

Thank you for selecting the PFR as the control center for your audio system. We believe that you will experience, as we did, the excitement of discovery in hearing more from your favorite recordings than ever before. The PFR draws on two decades of research at conrad-johnson into the reproduction of recorded music. The result is a line-stage preamplifier that sets a new standard for the recreation of the dynamics, textures, tonalities, and ambience of live musical performances.

At conrad-johnson, we expect our products to be a source of satisfaction and of pride to their owners for many years to come. Accordingly, circuit designs, parts and materials have been selected with a view to maintaining optimal performance over the years. Our reputation for producing among the industry's most reliable components is a natural consequence of this engineering approach.

Although the PFR has been designed to operate in an intuitively apparent way, you will find useful information on installation and on operation in this manual. Please take a few minutes to read the manual to better understand the features and capabilities of your PFR. *Note that this unit is phase inverting.* See the section entitled "Getting the most from your PFR" for details on correct hookup in your system.

In closing, we'd like to welcome you to the family of conrad-johnson owners. We want you to enjoy your conrad-johnson product to the fullest. To this end, our staff stands ready to answer any questions you may have about the function and application of your PFR, and to provide any needed service both during, and after the warranty period. Our goal is to heighten your enjoyment of recorded music.

Limited Warranty For Conrad-Johnson Components

conrad-johnson design, inc. will provide service under warranty to the original owner on products sold new in the United States for the lesser period of three years from the date of purchase by the original purchaser, or five years from the date of shipment to the authorized conrad-johnson dealer. During the warranty period, conrad-johnson will repair defective units without charge for labor or parts (with the exception of vacuum tubes and batteries).

Exclusions. The following are not covered under this warranty:

- a) Units which have been damaged by misuse, abuse, or accident.
- b) Units which have been modified, altered, or improperly repaired by anyone not specifically authorized by conrad-johnson design, inc.
- c) Units not purchased from an authorized conrad-johnson dealer in the United States for use in the United States.
- d) Normal wear.
- e) Incidental or consequential damages are not covered under this warranty. Some states do not allow the exclusion of incidental or consequential damages, so this exclusion may not apply to you.

Obtaining Warranty Service: To obtain warranty service, the unit must be shipped, along with evidence of purchase, in factory packing to conrad-johnson design (or designated service center) with freight and insurance prepaid by the owner. After repair, the unit will be returned with freight and insurance prepaid by conrad-johnson design to any destination in the United States.

All implied warranties, including merchantability and fitness for a particular purpose are limited in duration to the duration of this express warranty. Some states do not allow limitations on the duration of implied warranties so the above limitations may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Conrad-Johnson products purchased outside the United States are covered by warranty terms of the importing distributor in the country in which the product was originally purchased, which may differ from the terms set out herein. Importing distributors are not obligated to provide warranty service for products originally purchased outside their country. Conrad-Johnson will provide warranty service for products outside the

United States, but the customer must pay all shipping, handling and customs costs both to and from our Service Department.

Questions about this warranty should be addressed to:

Service Department
conrad-johnson design, inc.
2733 Merrilee Drive
Fairfax, VA 22031

The Service Department can also be reached by phone at 703-698-8581, or by fax at 703-560-5360

Service

If your conrad-johnson audio component requires service, repack it using the original box and packing material and ship to the Service Department address above. Boxes and packing materials can be obtained from our service department for a nominal charge, if you no longer have yours. Include with the unit a note describing the problem you are having in as much detail as possible. It is especially important for our technician to know if the problem is intermittent. If you want an estimate of cost for out of warranty service, be sure to request it in this note. Be aware that requesting an estimate will delay service to your unit as we will have to contact you for your approval before commencing service.

Registering The Warranty

Please return the enclosed card to the factory within 30 days of purchase to register the warranty.

***I*nstallation**

Because the PFR dissipates very little heat, ventilation is not an important consideration, allowing greater flexibility for custom or built-in installations. Of course, reasonable judgement must be exercised to see that the PFR does not obstruct ventilation required by amplifiers or other equipment in the system. In custom installations, the unit may be mounted either horizontally or vertically.

All PFRs sold in the United States are configured for operation on a 60Hz ac power line producing between 108 and 126 volts. Export versions of the PFR will have the correct operating voltage and frequency clearly marked on the back panel of the unit, near the ac power cord. In all cases, the actual line voltage should be within + 5/- 10% of the nominal rated voltage.

Electromagnetic Interference (EMI)

Considerable care has been taken in the design of the PFR to minimize its susceptibility to radio frequency interference and other forms of EMI. Choice of materials, physical layout, grounding practice, and power supply design have all been specified with a view to reducing the impact of electromagnetic fields on the performance of this unit. At the same time, however, our primary goal is the accurate reproduction of recorded music in the normal home environment, and we have elected not to compromise this objective by the application of heavy-handed RFI filters, or by using grounding practices that reduce RFI at the expense of degraded audio performance. We find that the approach we have taken has worked extremely well, resulting in only rare instances of EMI problems which could be treated locally as needed, rather than compromising the performance of our product in the 99.9% of installations where EMI is not a problem.

Care in installation can often avoid EMI induced problems. The following practices should generally be observed in any application, and will be especially important where EMI may be a problem.

Interconnect cables should be kept as short as possible (3 meters or less), and shielded cable should be used (cable which has two center conductors, and a separate external shield connected at only one end).

Physical location and cable "dress" can be an important factor in minimizing hum pickup. The installation should situate the preamplifier well away from the power amplifier, and power (ac mains) cords should be dressed to remain at least 4" (100mm) away from input/output cables.

Connection

SOURCES (AUX1/PH, TUNER, CD, VIDEO, AUX2): These inputs are electrically equivalent. The load presented to the source varies with the volume control setting, but in no case will it drop below 50 kohms. Connect the corresponding source components to these inputs.

EXTERNAL PROCESSOR LOOPS (EPL1, EPL2): Two sets of line-level inputs and outputs are provided for the connection of external signal processors (eg. surround sound processor, parametric equalizer, tone controls). These can also be used for the connection of tape recorders. In this case, connect the EPL OUT to the recording input of your tape recorder, and the EPL IN to the output of your tape recorder. The EPL IN connections can also be used as two additional line level inputs.

OUTPUT: Connect to the input of your amplifier (or crossover in a bi-amplified system). We recommend the use of an amplifier with an input impedance of 20k ohms or higher. Since the PFR inverts phase, it may be necessary to invert the speaker leads to maintain correct absolute phase. See the section on "Getting the most out of your PFR" for an explanation.

Controls

When first connected to ac mains, or after an interruption of power, the PFR will turn on, after auto-muting, in a default mode with the level control set at the full counter-clockwise position, in mute, and with the CD input selected.

A time delay auto-muting circuit is incorporated into the PFR to eliminate transients generated at power-on and power-off. All outputs are grounded via relays for approximately 30 seconds after the unit is turned on in order to suppress warm-up transient noises. During this auto-muting period, the red mute indicator led will flash. All control functions are disabled during the auto-muting cycle.

MUTE: Pressing the *mute* button will silence the preamplifier's main outputs, and light the led labeled mute. Pressing the *mute* button again will restore normal operation.

LEVEL: The PFR's precision *level* control is continuously variable, for full control of listening levels.

BALANCE: The *balance L* and *R* buttons adjust the channel balance in five steps of .75 dB per step. A channel imbalance outside this range of adjustment indicates an anomaly that should be corrected at the cause of the imbalance.

SOURCE SELECTORS (AUX1/PH, TUNER, CD, VIDEO, AUX2): Pressing any of these buttons will select the associated source, routing it to the EPL outputs, and to the line-stage if neither EPL is selected. The selected source will be indicated by an illuminated led.

EPL SELECTORS (EPL1, EPL2): Pressing either *ep* button will activate the selected external processor loop. When EPL1 or EPL2 are selected, the selected source will first pass through the external processor loop before being routed to the volume control.

Remote Control

All operations of the PFR can be controlled by the handheld wireless remote unit.

MUTE: Pressing the mute button will silence the main outputs. Pressing it again will restore normal operation.

SELECTORS (AUX1/PH, TUNER, CD, VIDEO, AUX2): You can directly access any of these inputs by pressing the associated button on the remote.

EPLS (EPL1, EPL2): Pressing the EPL buttons will insert the associated external processor in the signal path. Pressing the button again will re-establish a direct connection to the selected source.

VOLUME: Activates the motorized volume control.

BALANCE: Duplicates the function of the front panel balance buttons.

***G*etting The Most From Your PFR**

When connected to a system of high quality components, the Conrad-Johnson PFR offers an unparalleled level of sophistication and refinement in music reproduction. To get the best performance out of any audio system, there are a number of important details which must be attended to.

Absolute Phase

Musical notes are heard through the ear's response to waves of alternating rise and fall of air pressure. Musical transients are almost exclusively positive: that is, the initial effect is a rise in pressure. The ear is capable of distinguishing these positive transients from the musically unnatural alternative of a negative transient (an initial fall in air pressure). In terms of your stereo system, these transients are created by your loudspeakers. If the speakers respond to musical transients by first moving out, they are creating a rise in pressure, and the system is said to be "phase correct". If they respond by moving in, they create a fall in pressure and the system is said to be phase inverting. Each component in the stereo system either preserves the phase of the incoming signal, and is said to be phase correct or inverts the phase and is said to be phase inverting. It is unimportant whether an individual component is phase correct or phase inverting, as long as the system as a whole is phase correct. This will be the case if the number of phase inversions is even (or zero).

The PFR is phase inverting. If your system has an odd number of inversions, (for example, if the PFR is the only phase inverting unit in the chain) then you must add one phase inversion. This is conveniently done by reversing the positive and negative connections to your speakers (be sure to reverse both channels).

If you are not sure about the phase of every piece in your system, you can establish correct absolute phase by careful listening. When the system is in correct phase, transients will be noticeably cleaner and more sharply defined. The effect is especially apparent on plucked string sounds. A final warning - not all recordings are phase correct (including some "audiophile" recordings), so listen to several before concluding your investigation of absolute phase.

The Importance Of Wires

Interconnect and speaker wires are an important element in your stereo system. Interconnects are available which will permit a reference quality system to blossom and fulfill its promise of musical reality. Others will strangle the system to the point where it becomes little better than average. To complicate matters, it is our experience that the choice of interconnects will be system dependent - those that are top ranked on one system may be a poor choice for a different system. Consult your conrad-johnson dealer for recommendations for your specific system.

Warming Up

The sonic performance of the PFR improves noticeably as the unit warms up. The midrange becomes more lucid, the highs smoother, and the soundstage expands. The warm up period can be expected to last for several days, so make allowances when you first listen to your PFR.

Questions: If you have questions about the installation or function of your PFR do not hesitate to call Customer Service at (703) 698-8581.

Specifications

Gain: 16dB
Maximum Output: 10V
Bandpass: 2Hz to 75kHz
Hum and noise: 94dB below 2.5V output
Distortion at 1.0 v output: less than .1% THD or IMD
Phase: inverts phase of all inputs at main out
Output impedance: less than 200 ohms

Mechanical:

Dimensions: 14.375"D x 19"W x 3.315"H
Net Weight: 16 lbs.

Fuses

The PFR has two fuses on the ac power line to protect its transformers. Failure of either fuse is a symptom of a more serious problem, and a competent service technician should be consulted.

In no event should these fuses be replaced with a value or type different than that originally supplied. The correct fuse values for both fuses are:

If configured for 100 or 120V operation: 1/4 amp, fast blow
If configured for 220 or 240V operation: 1/8 amp, fast blow