

A N T H E M

ANTHEM PRE 1P OPERATING MANUAL

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DESIGNED AND MANUFACTURED BY SONIC FRONTIERS INCORPORATED





WHAT'S IN THE BOX?

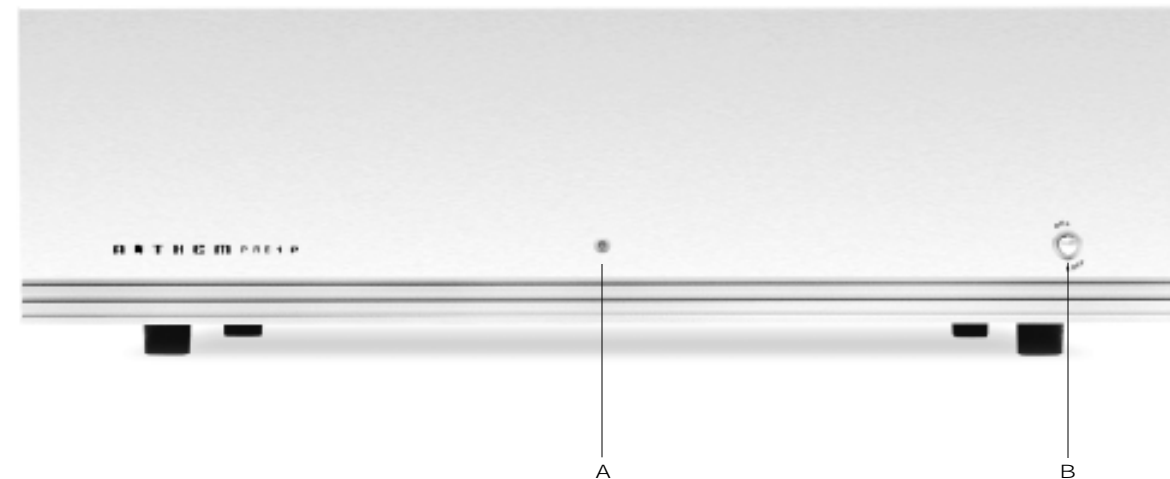
In addition to the Pre 1P, its covers, and the operating manual you are presently reading (with associated inserts and warranty card), there are a few more items to take inventory of before steps are taken to make the Anthem Pre 1P operational.

These items are:

- one each selected pair of 6922/6DJ8 and 12AT7/ECC81 tubes totaling 4*.
- a glove for handling the tubes
- a detachable AC power cord
- 18 screws
- 1 Philips #1 screwdriver

After completing an inventory of these items, proceed to the next steps.

*These tubes are carefully measured and matched in pairs. Take extra care to keep the pairs from being mixed and mismatched which would degrade performance.



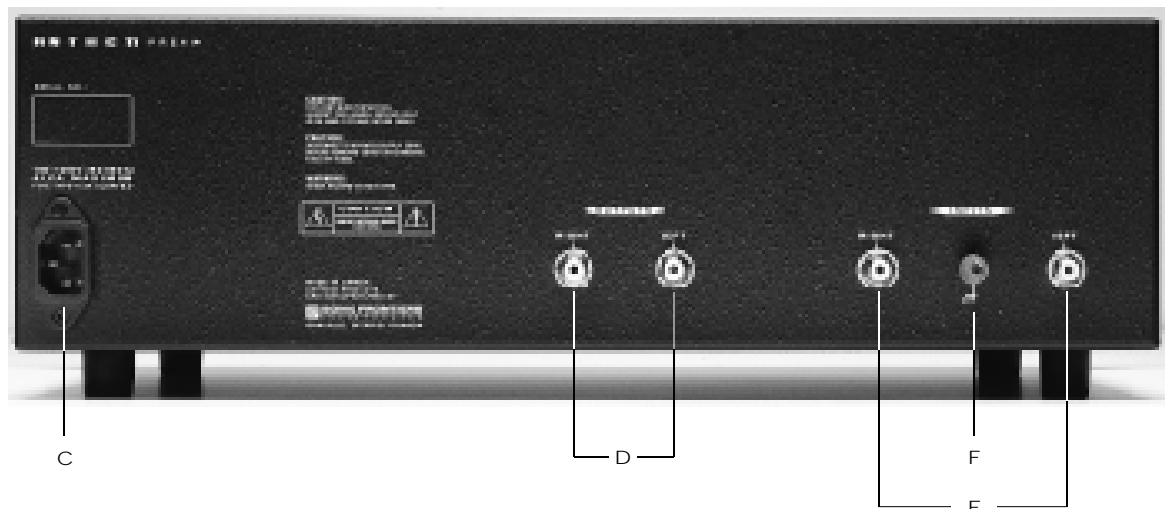
CONTROL FUNCTIONS

A PREAMPLIFIER LED

This Light Emitting Diode illuminates when power is applied and the Pre 1P is turned on via the ON-OFF Button (B)

B ON-OFF BUTTON

When in the ON position (button depressed), all power supplies within the preamplifier are initiated. A delay of approximately 45 seconds is required for the power supplies to stabilize. After the 45 second delay, the muting relay will engage, and the phono stage is operational. When in the OFF position (not depressed), the Pre 1P is OFF.



C DETACHABLE IEC AC POWER CORD SOCKET
 Plug the Detachable Power Cord into this socket (see Figure 4). The Pre 1P is factory set for the correct operating voltage for the area in which it is sold (see shipping box for voltage setting). If a different operating voltage is required, please contact an authorized Sonic Frontiers or Anthem dealer, distributor or the factory directly.

D OUTPUTS
 These outputs connect to the unbalanced line level inputs of other units such as preamplifiers, integrated amplifiers or receivers; connect left channel to left channel and right channel to right channel.

E INPUTS
 The low level left and right channel outputs from your turntable connect to the corresponding left and right RCA jacks.

F GROUND POST
 Connect the grounding wire of your turntable to this grounding post.



WARNING- DISCONNECT THE AC DETACHABLE POWER CORD FROM THE Pre 1P AND WAIT 5 MINUTES BEFORE REMOVING COVER, TUBES OR FUSE.

SETTING UP

The Pre 1P comes with four tubes, as follows:

2-6922/6DJ8 (V1, V3) AND 2 12AT7/ECC81(V2, V4)
 These tubes were chosen for their reliability and extremely low noise. The amplifier topology used in the Pre 1P delivers exceptional performance using the factory selected low noise tubes, heightening dynamics and providing a natural tonal balance.

INSERTION OF THE TUBES

1. Using the screwdriver supplied, remove the cover of the Pre 1P. For your convenience, only four of the screws are installed at the factory.

2. When handling the tubes, it is recommended that the cotton gloves provided be worn to prevent skin oils from depositing on the glass surface.

3. Noting the location of the tube sockets in the top view photo (Figure 2) or directly on the Printed Circuit Board, inspect the tubes for corresponding labels and markings. Once locations are mapped, take a tube and inspect the pins, noting the larger space between two of the pins (see Figure 1). This space will match with the socket. Insert each tube into the appropriate tube socket, making sure all pins and pin holes are aligned. Do not force the tubes into the sockets. "Rock" the tubes gently while pushing slowly until each tube is firmly seated.

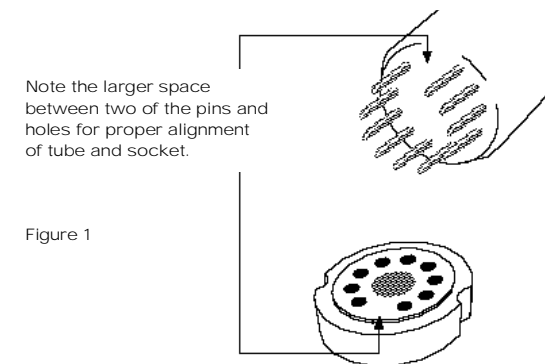


Figure 1

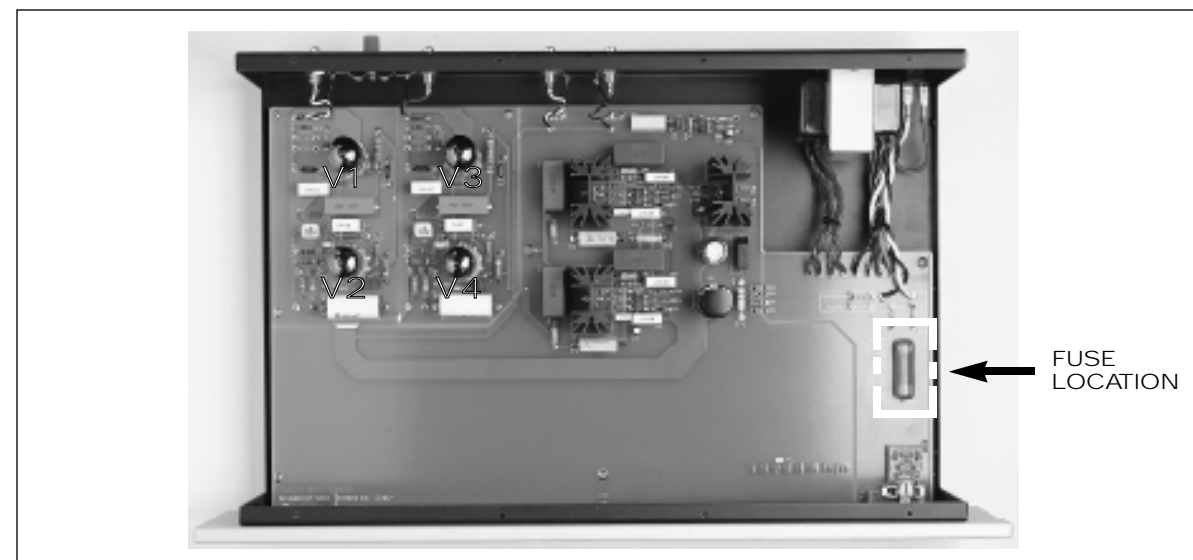


Figure 2 - Tube and Fuse Location

After the insertion of the tubes, replace the cover and fasten it with the screws provided. The Pre 1P is now ready for operation. For further information on tube replacement, contact your dealer, a Sonic Frontiers Customer Service Representative or The Parts Connection, a division of Sonic Frontiers.

OPERATION

Before plugging in the Pre 1P, check to see that the unit is configured for the correct AC line voltage for country of use. The operating AC line voltage is indicated on the side of the shipping box. If the Pre 1P is set incorrectly for the country in which it is to be operated, contact the dealer or distributor in your area. If the unit is configured properly, continue with operation.

Connect the Detachable Power Cord to the Pre 1P chassis rear (see Figure 3). Plug your Pre 1P into the AC power source.

Note: Never unplug your Pre 1P during operation. First shut off your Pre/Power Amplifier, then remove AC power by pressing and releasing Power Switch (B).

All connections to external equipment are made with unbalanced audio interconnect, terminated with RCA plugs. Connect the turntable to the Inputs of the Pre 1P (E); left channel to left channel and right channel to right channel.

The Pre 1P's outputs connect to the unbalanced line level inputs of other units such as preamplifiers, integrated amplifiers or receivers; connect left channel to left channel and right channel to right channel.

The Pre 1P is now ready for turn-on. Power the Pre 1P by placing the On-Off button (B) in the ON position. The Power Indicator LED (A) will illuminate. During this time, the Main Outputs are muted while the tubes are warming up and stabilizing. After 45 seconds warmup, the muting relay will engage, enabling operation.

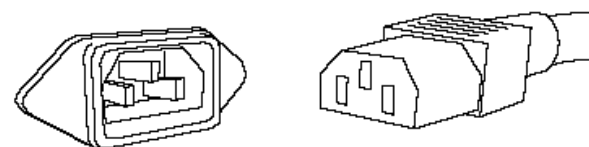


Figure 3 - Alignment of the AC power connector and detachable cord.

OPTIONAL PHONO CARTRIDGE LOADING

Most phono cartridges are designed with a particular electrical load in mind to yield a smooth, overall flat frequency response.

If the cartridge is incorrectly terminated into its intended load, frequency response errors of up to +/- 5 dB or more may arise, causing a clearly audible effect.

This potential interface problem can be averted only by proper termination of the cartridge into its intended load. The optimum load must be supplied by the combination of tone arm wiring, interconnect cabling and input resistance and capacitance of the phono stage.

Most cartridge manufacturers provide the recommended load values for their products on the data sheet included with the cartridge or should be contacted directly for this information. Likewise, tone arm and interconnect cable manufacturers supply similar information.

The Pre 1P provides convenient solder pads designated Cload1 and Cload2 and Rload1 and Rload2 on the main printed circuit board facilitating installation of appropriate resistors and capacitors, thus enabling the user to tailor the phono stage's input loading characteristic to match the cartridge. These additional components may be installed by anyone with reasonable soldering skills, your dealer or a qualified audio repair technician.

The required values for these added components may be computed as in the following example:

A typical Moving Magnet phono cartridge requires a load resistance of 33,000 Ohms and a load capacitance of 470pF (Pico Farads) for optimum performance.

A typical tone arm and its interconnect wiring have a specified combined capacitance of 100pF. The wiring resistance is usually so very small it may be ignored as its effect is negligible.

The Anthem Pre 1P's input load capacitance is specified as 100pF in parallel with 47,000 Ohms of resistance for each channel.

To calculate the additional capacitance required on each channel, we add the 100pF value of the tone arm / interconnect capacitance to the 100pF value of the Pre 1P's input capacitance, then, subtract the sum from the required 470pF optimum cartridge load value, giving 270pF as the value of capacitor to be installed for Cload1 and Cload2.

$$\begin{aligned} \text{Cload} &= 470\text{pF} - (100\text{pF} + 100\text{pF}) \\ \therefore \text{Cload} &= 270\text{pF} \end{aligned}$$

Suitable capacitor types for Cload include 5% tolerance or better, polystyrene or polypropylene dielectric types, of the closest standard value, 63 volts or higher.

To calculate additional resistance values required to be added to each channel, the reciprocal value of the 47,000 Ohm phono stage load resistance is subtracted from the reciprocal value of the 33,000 Ohm desired load resistance. Then take the reciprocal of the difference value giving 110,785 Ohms as the resistor value for Rload1 and Rload2.

$$\text{Rload} = \frac{1}{\frac{1}{33000} - \frac{1}{47000}}$$

$$\therefore \text{Rload} = 110785$$

The Rload resistors should be selected as the nearest value 1/4 Watt 1% metal film types. For the above example the closest 1% standard value from the E96 range would be 110,000 Ohms or 110k.

BREAK-IN TIME

As with all audio electronic products, the ultimate sonic character of the Pre 1P will not be realized until and unless the unit receives a minimum of approximately 70 hours of signal break-in time (i.e. the Pre 1P is on and producing an output signal).

PLACEMENT FOR PROPER VENTILATION

Allow at least 4" (15 cm) of clear space above the Pre 1P chassis for proper ventilation, making sure the air vent slots in the chassis cover remain unobstructed. Also, be sure that the Pre 1P is placed on a secure, hard and level surface (not on carpet).

SAFETY INSTRUCTIONS

1. Ventilation - Although your Pre 1P generates only nominal heat in use, be sure that the ventilation slots in the top cover have at least 4" of unobstructed air space above them.
2. Water and Moisture - This product should not be used near water. To prevent fire or shock hazard, do not expose this product to rain or moisture.
3. Heat - This product should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances which produce heat.
4. Power Sources - This product must be connected to an AC power source of the proper rated voltage. The original shipping container will stipulate the AC voltage this unit can operate with correctly.
5. Cleaning - A regular dusting with a soft, non-abrasive cloth will generally keep the finish of the faceplate and chassis looking like new. At no time should you allow any liquid to come in contact with the Pre 1P; it may run into the electronic circuitry and cause damage which will not be covered under your warranty.
6. Servicing - Do not open this product. No user serviceable parts inside. Refer servicing to an authorized service technician.
7. Non-Use Periods - The power cord of this product should be unplugged from the outlet when left unused for an extended period of time.
8. Do not remove the Pre 1P covers while the unit is "on", or connected to an AC power source. Cover screws could fall through the ventilation slots and cause electrical damage to the Pre 1P.

PACKING MATERIALS

Please retain all of the packing material and shipping boxes for your Pre 1P. They are custom designed to prevent shipping damage from occurring. Sonic Frontiers, Inc. will accept no responsibility for any damage occurring to a Pre 1P that is shipped in packing material other than the original Sonic Frontiers packing material.

DISCLAIMER OF LIABILITY

Under no circumstances does Sonic Frontiers, Inc. assume liability or responsibility for injury or damages sustained in the use or operation of this equipment or for damages to any other equipment connected to it. Sonic Frontiers, Inc. reserves the right to make design changes or improvements without the obligation to revise prior versions. All specifications are subject to change without notice.

TROUBLESHOOTING

If at any time the Pre 1P fails to work properly, consult this checklist:

1. Check that the AC Detachable Power Cord is plugged into the Pre 1P Detachable Power Cord Socket (C) and is connected to a live source of AC power. For instance, if using a power bar, check that the bar is turned on.

2. Ensure that all Input and Output connections are secure for proper electrical contact.

3. DISCONNECT THE AC POWER CORD, wait 5 minutes, remove the chassis covers from the Pre 1P and check that:

- A "slow-blo" fuse, with a rating of 0.5 Amp/250 V (0.25 Amp/250 V for European and Asian versions), is installed on the circuit board under the soft plastic cover (see figure 5).
- The AC power fuse is intact and has not blown. If the fuse has blown, the thin metal conductor will have melted and the glass may appear "smoked". If the fuse has blown, replace with a fuse of the same rating (0.5 Amp/250V fast-blo for 100 to 120 volt countries and .25 Amp/250V fast-blo for 220 to 240 volt countries). (See Figure 4)

NOTE: Under no circumstances should you replace the AC power fuse with one of a higher current rating! Doing so may cause damage to the Pre 1P and will also void the warranty. In addition, your continued protection from risk of fire or shock would be seriously compromised.

- Ensure the tubes are plugged firmly into their sockets as described in "INSERTION OF THE TUBES".

4. Be sure the rest of the system is functioning properly (i.e. source unit, power amplifiers, cables and connections, etc.).

5. With tubes, fuses, covers and power cords in place, check that the LED (A) is lit. If all of the above troubleshooting steps have been followed and the LED is not lit, contact your dealer or distributor for assistance.

6. Ensure you have inserted the correct tube type (12AT7 or 6922) into the correct socket.

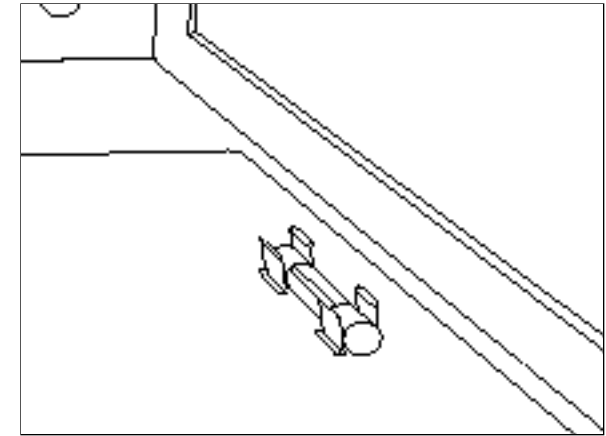


Figure 4 - Fuse location.



WARNING-DISCONNECT THE AC DETACHABLE POWER CORD FROM THE Pre 1P AND WAIT 5 MINUTES BEFORE REMOVING COVER, TUBES OR FUSE.

LIMITED FIVE YEAR WARRANTY

Sonic Frontiers, Inc. warrants to the purchaser that each Pre 1P is free of manufacturing defects for a period of five (5) years from the date of purchase. This five (5) year limited non-transferable warranty excludes all vacuum tubes, which we warrant for a period of twelve (12) months. To receive this warranty, the original purchaser must complete and mail to Sonic Frontiers, within thirty (30) days from the date of purchase, the enclosed Warranty Registration Card. Sonic Frontiers, Inc. will then validate the warranty to the original purchaser. This warranty is subject to the following conditions and limitations:

1. Warranty applies only to the original purchaser.

2. This warranty is void and inapplicable if the product has been handled other than in accordance with the instructions in this Owner's Manual, abused or misused, damaged by accident or neglect or in being transported, or the defect is due to the product being tampered with, modified or repaired by anyone other than Sonic Frontiers, Inc. or an authorized Sonic Frontiers repair depot.

3. Warranty does not cover normal maintenance.

4. Sonic Frontiers, Inc. shall not be responsible in any way for consequential or indirect damages or liabilities resulting from the use and operation of the product covered herein or resulting from any breach of this warranty or any implied warranty relating to said product.

During this period, Sonic Frontiers, Inc. will repair or replace any defective components free of charge. A Return Authorization Number (RA Number) is required before any product is returned to our factory for any reason. This number must be visible on the exterior of the shipping container(s) for Sonic Frontiers to accept the return.

Units shipped to us without a Return Authorization Number or without a visible RA Number on the exterior of the shipping container(s) will be returned to the sender, freight collect.

Units to be repaired by Sonic Frontiers, Inc. must be sent shipping and insurance prepaid by the original purchaser in the original packing material. A returned product should be accompanied by a written description of the defect. Repaired units will be returned by Sonic Frontiers, Inc. shipping and insurance prepaid.

All other warranties or conditions either written or implied are void.

Note: In foreign markets (anywhere outside of Canada and the USA), the warranty is supplied by the authorized International Distributor. Exact terms and conditions may vary.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

TECHNICAL SPECIFICATIONS

(AC line set at 117V 60Hz)

FREQUENCY RESPONSE	Phono Input: ± 0.5 dB of RIAA 20Hz to 20kHz
HARMONIC DISTORTION	$\leq 0.25\%$ @ 0.5V RMS out
I.M. DISTORTION (SMPTE)	Line output $< 0.1\%$ at 1V $\leq 0.25\%$ (SMPTE 4:1)
GAIN	RMS: 48dB @ 1kHz (250x)
INPUT IMPEDANCE	47K / 100pF
OUTPUT IMPEDANCE	520 ohms. Recommended load 50K-100K /100pF (20k/100pF max.)
RATED OUTPUT	0.5V RMS out with 2mV input @1kHz with 50k/100pf load
CHANNEL SEPARATION	≥ 50 dB 20Hz - 20kHz
PHASE POLARITY	Non-inverting
NOISE	-72dB IHF "A" Weighted Ref, 0.5V RMS Out, Shorted Input
TUBE COMPLEMENT	Tube Audio Circuit: 2 6922/E88CC, 2-12AT7/ECC81
POWER REQUIREMENTS	120VAC 50/60Hz (Export 100/220/240VAC 50/60Hz) 36 VA maximum
DIMENSIONS	19" Wide x 11" Deep x 5.25" High (48 cm x 28 cm x 13 cm)
NET WEIGHT	17.5 lbs (8 kg) - unpacked