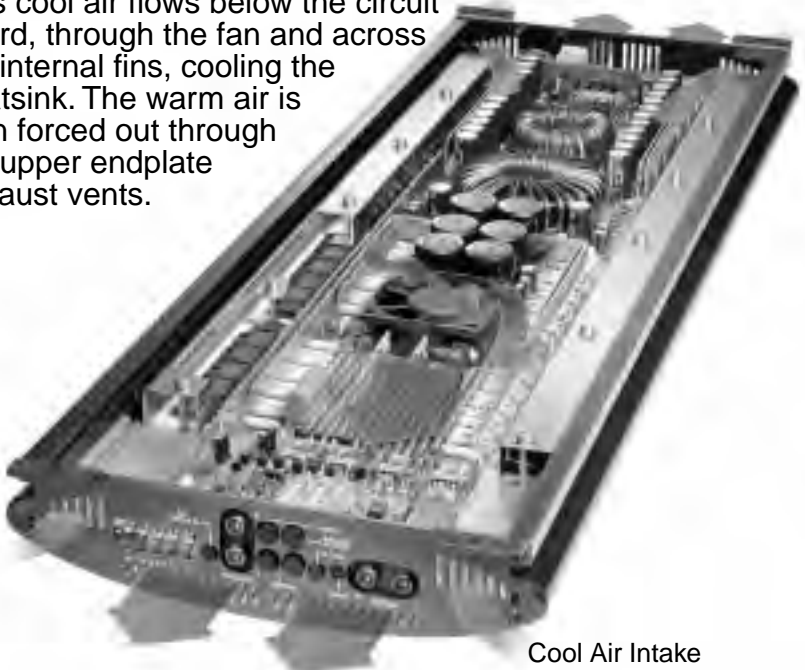
The unique heatsink on your **POWERCLASS™** amplifier has been designed with fins on the inside of the aluminum mass. This allows for the transfer of heat from the circuitry to the heatsink fins and out through the vents in the endplates. Be sure you have ample space around the amplifier for cooling, at least 2" on all sides.



## Forced Air Thermal Management



To manage the additional heat associated with higher output capability, a thermally controlled fan has been designed into the **PC1800**. When the heatsink temperature reaches a predetermined value, the fan is activated and cool air is drawn in through the lower intake vents on the endplate. This cool air flows below the circuit board, through the fan and across the internal fins, cooling the heatsink. The warm air is then forced out through the upper endplate exhaust vents.



Warm Air Exhaust

Cool Air Intake



# CROSSOVER, SUBSONIC and GAIN

## Crossover



### **PC-1400**

Your new **Monoblock** amplifier has a variable 20-5kHz 12dB/Octave HP/LP crossover. When you select the LP feature on this amplifier you have made the output RCA's HP, and vice versa when you select HP for the speaker output.

### **PC-1800**

The PC-1400 has a variable fourth-order Linkwitz-Riley type, 24dB per octave LP crossover built in to provide system flexibility without the added expense and installation of an outboard crossover. The speaker outputs of the amplifier are all pass or LP according to the LP ON/OFF switch on the amplifier's front endplate. You would choose LP (switch in) to use this amp for subwoofers, or choose all pass (switch out) to use this amp for full range speakers. Selection of low pass lets you vary the crossover point from 50Hz to 300Hz using the detented LP FREQ. control, 50Hz being fully counterclockwise. (see frequency detent charts on pg.16 )

## Subsonic Filter



You will also find the SUBSONIC ON/OFF switch on the front endplate of your PC-1800. This is a 24dB per octave HP crossover used to clean up the sound of your subwoofers, and is especially useful with ported or bandpass sub enclosures with steeper rolloffs at low frequencies. With the Subsonic filter switch in, you can vary the HP frequency from 5Hz to 50Hz using the detented SUBSONIC FREQ. control, 5Hz being fully counterclockwise. Refer to the Frequency Chart on page 13 to set your frequency or adjust the filter to the lowest frequency and turn the control clockwise as the music plays. You will notice increased detail to a point and then you will notice a decrease in bass. Turn back to the detent frequency just before you started losing bass.

## Adjusting The Amplifier Input Gain



1. Adjust all amplifier input gain controls to just above minimum sensitivity (fully counterclockwise).
2. Using the cleanest source (CD), with music playing turn up the head unit until you can hear distortion. Now turn it down a bit until you cannot hear the distortion.
3. Increase the Amplifier gain (clockwise) until the onset of audible distortion. Then decrease the gain to the point just before the distortion starts. This setting minimizes background noise and prevents overload.
4. Repeat step 3 for any remaining amplifiers in the system.

# FREQUENCY CHART

## PC1800

All crossover frequency controls are detented for improved performance. Each "click" counted from the full counterclockwise position corresponds to a specific frequency. Refer to this chart and page 12 for set-up instructions.

DETENT	SUBSONIC	LOW PASS
1	4.86 Hz	47.62 Hz
2	4.86 Hz	47.62 Hz
3	4.86 Hz	48.62 Hz
4	4.93 Hz	50.20 Hz
5	5.08 Hz	52.80 Hz
6	5.30 Hz	55.60 Hz
7	5.58 Hz	58.80 Hz
8	5.88 Hz	62.00 Hz
9	6.20 Hz	65.60 Hz
10	6.66 Hz	69.40 Hz
11	7.07 Hz	74.00 Hz
12	7.67 Hz	78.80 Hz
13	8.32 Hz	84.75 Hz
14	9.15 Hz	91.25 Hz
15	10.04 Hz	99.25 Hz
16	11.20 Hz	109.37 Hz
17	12.72 Hz	117.50 Hz
18	14.04 Hz	122.80 Hz
19	15.15 Hz	131.60 Hz
20	16.30 Hz	140.00 Hz
21	17.70 Hz	148.80 Hz
22	19.31 Hz	159.60 Hz
23	21.25 Hz	172.50 Hz
24	23.87 Hz	187.50 Hz
25	27.04 Hz	206.87 Hz
26	31.76 Hz	215.62 Hz
27	33.40 Hz	223.12 Hz
28	34.90 Hz	229.37 Hz
29	36.50 Hz	237.50 Hz
30	38.20 Hz	243.75 Hz
31	40.00 Hz	251.00 Hz
32	41.62 Hz	255.00 Hz
33	42.87 Hz	258.00 Hz
34	43.87 Hz	262.00 Hz
35	45.00 Hz	266.00 Hz
36	46.00 Hz	270.00 Hz
37	47.25 Hz	274.00 Hz
38	48.37 Hz	277.00 Hz
39	49.20 Hz	278.00 Hz
40	49.40 Hz	278.00 Hz
41	49.40 Hz	300.00 Hz

# FREQUENCY CHART

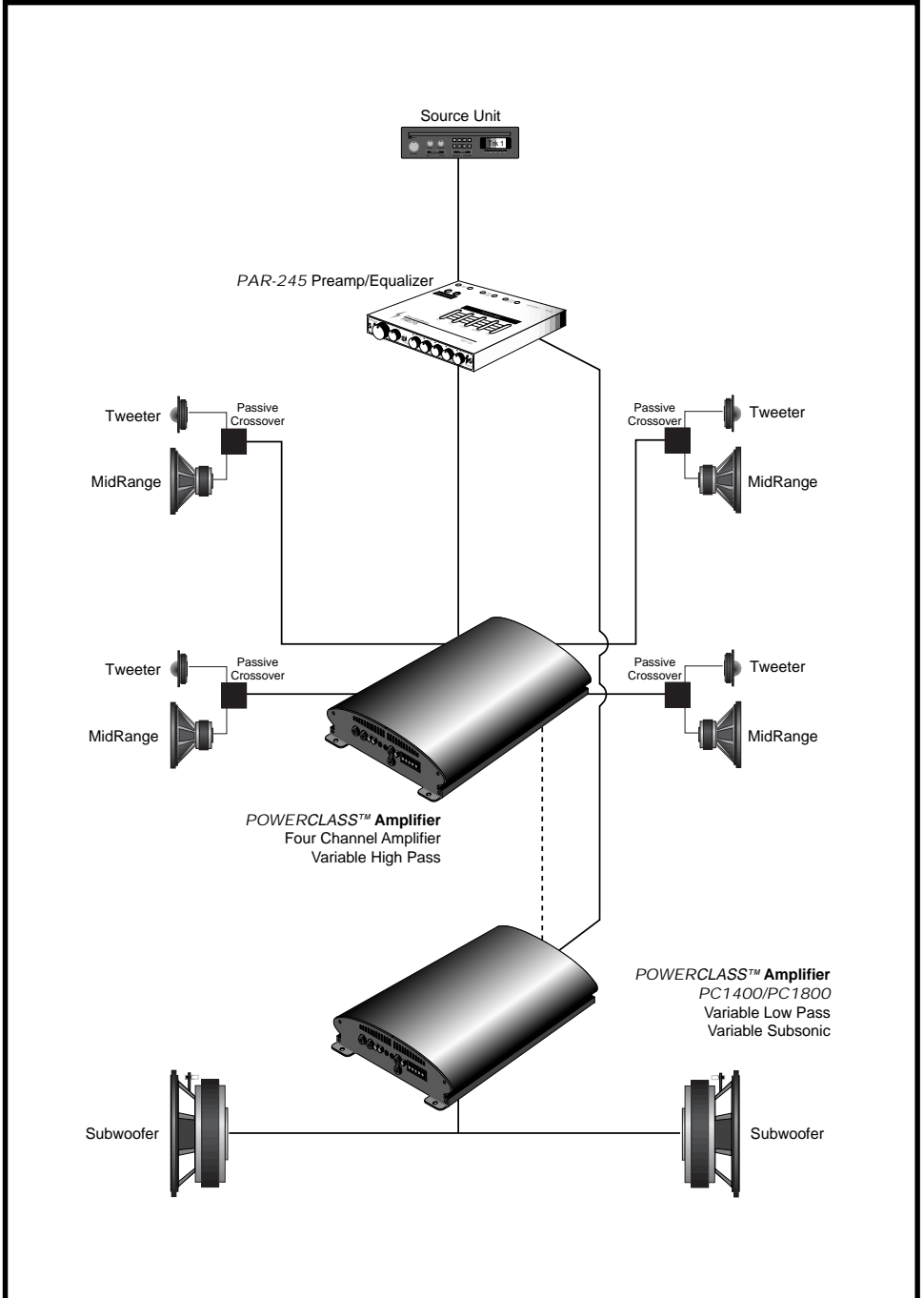
## PC1400

The crossover frequency control is detented for improved performance. Each "click" counted from the full counterclockwise position corresponds to a specific frequency. Refer to this chart and page 15 for set-up instructions.

DETENT	XOVER FREQ
1	20 Hz
2	21 Hz
3	21 Hz
4	21.5 Hz
5	22Hz
6	23 Hz
7	24.5 Hz
8	26 Hz
9	27.5 Hz
10	30 Hz
11	32 Hz
12	35 Hz
13	39 Hz
14	43 Hz
15	49 Hz
16	56 Hz
17	64 Hz
18	73 Hz
19	80 Hz
20	88 Hz
21	100 Hz
22	114 Hz
23	134 Hz
24	160 Hz
25	196 Hz
26	260Hz
27	320 Hz
28	368 Hz
29	432 Hz
30	496 Hz
31	608 Hz
32	752 Hz
33	864 Hz
34	1008 Hz
35	1200 Hz
36	1488 Hz
37	1952 Hz
38	2816 Hz
39	4512 Hz
40	4944 Hz
41	5000 Hz

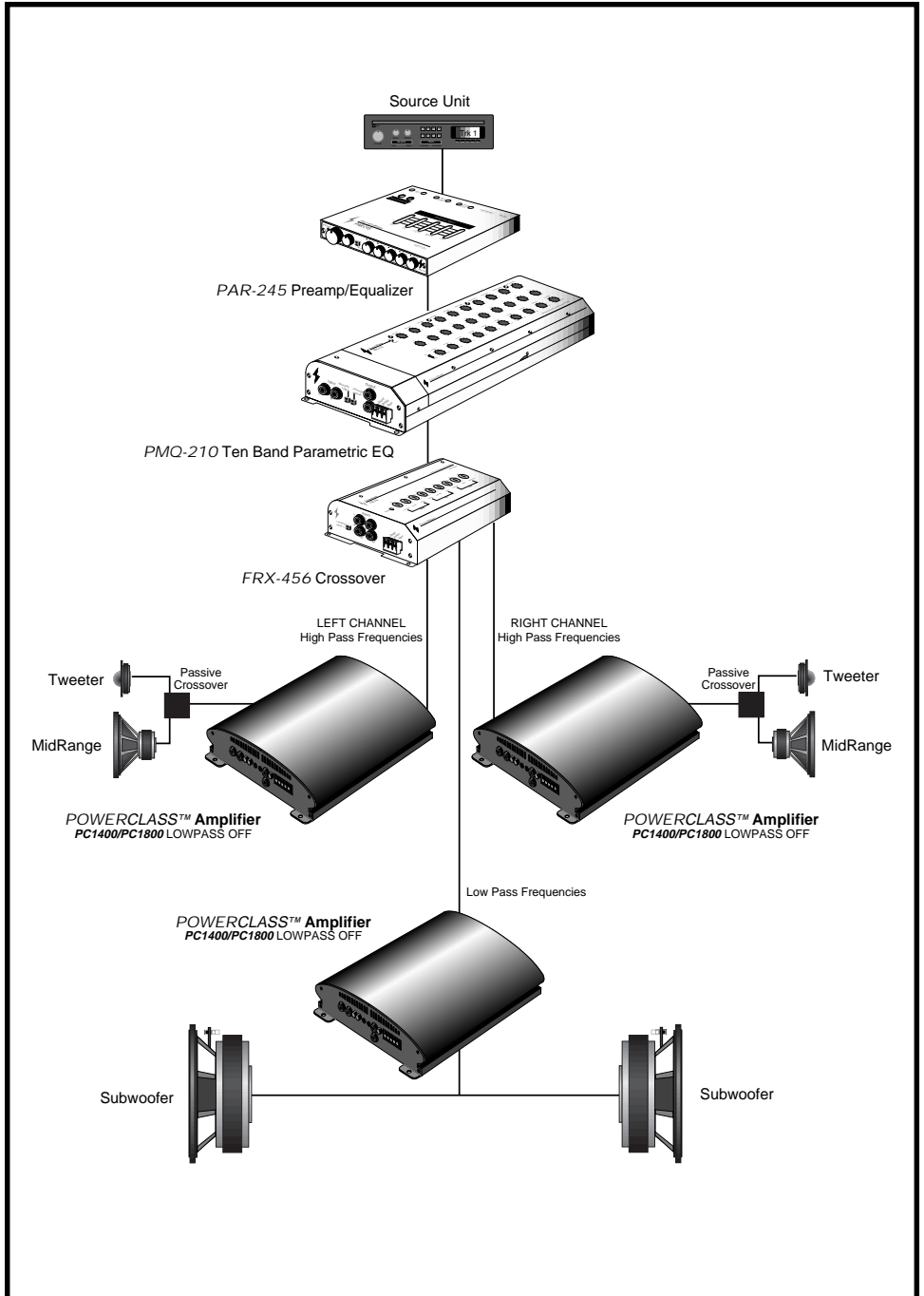
# SYSTEM DIAGRAM

## ONE



# SYSTEM DIAGRAM

## TWO



# TROUBLE SHOOTING

## NO SOUND

Is the LED lit?

YES



**PC 1800 ONLY**  
**WHAT COLOR ?**

**RED**

Central Muting is engaged. Remote turn-on wire must have more than 8 volts to release central muting. Check Remote turn-on at the head unit. You may need to install a relay if the head unit doesn't put out sufficient voltage.

NO

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

**GREEN**

Substitute RCA inputs with another source, and connect a known good speaker to the output.

**STILL NO SOUND** - See your Authorized *PrecisionPower* Dealer or Call:  
**1-800-62POWER**

## AMPLIFIER PROTECTION

### PC-1400

Both excessive temperature and low impedance (or short circuit) conditions will activate the amplifier's AP-III protection circuitry, which turns off the amplifier's output.

### PC-1800

Both excessive temperature and low impedance (or short circuit) conditions will activate the amplifier's AM-IV protection circuitry turns down the amplifier's output.

When the amplifier cools down, or the impedance is corrected, both protection circuits will restore full power. If your amp is turning off/down check your speakers and wiring for low impedance and short circuits. Also, ensure that there is nothing blocking the normal convective airflow of the amplifier. No obstruction should be within 2" of the amplifier on all sides.

**NOTE:** Low battery voltage will cause the amplifier to run warmer.

# 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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