audio research
HIGH DEFINITION®

GSPre

Stereo Preamplifier

User Guide

FINE SOUNDS
GROUP

Thank you for choosing the GSPre to be a part of your high performance music listening system. Since 1970, Audio Research has been creating some of the world's finest audio equipment. Each piece is handcrafted in Minnesota, and has been designed to provide many years of listening enjoyment.

We understand you are eager to begin listening; however, please take a few minutes to read through this guide for useful information concerning the operation of your new preamplifier. Once installed, please allow an appropriate break-in period to fully appreciate the benefits this preamplifier will provide to your system.

After reading the user guide, if you have any further questions regarding your preamplifier, contact your dealer or Audio Research customer service - they will be happy to help you make the most of your new component.

Happy Listening!

Thank You.

Contents

Warnings

To prevent fire, or shock hazard, do not expose your GSPre to rain or moisture.

Do not place objects containing water on top of this unit.

This unit contains voltages which can cause serious injury or death. Do not operate with covers removed. Refer servicing to your authorized Audio Research dealer or other qualified personnel.

The detachable power cord on your GSPre is equipped with a heavy gauge, 3-conductor cable and a standard three-prong grounding plug. For absolute protection, do not defeat the ground power plug. This provides power line grounding of the GSPre chassis to provide absolute protection from electrical shock.

The appliance coupler (a.c. power connector) at the rear of this unit must be accessible for emergency power disconnect.

For continued protection against fire hazard, replace the fuse only with the same type and rating as specified at the fuse holder.

The power button on the front of this unit, when off, does *not* disconnect all power from this unit. This unit is in sleep mode when not on.

This unit is RoHS compliant.

The GSPre also has automatic muting to help protect system components in the event of low line voltage. When sensing low line voltage, the preamp displays 'Low Line' and automatically goes into 'Mute'. This condition will persist until the line voltage returns to a safe operating level; please note the unit will remain in 'Mute' even after 'Low Line' no longer appears.

Note that automatic muting is only designed to protect against power line interruptions or severe voltage drop. It will not mute in the event of subsonic transmissions from a faulty input source, amplifier failure or speaker malfunction.

A note about packaging...

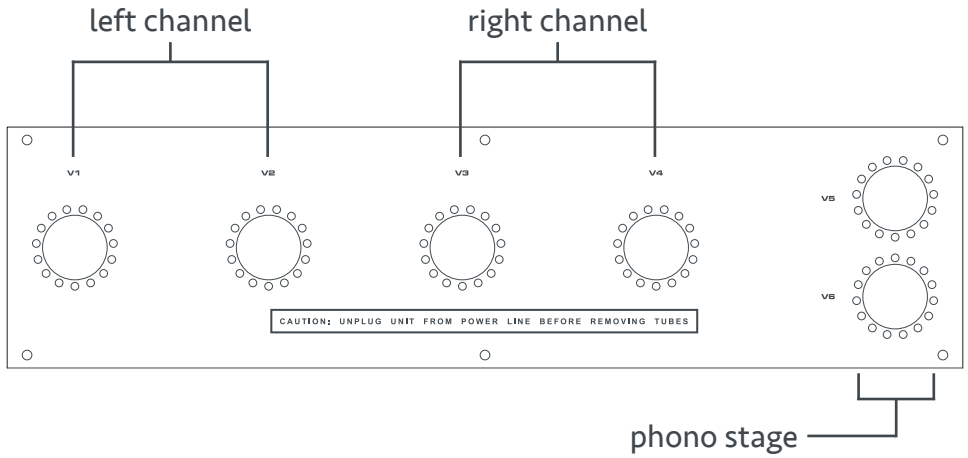
Save all packaging in a dry place away from fire hazard. Your GSPre preamplifier is a precision electronic instrument and should be properly cartoned any time shipment is made. You may not have occasion to return your unit to the factory for service, but if that should prove necessary, or other occasion requiring shipment occurs, the original packaging will protect your GSPre from unnecessary damage or delay.

Installation

Before operating the GSPre

This unit has been shipped with the vacuum tubes installed in protective foam in separate boxes packed inside the shipping carton. Included are two matched pairs of 6H30 tubes for the line stage, and one matched pair of 6H30 tubes for the phono preamplifier. Remove the tubes carefully from the protective foam. Using a phillips-head screwdriver to loosen the fastening screws, remove the top cover and set aside.

After removing the top cover and the vacuum tubes packed in protective foam, see the accompanying illustration for instructions on installing the tubes for your GSPre in their proper locations in the chassis. Note that the numbers written on each tube correspond to a 'V' number etched on the chassis next to each tube socket. Insert each tube firmly, carefully aligning the tube pins with the corresponding socket holes.



Installation

In your system

To insure normal component life and safe operation this unit must be operated only in an upright position. Adequate airflow and proper cooling can occur only if there is no restriction above and behind the unit and on either side.

The special non-marring elastomer feet provide adequate spacing and stability only on a smooth, hard surface, and also assist to isolate the amplifier from spurious vibrations. For upright stability and best performance, never operate the unit while it is sitting on a soft surface such as a thick rug or carpet.

Due to its weight, this preamplifier must be supported on a surface specifically rated for such a load. Check with the manufacturer of your support system to be sure it is rated to handle this weight.

If the unit is to be operated in an enclosure such as an equipment rack, make certain that adequate airflow above and to each side of the unit is provided.

The 'ambient' operating temperature should never exceed 120 F or 49 C. Improper installation will cause premature tube failure and will affect your warranty, as well as the service life of the unit.

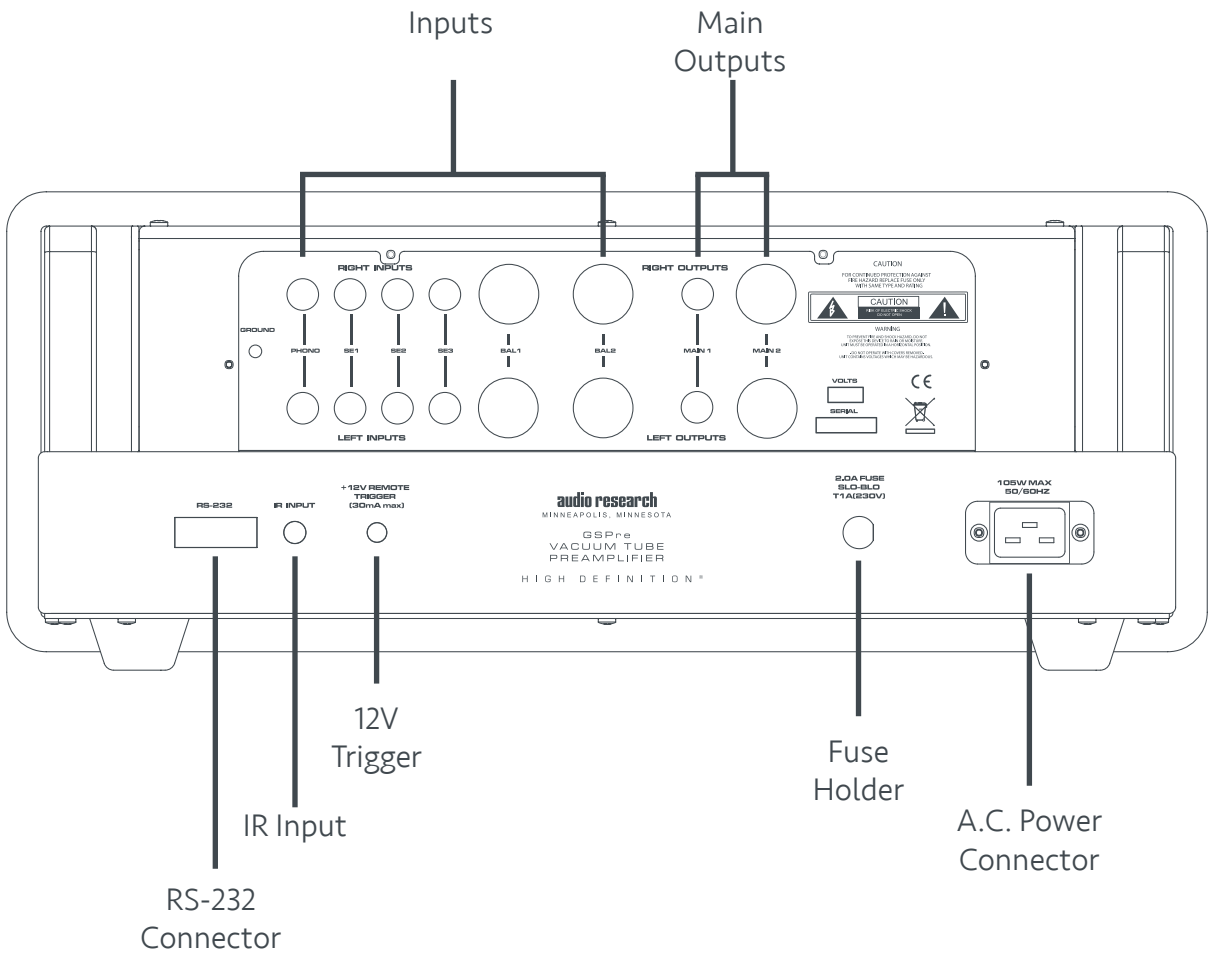
It is normal for a vacuum tube preamplifier to run quite warm, and if used for prolonged periods, hot to the touch. All components within are, however, operated at safe, conservative levels and will not be improperly affected thereby, providing the requirements outlined above are adhered to.

Do not stack the preamplifier on top of a power amplifier: not only could this cause overheating, but hum may be introduced into the preamp from the proximity of the amplifier's power transformer.

Do not stack components or other objects directly on top of the GSPre.

Connections

Back Panel Connections



Connections

Input Connectors

The GSPre provides four pairs of single-ended input connectors: SE1 - 3, and PHONO. Please note that input SE3 can be selected as a unity gain 'processor' input; in this case, SE3 should only be connected to a component with a volume control (such as a home theater processor). For further information about the SE3 processor mode, see the section 'Processor' on page 16. In addition, there are two pairs of balanced input connectors: BAL1 and BAL2.

Note

The phono stage of the GSPre has a gain of 58 dB; please keep this in mind when selecting a phono cartridge to pair with your preamplifier. Audio Research recommends a phono cartridge within an output voltage range of 0.5 mV to 2.5 mV.

Output Connectors

One pair of balanced and one pair of single-ended main output connectors are provided.

A.C. Power Connection

It is important that the GSPre be connected via its supplied 15 amp IEC 14-gauge power cord to a secure, dedicated A.C. power receptacle. Never connect to convenience power receptacles on other equipment. Only use the power switch on the front of the GSPre for On/Off control of the preamplifier, or the IR input, RS232 or remote control.

RS-232 Connection

The RS-232 connection allows for remote control via systems such as Creston or other automation systems.

IR Input

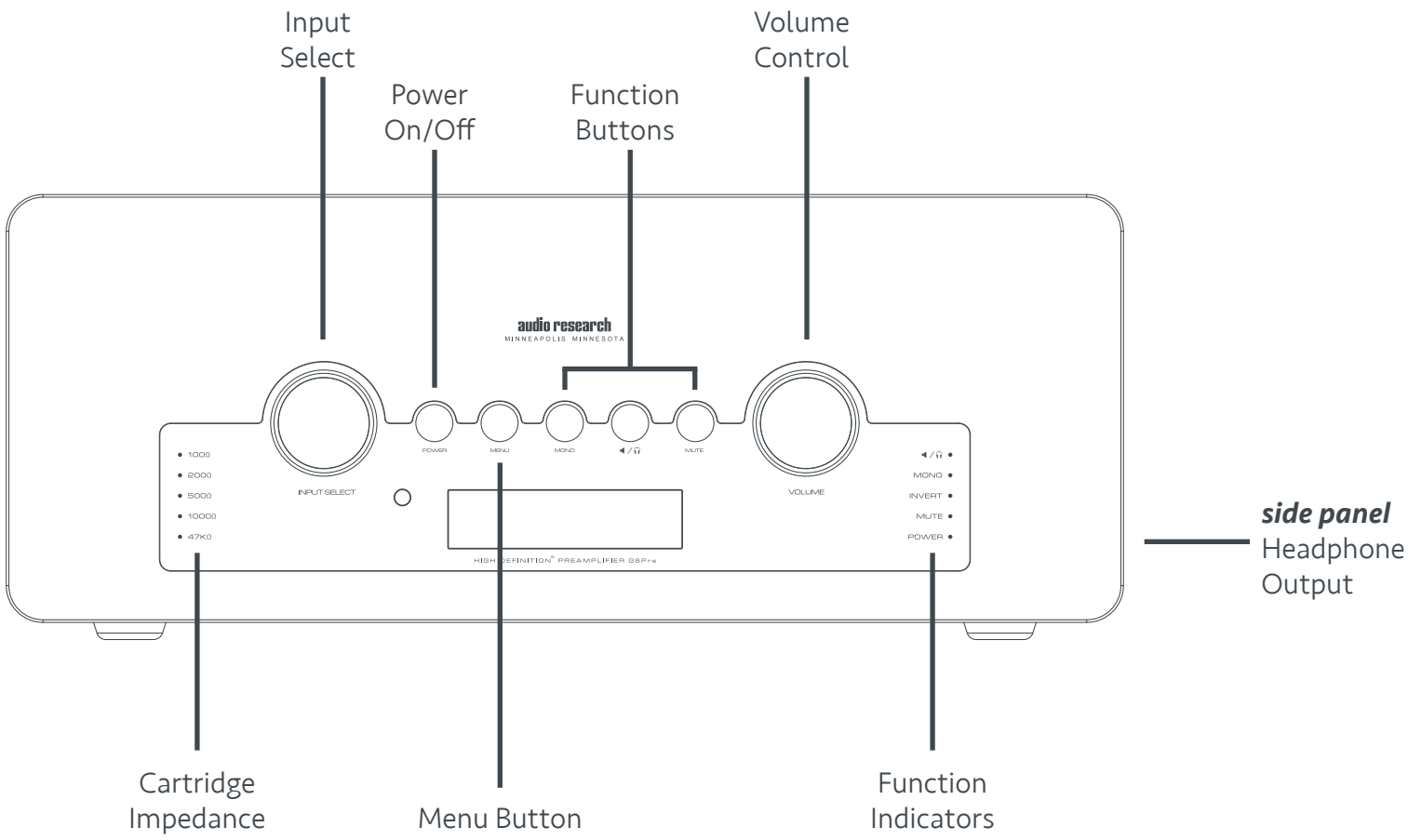
The IR input can be used to link the GSPre to an IR repeater system with a standard mono 1/8" connector.

12V Trigger Jack

The +12V DC output connector provides the ability to remotely turn on and off other linked components such as power amplifiers having similar capabilities.

Operation

Front Panel Controls and Displays



Operation

Start-Up

- Secure all rear-panel connections between GSPre, power amplifier(s) and input sources.
- Plug three-prong power cord from rear of chassis into grounded A.C. wall outlet. The Power switch defaults to 'off' when the unit is plugged into a power receptacle.
- Press power switch (either on the remote or front panel). The preamplifier will begin the warm-up sequence, which lasts approximately 40 seconds, during which 'MUTE' will flash on the display. After the warm-up sequence is complete, the unit will be muted. Depress the front panel 'MUTE' button or the Mute button on the remote to initiate normal operation. You may depress the Mute button prior to the unit completing the warm-up cycle; 'MUTE OFF' will flash on the display until the warm-up cycle is complete.
- Select input source and adjust the volume as necessary.

example of display after warm-up sequence is complete.

Shut-Down

- Activate 'MUTE' function.
- Turn off power amplifier(s).
- Press Power switch to 'off'.
- Turn off input sources.

Note

The GSPre should be turned on before the amplifier in your system. If the GSPre is turned on after the amplifier, it will amplify any extraneous turn-on noises the preamplifier or other source components might generate, which could potentially damage the loudspeakers. Good operating practice dictates that the amplifier should be turned on last, and turned off first in an audio system.

Break-in

All quality stereo equipment benefits from a break-in period; during this time, the various components, wiring and solder connections change as electrical signals pass through them. While your GSPre will sound fantastic out of the box, it will only improve with continued use.

Operation

Front Panel Controls

The GSPre has two microprocessor-driven rotary controls and five buttons (Power, Menu, Mono, Speaker Off, and Mute).

Left Rotary control (Input Select)

Select input by rotating the control to the left or right. The screen displays the current input at the top right.

Right Rotary control (Volume)

Adjust volume (output level) up or down for both L and R channels. Volume control is also selectable via VOL UP and VOL DN buttons on the remote control. Volume adjustment is indicated in the display window by numeric digits on 0–103 scale.

Do not turn volume up beyond normal listening levels when 'mute' is engaged to avoid unexpected or possibly damaging sound levels. Reduce volume level whenever changing input sources, even when muted.

Power On/Off

Supplies power from A.C. wall outlet to preamp; indicated by active display window. The GSPre requires approximately 40 seconds to warm up; this time is required to stabilize the vacuum tubes. See 'Start-Up Procedure' on page 11 for details.

Menu

The menu button enters the setup menu of the GSPre to allow customizing certain settings of the preamplifier. See page 15 for further details about using the setup menu.

Mono

Toggle between Stereo and Mono output.

Speaker Off

Toggle between the main outputs on the rear panel and the headphone jack, located on the right side of the unit. Please note that the GSPre maintains individual volume settings for the main and headphone outputs.

Mute

When activated, Mute electrically disables all output of the preamplifier; indicated by 'MUTE' in display window. This control should be activated before switching inputs, changing connections or shutting down your audio system to help protect your amplifier and speakers from unexpected signal pulses. When deactivated, 'MUTE' disappears from the display window allowing normal operation.

Remote Only Functions

In addition to the controls found on the front panel, the remote control offers access to the following additional features of the GSPre.

Display Brightness Adjustment

The front panel display has six brightness settings, as well as the ability to dim the display completely. To change the brightness, use the 'DSP UP' or 'DSP DN' buttons on the remote. Note that when the display is completely dimmed, a small square appears in the middle of the display to indicate the unit is powered on.

Hours

Pressing the 'HOURS' button will display the total accumulated hours of operation for the GSPre. This is useful to determine the approximate number of hours the vacuum tubes have been in use. After five seconds, the display will revert to the normal operation screen. After replacing vacuum tubes, the hours counter should be reset (see instructions under 'Settings Menu' on page 17).

Note

The installed 6H30 vacuum tubes have an average life span of approximately 4,000 hours. After this time, we recommend replacing them to maintain the best performance of your preamplifier.

Invert

The invert button will change the polarity of the output signal. This is useful for recordings that may have been recorded with inverted phase.

Impedance

The impedance button allows you to change the input impedance associated with the 'Phono' input; this feature only operates when the 'Phono' input is selected.

To match the impedance of the GSPre with your cartridge, refer to the specifications included with your phono cartridge. If no impedance is indicated, contact the manufacturer.

If your cartridge impedance is different from the five settings offered on the GSPre, select the number which is closest to that of your cartridge.

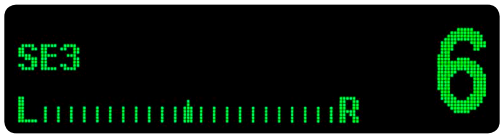
Note

Because it offers an additional gain stage, the Phono input should only be used with a turntable. Connecting another source, such as a CD player or TV to this input, may cause significant distortion which can cause serious damage to your amplifier or speakers.

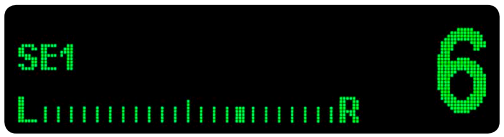
Balance

The Balance control adjusts the output from center position to the left or right channels, which in turn will shift the center point of the sonic image. This is useful in the event the main listening position is not centered between the speakers, or can help with certain room anomalies.

To adjust the balance, press the 'BAL L' or 'BAL R' button on the remote. The balance scale will appear at the bottom the display, and the indicator block will move in the selected direction:



Balance scale in center position

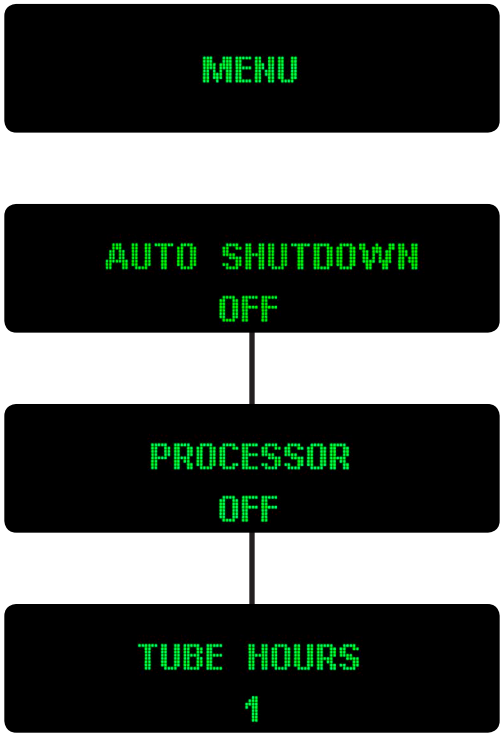


Balance scale shifted right

After five seconds of inactivity, the balance scale will disappear from the screen. If the balance has been shifted to the right or left, 'R+' or 'L+' will appear at the bottom left corner.

Settings Menu

The GSPre has been designed with a simple, intuitive menu to allow you adjustment of several features of the preamplifier. To enter the menu, press the 'MENU' button on the remote or front panel. If no further interaction with the preamplifier or remote is taken for five seconds, the GSPre reverts back to its normal operation screen. Continuing to press the 'Menu' button will toggle you through the different setting options:



Pressing the 'Menu' button will enter the GSPre into the Settings Menu. Pressing repeatedly will toggle through the menu options.

While a menu item is displayed, rotating the volume knob on the front panel, or using the volume up/down buttons on the remote, will adjust the settings of that particular selecton. After making the appropriate change, pressing the 'MUTE' button will confirm the new setting, and the display will show 'OKAY' for five seconds before reverting back to the normal operation screen.

For example:

Press 'MENU' until desired menu item is displayed

Turn volume knob or use volume up/down buttons on remote to make change

Press 'MUTE' button to confirm change

After five seconds, display reverts to normal operation screen

Settings Menu continued...

Auto Shutdown

The GSPre is equipped with an auto shut off feature, designed to turn the preamplifier off after a period of time during which it is not used. The auto shut off feature senses any interaction with the preamplifier, such as button presses, changing the volume, remote usage, etc.

To change/disengage the auto shutdown feature, press the 'MENU' button until the 'AUTO SHUTDOWN' screen is displayed. Using the volume knob on the front panel, or the volume up/down buttons on the remote, you have the option for 'off' (no auto shutdown) or 1-8 hours. Once you have made a selection, press 'MUTE' to confirm. The display will show 'OKAY' before reverting back to the normal operation screen.

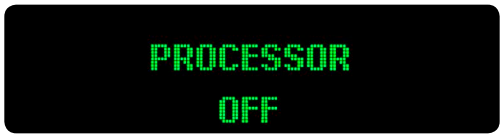
Note

The auto shutdown feature is not in the signal path of the preamplifier and has no deleterious sonic effect to music playback.

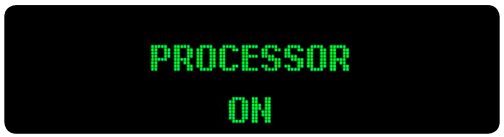
Processor On/Off

The SE3 input of the GSPre can be selected as a standard, volume-controlled input like the other inputs, or it can be set as a 'unity gain' processor input. This is useful when combining the GSPre with a multichannel surround sound processor to maintain the same speaker/amplifier system for left and right channels.

To use SE3 as a processor input, connect the left and right output channels from your surround sound processor to the left and right SE3 inputs. Press the 'MENU' button until 'PROCESSOR' is displayed:



Turn the front panel volume knob, or press the volume up/down buttons on the remote to change the setting to 'PROCESSOR ON':

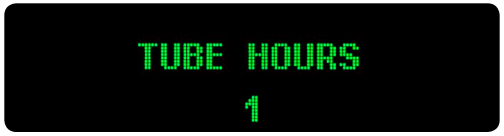


Confirm the setting by pressing the ‘MUTE’ button, and the display will show ‘OKAY’ before reverting back to the normal operation screen. Now when SE3 is selected, it will display ‘PROCESSOR’ and the volume control will be disengaged:

Tube Hours

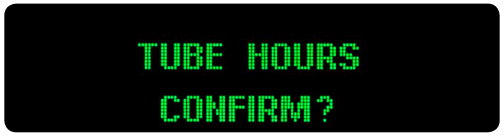
The tube hours display shows the accumulated time the GSPre has been powered on. This is useful for determining the number of usage hours of the installed vacuum tubes. After approximately 4,000 hours, the vacuum tubes should be replaced and the tube hours counter should be reset to zero.

To reset the tube hours counter, press the ‘MENU’ button until ‘TUBE HOURS’ is shown.



Turn the front panel volume knob, or press the volume up/down buttons on the remote until the display reads ‘TUBE HOURS RESET’:

Press the ‘MUTE’ button to confirm, and the display will read ‘CONFIRM?’:



Then press ‘MUTE’ a second time to reset the counter. The display will show ‘OKAY’ for five seconds before returning to the normal operation screen.

Note

Once the hour counter has been reset, the total accumulated hours can not be recalled.

Maintenance

Servicing

Because of its careful design and exacting standards of manufacture, your GSPre preamplifier should normally require only minimal service to maintain its high level of performance.

Caution

Your GSPre preamplifier contains sufficient levels of voltage and current to be lethal. Do not tamper with a component or part inside the unit. Even with the power turned off, a charge remains in the energy storage capacitors for some time. Refer any needed service to your authorized Audio Research dealer or other qualified technician. Additional questions regarding the operation, maintenance or servicing of your preamplifier, please contact the Customer Support Department of Audio Research Corporation at service@audioresearch.com or call 763-577-9700. You may also initiate a service request by visiting the Audio Research website (www.audioresearch.com) and selecting 'Service Repair' at the top right of the home page.

Cleaning

To maintain the new appearance of this preamplifier, occasionally wipe the front panel and top cover with a soft, damp (not wet) cloth to remove dust. A mild, non-alkaline soap solution may be used to remove fingerprints or similar smudges. Cleaners containing abrasives should not be used as they will damage the anodized finish of the front panel. A small, soft paintbrush is effective in removing dust from bevels, the recessed nameplate and other features of the front panel.

Disposal and Recycling Guidelines

To dispose of this electronic product, do not place in landfill. In accordance with the European Union Waste Electrical and Electronic Equipment (WEEE) directive effective August 2005, this product may contain regulated materials which upon disposal require special reuse and recycling processing.

Please contact your dealer or importing distributor for instructions on proper disposal of this product in your country. Or, contact Audio Research Corporation (763.577.9700) for the name of your importing distributor and how to contact them. Packing and shipping materials may be disposed of in a normal manner.

Warranty

Audio Research Corporation products are covered by a 3-Year Limited Warranty or a 90-Day Limited Warranty (vacuum tubes). This Limited Warranty initiates from the date of purchase, and is limited to the original purchaser, or in the case of demonstration equipment, limited to the balance of warranty remaining after original shipment to the retailer or importer.

In the United States, the specific terms, conditions and remedies for fulfillment of this Limited Warranty are listed on the warranty card accompanying the product in its shipping carton. The warranty terms are also available on the internet at www.audioresearch.com/en-us/company/warranty-statement. Outside the United States, the authorized importing retailer or distributor has accepted the responsibility for warranty of Audio Research products sold by them.

The specific terms and remedies for fulfillment of the Limited Warranty may vary from country to country. Warranty service should normally be obtained from the importing retailer or distributor from whom the product was purchased.

In the unlikely event that technical service beyond the ability of the importer is required, Audio Research will fulfill the terms and conditions of the Limited Warranty. Such product must be returned at the purchaser's expense to the Audio Research factory, along with a photocopy of the dated purchase receipt for the product, a written description of the problem(s) encountered, and any information necessary for return shipment. The cost of return shipment is the responsibility of the purchaser.

Specifications

Frequency Response:
Line: ±0.3dB 2Hz to 80kHz; : -3dB 0.8Hz to 220kHz
Phono: ±0.1dB of RIAA 10Hz to 20kHz, ±0.4dB 5Hz to 80kHz
Headphone: ±0.05dB 20Hz to 20kHz; : -3dB 0.8Hz to 220kHz

THD+N @ 1kHz:
Line: <0.002% at 2V RMS, Bal output
Phono: <0.005% at 3V RMS output, to Record output
Headphone: <0.009% at 1V RMS output

Gain @ 1kHz:
Line: 13.8 dB, Processor: 0dB
Phono: 58dB @ 1kHz to Record output
Headphone: 11.3dB

Noise (A-weighted):
Line: <-101dBV volume at max.
Phono: <-77dBV to Record output
Headphone: <-88dBV volume at max.

Channel Separation @ 1kHz:
Line: > 75dB Balanced output
Phono: >70dB to Record output
Headphone: >60dB

Signal to Noise Ratio @ 1kHz, A-weighted:
Line: >125dB Balanced output
Phono: >94dB to Record output
Headphone: >110dB

Input Impedance: 150kΩ Balanced, 75kΩ SE; Phono impedance programmable (100, 200, 500, 1000 or 47kΩ w/200pF unbalanced)

Output Impedance @ 1kHz: 500Ω Balanced, 250Ω SE; <0.05Ω Headphone SE.

Maximum Input:
Line: 12V RMS Balanced, 6.0V RMS SE.
Phono: 11mV RMS at 1KHz.

Rated Output:
Line: 2V RMS (1V RMS SE) into 200kΩ balanced load (maximum balanced output capability is 15V RMS at less than 0.5% THD+N at 1KHz.)
Phono: 0.5V RMS into 200k load, Max output same as Line stage.
Headphone: 6V RMS maximum into 30Ω to 300Ω load.

Controls:
Volume, Input Selector. 5 Push Buttons: Power, Mute, SPKR Off, Mono, Menu. Rear: RS-232 control, Remote IR input & Remote Trigger out.

Power Supplies: Electronically regulated low and high voltage supplies. Automatic 45 sec. warm-up & brown-out mute. Line regulation better than .01%.

Tube Complement: (6) 6H30P dual triodes.

Power Requirements: 100-125VAC 60HZ (200-250VAC 50/60Hz) 105 Watts. Standby: 1.5 Watts.

Dimensions:

width	19" (483 mm)
height	7 ¾" (197 mm)
depth	17 ¼" (438 mm)

Weight: 25 lbs. (11.3 kg)

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Specifications subject to change without notice.