HALO by PARASOUND



JC3+

Phono Preamplifier

OWNER'S GUIDE

Read this manual and all warning labels on the product before using this product. Failure to follow these instructions and safety precautions can result in serious injury or death.

Keep your packaging. The original carton and inserts are the only packaging designed to protect your JC3+ if you ever move or ship it. Shipping damage caused by inadequate packaging is not covered by warranty.

Important Safety Instructions

The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of “dangerous voltage” inside the product that may constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the product.

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

1. **Read instructions.** Read all the safety and operating instructions before operating this product.
2. **Retain instructions.** Retain safety and operating instructions for future reference.
3. **Heed warnings.** Adhere to all warnings on the product and in the operating instructions.
4. **Follow instructions.** Follow all operating and use instructions.
5. **Cleaning.** Unplug this product from the wall outlet before cleaning. Use a damp cloth for cleaning. Clean the outside of the product only.
6. **Attachments.** Do not use attachments that are not recommended by the product manufacturer; they may be hazardous.
7. **Water and moisture.** Do not use this product near water.
8. **Accessories.** Do not place this product on an unstable cart or stand. The product may fall, causing bodily injury and damage to the product. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart to overturn.
9. **Ventilation.** Slots and openings in the cabinet are provided for ventilation to ensure reliable operation of the product and to protect it from overheating. These openings must not be blocked or covered. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided.
10. **Power sources.** Operate this product only from the type of power source indicated on the label. If you are not sure of the type of power supply to your home, consult your dealer or local power company. This product is equipped with a three-prong grounding plug. This plug will only fit into a grounding power outlet. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding plug.
11. **Power cord protection.** Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them.
12. **Lightning.** Unplug the unit from the wall outlet for added protection during a lightning storm and when it is left unattended and unused for long periods of time. This will prevent damage to the product due to lightning and power line surges.
13. **Overloading.** Do not overload wall outlets or extension cords. This can result in a fire or electric shock.
14. **Inserting objects into unit.** Never push objects of any kind into this product through any openings; they may touch dangerous voltage points or short out parts that could result in fire or electric shock.
15. **Servicing.** Do not attempt to repair or service this product yourself. Opening or removing covers may expose you to dangerous voltage and other hazards. Refer all servicing to qualified service personnel.
16. **Damage requiring service.** Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions: **a)** If the power-supply cord or plug is damaged. **b)** If liquid has been spilled into the product. **c)** If the product has been exposed to rain or water. **d)** If the product does not operate normally by following the operating instructions. **e)** If the product has been dropped or damaged in any way. **f)** If the product exhibits a distinct change in performance.
17. **Replacement parts.** When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer. Unauthorized substitutions may result in fire, electric shock, and other hazards.
18. **Safety check.** Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
19. **Wall or ceiling mounting.** Mount the product to a wall or ceiling only as recommended.
20. **Heat.** The product should be situated away from heat sources such as radiators, heat registers, stoves, and other products (including amplifiers) that produce heat.

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Introduction

Thank You for Choosing Parasound

Your new Parasound Halo JC3+ Phono Preamplifier is the pinnacle of analog audio technology and value engineering. It is legendary designer John Curl's latest phono preamplifier design, continuing his reputation for designing legendary phono preamplifiers that date back to the 1970s. We're proud to offer you this exceptionally versatile audio component, confident that it will bring you many years of enjoyment and dependability. We encourage you to read this entire manual to maximize your enjoyment.

Registering Your JC3+

When you register your JC3+ you can report an issue or ask a question about this exact unit right from your Parasound account, with your model and serial number already on file. Registered owners also receive priority support.

If you bought your JC3+ directly from Parasound, it is already registered to you. If you bought it from a Parasound Registered Dealer, your dealer may register it on your behalf; if they do, you will receive a confirmation email from us within 7 days of your purchase. You can also register it yourself at any time; see How to Register at **parasound.com/pages/how-to-register**.

Parasound JC3+ serial number: _____ (5 or 6 digit number below the bar code)

Important Warranty Information

There is no Parasound warranty for this unit if it was not purchased from Parasound or a Parasound Registered Dealer. Detailed warranty terms are available at **parasound.com/pages/support**.

Before you buy, check that a seller is a Parasound Registered Dealer with Verify a dealer at **parasound.com/pages/verify-dealer**.

Investigate very carefully any claims made by a dealer who is not a Parasound Registered Dealer. Statements an unregistered dealer makes about their own or third-party warranty coverage are undependable and misleading; unregistered dealers lack the capability to make repairs or arrange for repairs of Parasound equipment.

A missing or altered serial number could indicate that a unit was re-sold by an unregistered dealer or is stolen merchandise. If this unit is missing its serial number, or the serial number has been altered, return it to your dealer immediately for a full refund.

Unpacking and Placement

Unpacking Your JC3+

Carefully remove your JC3+ from its shipping carton and locate the enclosed accessories:

- AC power cord
- 12 V trigger wire for auto turn on, with a mono 3.5 mm mini plug at each end
- 12 V trigger wire with a mono 2.5 mm sub-mini plug at one end and a mono 3.5 mm mini plug at the other

While you are unpacking your JC3+, inspect it thoroughly for possible shipping damage and tell your Parasound dealer immediately if you find any evidence of shipping damage.

This would be a good time to make a copy of your sales receipt to store with the JC3+'s original packing.

Important: keep all of your packaging. Save both the inner and outer cartons and, especially, the molded foam inserts. You will need the original packaging to safely move or ship your JC3+, and any unit sent to Parasound for service must be shipped in its original packaging. Bubble wrap and other substitutes do not provide adequate protection and can cause shipping damage that is not covered by the warranty. You may flatten the cartons to save storage space after cutting the taped seams on the bottom flaps.

Placement Guidelines

The JC3+ will be easier to use and will last longer if you follow these simple guidelines:

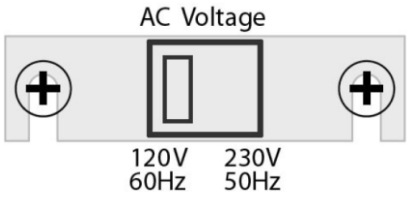
- Place the JC3+ on a shelf that will adequately support its weight.
- Use input and output cables that are long enough to leave some slack; that will enable you to pull the JC3+ out of a cabinet to check or to change connections without inadvertently disconnecting cables.
- If you're putting the JC3+ in a cabinet, it needs a space that's at least 22 in wide so you'll be able to turn it around for access to its rear panel connections.
- Place your JC3+ where you can route input and output signal cables as far as possible from any AC cords.
- Where signal cables must cross AC cords they should do so only at a 90° right angle.

Ventilation Requirements

- Always position the JC3+ horizontally.
- We recommend that you do not place the JC3+ above a power amplifier.
- Do not install the JC3+ in an unventilated equipment cabinet or compartment. Pockets of stagnant hot air can build up even in a cabinet with an open front and back.

AC Mains Voltage

Make sure the 120 V/230 V voltage selector switch on the underside of the JC3+'s chassis is set for the correct AC line (mains) voltage before you plug in the power cord. The JC3+ can be seriously damaged if this switch is set for the wrong AC mains voltage. Check the switch itself; do not depend on the 120 V or 230 V markings on the carton.



In the 120 V position the JC3+ can safely operate with AC line voltages between 110 and 120 V, which is correct for North America. Most other countries require setting it to 230 V. With the 230 V setting the JC3+ can operate safely with AC line voltages between 220 and 240 V.

> **Note: a JC3+ that has been damaged by connection to the incorrect AC mains voltage is not covered by the Parasound warranty.**

AC Power Cord

The AC cord supplied with your JC3+ is a high quality IEC type cord. Connect it directly to an AC wall outlet or power conditioner that is always "live." If possible, plug your JC3+ into the same AC outlet that your line level preamplifier is plugged into. If different AC outlets are used for the JC3+ and the preamplifier, the ground potential may be higher or lower between the outlets, resulting in audible hum.

AC Polarity Switch

The JC3+ AC Polarity switch inverts the "hot" and "neutral" conductors of the incoming AC power. It does not affect the third pin ground connection. In most cases the AC Polarity switch should remain in its Normal position. Occasionally, the only way to reduce or eliminate hum when listening with a phono preamp is to invert the phono preamp's hot and neutral conductors.

Note: turn off the JC3+ and unplug its AC cord before changing the setting of the AC Polarity switch.

AC Power Switch

This switch turns the JC3+ completely off when it will not be used for an extended time. Normally, this switch is left in the "on" position (upper section pressed in).

Rack Mounting

With its four feet removed, the JC3+ occupies two rack spaces (3.5 in / 88 mm). For mounting in a standard 19 in equipment rack, use the Parasound HRA 2 rack mount kit, sold separately under **Rack Bracket and Mount Kits**. The kit includes four bolts and eight plastic washers with raised shoulders.

Slide one washer onto each mounting bolt with its raised shoulder pointing toward the panel hole. Carefully insert the bolt through the hole and slide the other washer onto the bolt with its raised shoulder facing the rear side of the panel. The washers sandwich the JC3+ panel so there is no metal-to-metal contact between the chassis, the rack, and other components.

Note: tighten each bolt just enough to keep the unit secure in the rack to avoid deforming the shoulder washers. Eliminating metal-to-metal contact reduces the likelihood of creating a ground loop that might introduce hum into your system.

Audio Connections

Always disconnect the AC cords to your JC3+ and power amplifier(s) before making or changing any input, output or trigger wire connections. Inserting or removing an input or output cable while the JC3+ or power amplifiers are turned on can result in a blast of sound that can damage your loudspeakers. Make sure there is no strain or tension on any cables that could cause them to pull loose.



Audio Input Connections

Connect your turntable's signal cables to the Input jacks on the JC3+. It is a good idea to treat the turntable cable's RCA plugs with DeoxIT to remove any oxidation on them. The turntable's ground wire attaches to the JC3+ Ground terminal, located between the two channel inputs and outputs.

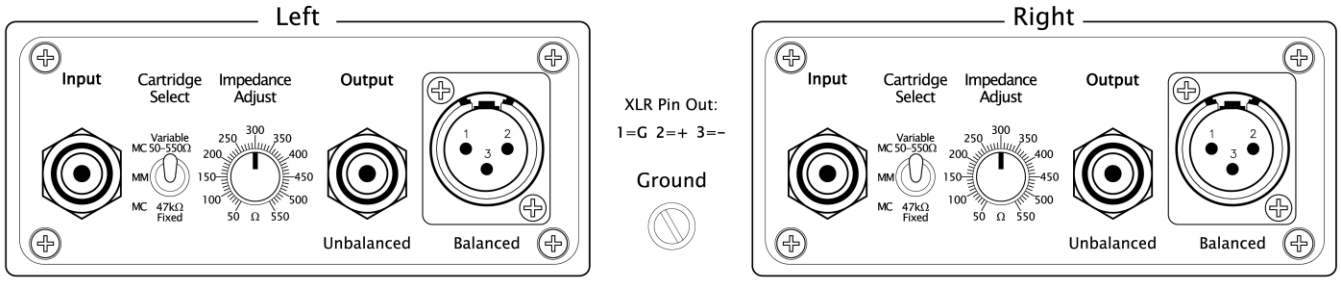
Note: in some cases eliminating hum might require connecting your turntable ground wire directly to your line stage preamp instead of to the JC3+. You can use any chassis screw on your line stage. In rare instances hum might be lowest if your turntable ground wire is not attached at all.

Important: turntables and phono preamps are very sensitive to electromagnetic fields that can cause audible hum. To minimize hum follow these guidelines:

- Place your turntable as far as possible from power amplifiers or power line conditioners.
- Run your turntable signal cables as far as possible from power amplifiers or power line conditioners.
- Do not run the turntable signal cables parallel with any AC cords.
- Wherever turntable signal cables must cross AC wires they should cross at a 90° right angle.

- It might be necessary for you to experiment with the exact positioning of the turntable signal cables to minimize hum.

Input Settings



Cartridge Select Switch

Each channel module has a three position Cartridge Select switch to select an MM (moving magnet) or MC (moving coil) phono cartridge. The Cartridge Select switch has two MC settings: Variable 50 to 550 Ω and Fixed 47k Ω.

Note: switch and knob settings should be the same for both channels.

Select the setting that matches your turntable's cartridge type. If you are unsure which setting is best for your equipment, check the cartridge manufacturer's website. You may also experiment and use another setting that sounds best in your system.

- **MM.** For moving magnet cartridges. It provides a 47k Ω load and appropriate gain for all MM cartridges.
- **MC Variable 50 to 550 Ω.** Accommodates the vast majority of moving coil cartridges. It provides the higher gain required for very low output MC cartridges. This setting works with the adjacent Impedance Adjust control, described below.
- **MC Fixed 47k Ω.** Provides the appropriate gain for MC cartridges with an alternative 47k Ω load. You can try the 47k Ω setting to see which sounds best in your system. MC Fixed 47k Ω is also the load that Grado and Soundsmith recommend for their Moving Iron (MI) cartridges.

Impedance Adjust Control (MC Variable 50 to 550 Ω)

Most MC cartridges will thrive with a setting of 100 Ω. The JC3+ Impedance Adjust knob enables you to fine tune the input impedance for MC cartridges over a range of 50 Ω to 550 Ω. Cartridge makers generally specify what they consider to be an optimal load impedance; however, their spec might not give you the best results in your system. We encourage you to experiment with this control and use whichever load impedance gives the best performance in your listening room. For some JC3+ owners the sonic differences will be subtle.

Audio Output Connections

The JC3+ Output jacks connect to the input jacks on your line level preamplifier. Each JC3+ channel module has two output jacks, one balanced XLR jack and one unbalanced RCA jack. The balanced and unbalanced jacks are active simultaneously. If your line level preamplifier has balanced XLR inputs, we recommend using the JC3+ balanced XLR output jacks for the maximum rejection of external noise sources.

Balanced XLR Pin Configuration

The JC3+ XLR jacks conform to the industry standard:

Pin 1 ground, pin 2 positive (+), pin 3 negative (–).

Turn On Options

The setting of the rear panel Turn On Options switch determines how the JC3+ turns on and off. Setting the Turn On Options switch to 12 V disables the JC3+'s front panel On-Off button. There are two positions for this switch:

Manual:

When the Turn On Options switch is set to Manual the JC3+ is turned on and off only by pressing the On-Off button on its front panel.

12 V Trigger:

When the Turn On Options switch is set to its 12 V position, the JC3+ is turned on and off automatically with an external +9 V to +12 V voltage from your preamplifier. When the external trigger voltage ceases the JC3+ will turn off immediately.

12 V In Jack

The JC3+ 12 V input uses a 3.5 mm jack (mono). To use the 12 V trigger, insert the trigger wire plug into this jack and the plug at the wire's other end into your preamplifier's 12 V trigger output jack. When the Turn On Options switch is set to 12 V the JC3+ will turn on and off with your preamplifier. The JC3+ 12 V trigger circuit draws a negligible 15 mA.

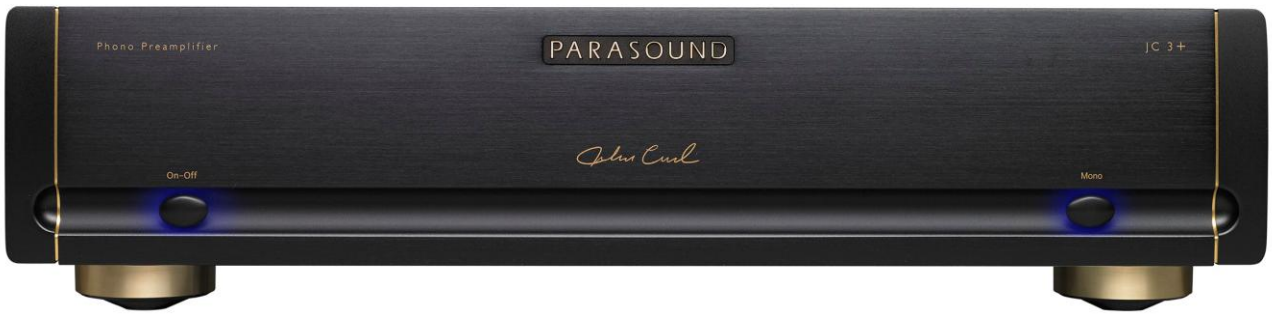
12 V Loop Out Jack

The Trigger Out jack lets you loop or "daisy-chain" the incoming trigger voltage to another component. The total load on your triggering device's 12 V output is the sum of the trigger current drawn by each of the components you loop together, so check the maximum capacity of your preamplifier's trigger output before connecting several components.

3.5 mm vs. 2.5 mm jacks

Some other Parasound components use a 2.5 mm "sub-mini" (mono) trigger jack. To connect the JC3+ to one of them, use the included trigger wire with a 2.5 mm plug at one end and a 3.5 mm plug at the other.

Front Panel Operation



On-Off Button

Push once to turn on the JC3+. There will be a slight delay as the circuits stabilize and the DC servos settle down. When the JC3+ is turned on the blue glow around the On-Off button will become brighter. Push the button again to turn off the JC3+. The front panel On-Off button will be disabled when the Turn On Options switch is set to 12 V.

Mono Button

Press the Mono button one time to combine the stereo channels to mono. Press it a second time to return to stereo. Older mono records and stereo records with high levels of rumble will sound cleaner when you select mono on the JC3+. The Mono button glows blue when stereo is selected and glows amber when mono is selected.

Getting Help and Service

Start With Your Dealer

If something doesn't seem right, contact your Parasound Registered Dealer first. As the original owner, the dealer who sold you your JC3+ is your first stop for help. Your dealer knows your system and can resolve most issues quickly.

Parasound Support

If your dealer can't resolve the issue, or you purchased directly from Parasound, visit **www.parasound.com/help**. Sign in and open Owner Support to ask a question or report an issue with your registered JC3+; your model and serial number are already on file.

Warranty Service

- The JC3+ is covered by Parasound's Limited Warranty for the original owner when purchased from Parasound or a Parasound Registered Dealer. Applicable warranty periods and complete terms are at **parasound.com/pages/support**.
- Never ship your unit anywhere without first obtaining a Return Material Authorization (RMA) at **www.parasound.com/help**. The RMA number must be clearly marked on the shipping label or the shipment will be refused.
- Ship only in the original carton with its molded foam inserts, and insure the shipment for its value. Damage caused by inadequate packaging is not covered by the warranty.
- Keep your original purchase receipt from Parasound or your Parasound Registered Dealer; it establishes your warranty. The Parasound warranty is not transferable.

Outside the USA

Warranty coverage for units purchased outside the USA is provided by the authorized Parasound distributor for your country.

Specifications

Frequency Response

20 Hz to 20 kHz, +/- 0.2 dB

Total Harmonic Distortion (THD)

< 0.01 % at 1 kHz

Signal to Noise Ratio, MM

> 87 dB, input shorted, IHF A-weighted

> 78 dB, input shorted, unweighted

Signal to Noise Ratio, MC

> 87 dB, input shorted, IHF A-weighted

> 67 dB, input shorted, unweighted

Interchannel Crosstalk

72 dB at 1 kHz

Input Impedance

MM: 47k Ω

MC: 50 to 550 Ω variable, 47k Ω fixed

Output Impedance

Unbalanced: < 100 Ω

Balanced: < 100 Ω per leg

Input Sensitivity at 1 kHz

MM: 4 mV for 1 V output

MC: 600 µV for 1 V output

Total Gain

MM: 48 dB

MC: 64 dB

Dimensions

Width: 17-1/4" (437 mm)

Depth: 13-3/4" (350 mm)

Height, with feet: 4-1/8" (105 mm)

Height, without feet: 3-1/2" (89 mm), 2U

Net Weight

19 lb (8.6 kg)

Shipping Weight

26 lb (11.8 kg)

Power Requirement

Standby: 1 Watt

Power On: 12 Watts

120 VAC or 230 VAC, 50 Hz to 60 Hz

AC mains voltage is set on the chassis bottom

Rack Mount Accessory

HRA 2 rack mount kit (sold separately)

Full, current specifications for the JC3+ are available at **parasound.com/products/jc3**.

Specifications and features subject to change or improvement without notice.
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