O W N E R ' S M A N U A L

PARASOUND

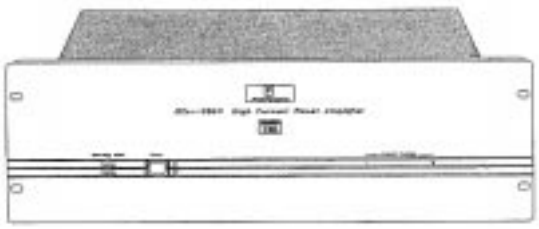
HCA-1200II High Current Power Amplifier

Congratulations on your purchase of this precision audio component and thank you for your selection of Parasound. Your HCA-1200II is designed by John Curl, one of the world's most renowned circuit designers. It is among the elite of the finest power amplifiers ever made. You have made an outstanding investment in your musical and home theater pleasure for years to come.

Every part, every direct-coupled circuit, has been painstakingly selected for optimum musical quality on the finest and most challenging music and loudspeaker loads. Take a look at the special features found near the end of this manual to fully appreciate its considerable prowess.

THX Certification assures you of total compatibility with Lucasfilm THX® Home Cinema standards. Convenient switching permits two operating modes: as a two channel stereo amplifier or a single channel monoblock amplifier.

The HCA1200II has greater operational flexibility and power than most other power amplifiers you may have encountered, so please take a few moment to read these instructions thoroughly so you may fully understand the sophisticated capabilities of your new Parasound power amplifier.



Unpacking

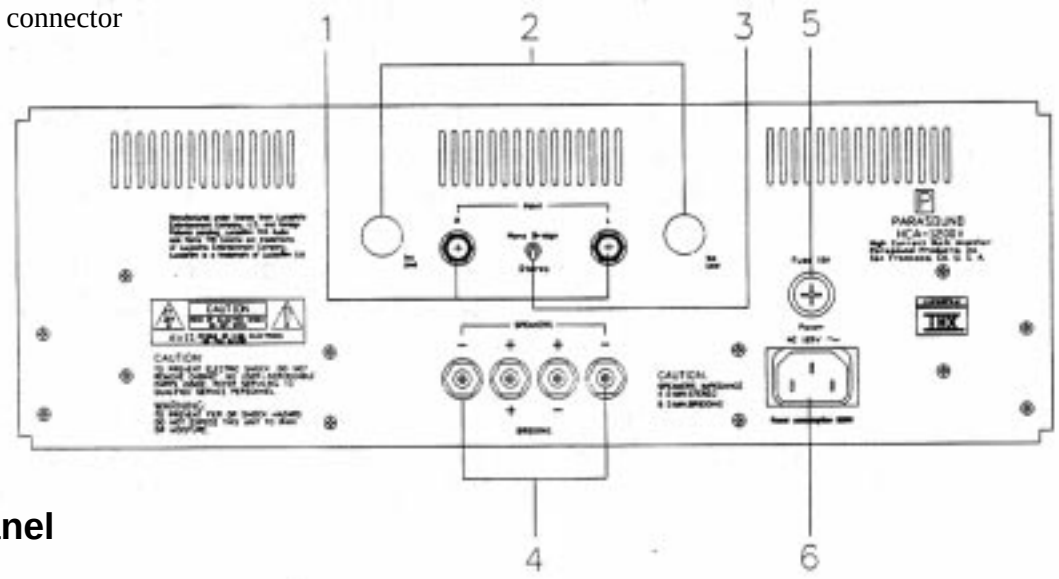
Your HCA-1200II packed in two strong cardboard cartons. *Save your cartons and the styrofoam inserts for future safe transport* in case you move or your unit ever requires shipping for repair. Note, the inner white printed carton is not itself strong enough for safe shipping, so you absolutely must place it into the additional brown outer "overcarton" before shipment.

The AC cord is packed separately in the carton. This is a specially selected audiophile grade cord and is the only cord we recommend for use with your HCA-1200II. Please don't lose it.

Before you proceed, find the serial number which is located on the rear panel of your unit and record it here for future reference or in case of casualty loss or theft:_____.

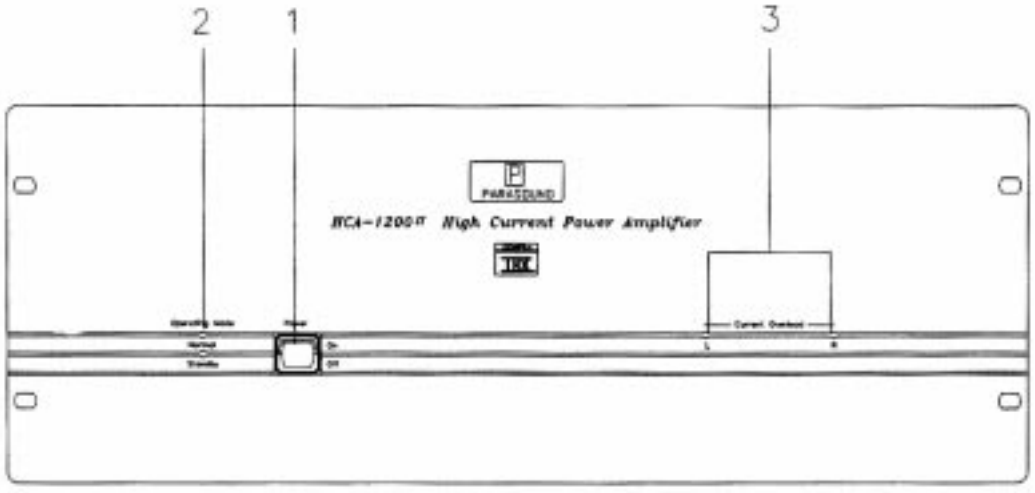
Rear Panel

1. Input jacks
2. Input level controls
3. Mono bridge mode selector switch
4. Channels 1, 2 4 Ω - 8 Ω speaker terminals
5. Main Fuse
6. AC cord connector



Front Panel

1. Power Switch
2. Standby-Operation LEDs
3. Current Overload LEDs



Placement of your HCA-1200II

Keep your Parasound HCA -1200II out of direct sunlight and away from windows which could ever be left open to let in rain. It should be placed away from heat sources such as hot air ducts or radiators. Make sure your cabinet or shelf can support its substantial weight!

Always place your unit horizontally. Do not place your unit directly on a carpet whose pile could interfere with air flow into its bottom vent openings. If you place your HCA-1200II on the floor near your speakers, put its feet on a piece of wood to elevate it above the pile of the carpet. If you stack your components, it's better to place your HCA-1200ll alongside your other components.

Your HCA-1200II operates with high idling, or bias, current to reduce higher-order harmonic distortions. This results in noticeably warm operation which could disturb components stacked on top of it. If is inside a cabinet, allow ample ventilation. You may require a small external fan to ensure adequate ventilation within a cabinet. Very sensitive low-level sources placed too close to your HCA-1200II might pick up some hum radiated from its enormous power supply.

Rack Mounting your HCA-1200II

Your HCA-1200II can be mounted in a space slightly higher than a 3 unit 19" rack. Make sure you select heavy duty mounting bolts and nuts and use washers under the heads of the bolts to avoid scratching your amplifier's anodized front panel. It's safest if you don't attempt to hold your unit in place yourself while you attach the bolts and nuts. Have a strong helper support the unit while you attach it to the rack.

The heat generated by your HCA-1200II may require an external fan to assist air flow if you have another component mounted directly above it in the rack.

Making Connections

•*Before making any signal or speaker connections, make sure your power amplifier is turned off.*

When making connections, make sure there is no strain or tension on input leads or speaker wires that could cause them to pull loose later on. You have several input connection options, so please take care and do not rush.

Input connections

Use the right and left channel RCA jacks for stereo operation.

For mono operation, use only the right channel input jack and leave the left channel jack disconnected.

Speaker connections - General recommendations

You may use bare solid or standard wire up to AWG12, certain spade lugs, banana or 3/4" (l9mm) dual-banana plugs with the HCA- 1200II speaker terminals. lf you use bare wire without plugs, make sure you strip off only enough insulation so the bared wire fits through the hole that runs sideways through the terminal's metal shaft. *Before inserting the wire, twist all its strands tightly to prevent strays that could cause a short circuit between + and - terminals.*

•*Note*

The speaker terminal shafts may be slightly too thick to accomodate standard 1/4" spade lugs. If you prefer to use spade lugs instead of banana plugs, you can insert one half of each "spade" into the hole across each terminal shaft. But if you do this, make sure you don't permit the lug to rotate as the terminal is tightened down. It can easily cause the terminal shaft to shear off, as it is relatively weak in this one area due to the large diameter of the opening for accomodating heavier gauge wires. We recommmd banana plugs for convenience. The HCA-1200II Limited Warranty does not cover terminals which have been sheared after twisting by spade lugs.

Polarity

It is important to observe correct polarity. One side of the speaker wire will have some sort of mark: either printing, a raised ridge on the insulation or a different color of conductor. This permits you to know which wire you had connected to the + and which to the - speaker terminals so you can do exactly the same at the power amplifier terminals. Polarity is marked separately for both stereo and bridged connections.

Mono Speaker Connection

When you bridge the left and right channels, you connect your speakers to the combined bridged channels differently. You bridge by using only the two red + terminals. Also will note the red + terminals have alternate markings for bridging. The right channel's red terminal becomes -, and the left channel's red terminal becomes +.

Unbridged stereo speaker connections can be made with two standard 3/4" (19mm) "dual banana" plugs. You may also use a single standard 3/4" (19mm) "dual banana" plug for the mono bridge connection to the two inner red + terminals.

Mono Bridge Switch

Simply select Mono (up) or Stereo (down) as marked on the rear panel. We recommend that the power is switched off before moving this switch. If you accidentally leave the Mono Bridge switch in the Mono (up) position, you will find stereo output will be very weak and distorted. Tum the unit off before switching back to Stereo (down).

•*Safe Operation Note*

You may use 4 Ω - 8 Ω rated speakers for stereo operation. Lower impedance loads are not recommonded, as they may cause overheating and trigger one of the many protection circuits.

You may use only 4 Ω rated speakers for mono bridged operation only if you don't intend to run your HCA-1200II at high levels for extended periods.

This 8 Ω restriction results from the mathematics of the bridging circuitry. In the bridge mode each channel of the amplifier functions for only the + or - half of the musical waveform. Thus, each channel "sees " only half of the speaker's impedance. Use of an 8Ω speaker means that the load for each channel is 4 Ω. And for a 4 Ω speaker, it would result in only 2 Ω.

Dual "Half-Stereo" Operation

For a sonically superior high power alternative to mono bridging, you can enjoy the best possible sound by using a pair of HCA-1200IIs, and operating each unit on one channel rather than bridged mono. You will gain substantial reserve power, since only one channel is now drawing upon the enormous power supply.

While you will not obtain the full 625 watts at 8 Ω available in mono bridging, you can obtain approximately 250 watts at 8 Ω, or 450 watts at 4 Ω. The audio signal is not required to travel through the additional phase inverter circuits required for mono bridging, and the resulting clarity will more than compensate for the slightly lower available power.

Unlike mono bridged operation, with Dual Half-Stereo operation, you also have the option of using speaker loads of 4 Ω or less.

For Dual Half-Stereo, simply connect only one channel's input and output of each HCA-1200II. Leave the Mono Bridge switch in its Stereo (down) position. Leave the other channel of both amplifiers disconnected. It doesn't matter which stereo channel you use on each amplifier.

Use Good Speaker Wire

For best result you should never use speaker wire thinner than 16 gauge to avoid constricting the sound stage and deteriorating bass response. You may also wish to experiment with audiophile-grade speaker wire and interconnects. Each will have a different characteristic sound and some may be more compatible with the sonic signature of your various components.

Audiophile-grade AC line cord

Before you attach the AC cord, make sure the HCA-1200II power switch is in its off position.

The HCA-1200II includes an audiophile-grade detachable AC cord. We recommend that you use only this cord and try to make direct connection to the AC wall outlet. Connection to a flimsy extension cord will seriously impair the sound reproduction of the HCA-1200II. We do not recommend you connect the amplifier to the accessory AC outlet on your preamplifier. The current draw exceeds the ratings of most preamplifier's power switches and power cords and could cause premature failure of the switch, not to mention degradation of the sound.

If you use an external AC line conditioner/surge suppressor, make sure it can handle the full power required by the amplifier. lf you want the very best sound possible, you might consider having a licensed electrician run a dedicated AC power line for your HCA-1200II. This will isolate it from most of the power line interference caused by older wiring and household appliances.

• While 3 pin grounded AC cords are standard on most high end components, sometimes it becomes necessary to reverse the polarity of the AC plug to reduce hum. In this case, you may use a 3 pin -to- 2 pin AC plug adaptor, or cheater plug, which is readily available at low cost from any hardware store.

If you believe your system has a hum problem, the first step is to reverse the AC plugs of your other components, one by one, starting with the preamplifier. In many cases, this will eliminate the problem.

lf this fails, it may be necessary to reverse the direction of the HCA-1200II's AC plug. Please do not cut off its 3rd ground pin; you may need it again if you change components. The preferable way is to purchase the "cheater"" with only two pins which can insert in either way in the wall outlet. This will not compromise the sound quality of your system.

Operating your HCA-1200II

Power Switch

Press the upper side to turn the unit on; press the lower side to turn the unit off.

Standby/Operation LEDs

The red Standby LED will come on red whenever you first turn the unit on. It will light for about four to five seconds while the amplifier circuits are stabilizing before the protection relays start to energize. At this time the red LED will turn off and the green Operate LED will come on to signal normal operation is available. It will also light up red whenever there is a short circuit or fault which triggers the protection circuits. Whenever the red LED illuminates, no sound can be heard. lf the red Standby LED lights up during operation, it could indicate that more DC than its servos can handle is present at the input, an overload, a short circuited speaker line or possible internal fault. The protection circuits automatically reset. Turn the unit off for at least 10 minutes while you check your connections, then try again. lf the red LED continues to glow, you should contact your Dealer, Installer or Parasound Technical Service for further advice.

Current Overload LEDs

The Current Overload LEDs for left and right channels will only illuminate if the unit is driven at its maximum current capacity. These LEDs will indicate overload of the power supply just before the onset audible distortion. In virtually all imaginable listening situations, these LEDs will rarely illuminate.

Level Controls

Each channel has a separate input level control. When your HCA-1200II is used in a THX installation, each level control must be set at its maximum, which corresponds to THX reference Ievel.

The HCA- 1200II will sound best with its level controls set to maximum, or "THX Level," where they are effectively out of the audio signal path. However, if your preamplifier has very high gain, and its volume control cannot trace properly for left-right channel balance near its minimum position, it may be necessary to reduce the input level control settings on the HCA-1200II.

However, for correct THX operation, the controls must be at maximum.

We deliberately have located the level controls on the rear panel, so they can be set once and forgotten, out of the reach of curious children or guest.

Breaking-in your HCA-1200II

Like other great power amplifiers, the HCA-1200II requires at least 72 hours of continuous operation after it is first turned on to sound its best. This gives the materials in various parts a chance to "form" so audio signals achieve greater definition, smoothness and transparency.

Although the unit will sound spectacular when you first operate it, you will find it worthwhile to listen again after a few days and you'll discover details in your music and videos you may not have guessed were there.

Maintaining your HCA-1200II

The HCA-1200II requires no periodic maintenance and has no user serviceable parts inside. Do not remove the top cover to avoid risk of electric shock. To keep it clean use only a soft cloth and never use any solvents or abrasives. Fingerprints may be removed with a soft cloth moistened only with a few drops of water.

The amplifier has corrosion-free gold input jacks, but each year it is a good idea to twist the input plugs to preserve perfect signal transfer by removing corrosion which might have accumulated on the connecting plugs themselves. *Make sure the unit is turned off while you do this.*

Fuse

The HCA-1200II has one external 10 ampere fuse which may blow as a result of an internal fault condition. This protects the unit from possible damage to internal parts. *Never* replace this fuse with a larger value. Substitution of a larger fuse may create serious stress or damage to internal parts and will void your warranty.

In Case of Trouble

lf you suspect a problem with this unit, first recheck all your connections. If only one channel is inoperative, the trouble may be caused by another component or even a defective hookup cable. However, if the same channel is at fault when you reverse the Left and Right channel pair cables to your HCA-1200II (turn it off before moving wires), it may indicate trouble within the power amplifier itself. We suggest you contact your authorized Parasound Dealer or Installer, or call Parasound Technical Service if you suspect a problem. We may be able to suggest other diagnostic tests you can easily perform yourself and which will save you a lot of trouble.

If it is determined that the HCA-1200II should be returned to Parasound for inspection and possible servicing, you must first call or write to obtain a Return Authorization number. You will be asked to repack the unit in its original styrofoam packing and *both* of its cardboard cartons for proper protection in transit. We will give you shipping instructions.

Units that arrive without the correct Return Authorization number, without a suitable shipping carton or evidence of improper internal packing or collect will be refused. We cannot accept collect shipments. After repair under warranty, the unit will be returned to you prepaid. If we found no problem with the unit, we will return the unit with collect charges for return shipping charges.

Parasound HCA-1200II Specifications

Continuous Power Output - Stereo
205 watts RMS x 2, 20Hz-20kHz, 8 Ω, both channels driven
315 watts RMS x 2, 20Hz-20kHz, 4 Ω, both channels driven

Continuous Power Output - Mono
625 watts RMS, 20Hz-201kHz, 8 Ω

Current Capacity
40 amperes continuous
57 amperes peak

Slew Rate
>130V/μsecond

Frequency Response
8Hz-150kHz, +0/-3dB at 1 watt

Total Harmonic Distortion
< 0.06% at full power
< 0.03% typical levels

TIM
Unmeasurable

IM Distortion
< 0.04%

Dynamic Headroom
> 2dB

Interchannel Crosstalk
> 80dB at 1kHz
> 63dB at 10kHz

Input Impedance
42kΩ

Input Sensitivity
1.4V for rated output
1.0V for 28.28V output, THX reference level

S/N Ratio
> 110dB, input shorted, IHF A weighted

Damping Factor
> 600 at 20Hz

Dimensions
19" wide x 5.5 high x 13" deep

Weight
37 lbs. net

Special Features

- THX certified by Lucasfilm Ltd.
- Massive 1kVA power transformer
- 60,000µF computer-grade capacitors in power supply
- Multiple polystyrene film bypass capacitors in power supply
- Cascode Class A input stages with matched J-FET pairs
- Hand picked MOSFETs in high voltage driver stage
- 10 pairs of 50MHz, 15 ampere bipolar output transistors
- Output transistors direct-coupled to speakers without LRC network
- DC servo direct-coupled audio circuits with 3Hz roll off
- Linear tracking, instantaneous-acting DC servos
- High-bias Class AB operation
- Gold-plated metal structure RCA input jacks
- Multiple temperature sensors and silver-cadmium relay protection
- FR-4 glass epoxy circuit boards, double-sided for precision
- Proprietary quick-settling bias circuit obviates warmup period
- Custom designed audiophile-grade AC power cord.

About the Designer of your HCA-1200II

We created your Parasound HCA-1200II to be among the finest amplifiers ever made for the reproduction of *music*. To build a world class amplifier, we turned to world class designer, John Curl. John is considered one of the most respected designers of our time. His advances in the art of audio have been renowned for over 20 years. And now his legendary quality has been brought to home audio and home cinema reproduction.

John was the designer of the Mark Levinson JC-2 preamplifier in 1974. A landmark product whose performance justified its stunningly high price, it inspired the emergence of the high end audio industry. He designed the mastering recorders used by Wilson Audio and Mobile Fidelity, the mixing consoles used by the Grateful Dead for concerts and recordings, and electronics at the site of the famed annual Montreux Jazz Festival in Switzerland. Most recently he has redesigned the recording electronics for Stereophile Magazine.

John has published definitive articles on advanced circuit design and the influence of different capacitor types on the reproduction of music. He designed the Denneson JC-80 preamplifier, Symmetry electronic crossover, SOTA head amplifier and collaborated with noted Finnish designer Matti Otala in explorations of the phenomenon of Transient lntermodulation Distortion.

John also builds the wonderfully musical, quiet (and very expensive) Vendetta Research phono preamplifiers which have earned rave reviews in *Audio, The Absolute Sound* and repeated Class A distinction in *Stereophile*. He designs and builds the products the top reviewers purchase for their own listening pleasure. Those who can afford his designs have been a privileged few. Take another look at some of the special features in your Parasound HCA- 1200II - these are the hallmark of the finest, most musical high-end audio models which have earned critical acclaim.
And now they're yours.

Parasound Limited Warranty (USA only)

Your Parasound HCA-1200II is covered by a limited warranty against defects in materials and workmanship for a period of two years from date of purchase. This warranty is provided by the Parasound dealer where the unit was purchased. Warranty repair will be performed only when your purchase receipt is presented to validate your ownership, date of purchase and authorized status of the selling dealer. Defective parts will be repaired or replaced without charge by your authorized dealer's store or the location designated by your dealer that is authorized to service Parasound equipment. Additional information is available by calling or writing to the Service Manager, Parasound Products, Inc. to the address below. Charge for unauthorized service and transportation costs are not reimbursable under this warranty.

This warranty becomes void if the product has been damaged by alteration, misuse, accident or neglect. Alteration includes removal, obscuration or defacement of its serial number. This warranty becomes void if unit has been burned out by abusive extended testing or operation with load impedances contrary to printed instructions. This warranty applies only to units used in residential, non-commercial situations. The warrantor assumes no liability for property damage or any other incidental or consequential damage whatsoever which may result from the failure of this product. Any and all warranties or merchantability and fitness implied by law are limited to the duration of this expressed warranty.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

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

Please Stay in Touch

We'd like to hear from you about your experience with your Parasound HCA-1200II. Of course we want to assist you with any questions you may have, but we'd also be thrilled to know how much you are enjoying the unit. You don't need to have a problem as an excuse to call.

Reviews on Parasound are coming in from all over the world and we continually have exciting new products in development. If you'd like us to keep you advised, just drop a line and ask to receive updates. We welcome your suggestions and look forward to hearing from you.

PARASOUND

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Ventilation Guidelines for Parasound Power Amplifiers

Your Parasound power amplifier is designed to operate with high idling, or bias, current to reduce higher-order harmonic distortion. This bias optimization is characteristic of all Parasound power amplifiers and is perfectly normal, but it results in noticeably warmer operation even when no signal is present. While many other amplifiers manufacturers have chosen to bias their amplifiers at a lower level to run cooler, we bias our amplifiers so the output transistors are allowed to operate in a much more linear region. Although the amplifier may run a little warmer than other amplifiers. we feel the resulting sonic improvements are significant and justified.

However, to insure safe and reliable operation, it is very important that the amplifier has plenty of ventilation to prevent overheating and automatic shut down from the thermal protection circuitry.

Please observe the following guidelines when installing your Parasound power amplifier:

- If you are not using a fan, allow *at least* six inches on each side and above the amplifier, and *do not* close off the front with a door or panel.

- If you are enclosing the amplifier in an equipment cabinet, use a fan and draw in cool air or exhaust warm air. In either case, two vent holes are required: one for intake and one for exhaust.

- Do not place the amplifier on carpeting which will obstruct the air now from the bottom of the amplifier.

- If you plan on stacking amplifiers, you *must* use a fan.