



**Royale SE2**  
**Single-Ended Triode Integrated Amplifier**

**INSTRUCTIONS FOR OPERATION**  
**PLEASE READ BEFORE PLUGGING IN THE UNIT**

Welcome!

The Wright Audio Integrated Amplifiers incorporate advanced circuit characteristics and parts, which have chosen based on sonic quality and reliability.

Please take a few moments to read this manual. Doing so will enable you to thoroughly enjoy your new amplifier's sonic quality and fully utilize its versatility. First, a few cautions. Most are common sense, but are here as reminders. These apply to all tube and most solid-state amplifiers and are not specific only to your Wright Audio Amplifier.

1. Never operate the amplifier unless speakers are attached to its outputs.
2. Do not attempt to connect a subwoofer crossover / amplifier to the speaker terminals. Do not attach the main speakers to a subwoofer crossover plate which is marked 'Speaker Terminals'.
3. Never switch or disconnect input cables while the amplifier is on AND the volume turned up. Doing so may damage the output tubes and your speakers.
4. Any modifications to the amplifier's circuitry or operation with other than Wright Audio recommended tube types voids the warranty.
5. Tubes must be replaced at the end of their useful listening life, which is about 2000 hours, or approximately every 2 to 3 years of 'average' use. Operation past this point increases the risk of complete tube and amplifier failure. See our website for suitable replacement tubes.
6. The tubes get hot in normal operation. Touching one can result in a minor burn.
7. Do not attempt to change or remove a tube while the amplifier is on.
8. This amplifier utilizes a vacuum tube rectifier, the GZ34 / 5AR4. Whenever the amplifier has been turned off, wait at least 5 minutes before turning the amplifier on again to allow it to cool. Not doing so stresses the tube.
9. Always install tubes of the identical numbers as shown on the enclosed sheet, on the amplifier's top surface or on the sticker on the amplifier's bottom plate. Inserting ANY other tube number will cause unsatisfactory operation and will probably damage the amplifier. Tube numbers are always shown on the tube and tube box.
10. Do not open the bottom cover of the amplifier. Lethal voltages exist within, even when the power cord is disconnected from the socket. Preferably, it should be returned to Wright Audio if there is a malfunction.
11. Connect the unit to an electrical outlet providing 50 to 60 cycles AC and the voltage as marked.

## INSTALLATION

1. Position the amplifier so that children or pets can not inadvertently touch the tubes.
2. Locate the amplifier where there is adequate ventilation – at least 5 inches of space above it.
3. To minimize the chance of hum, place it away from other units' power transformers and motors.
4. Be sure the amplifier's power switch is in the 'Off ' position and insert the tubes as marked by numbers on the tubes, and on the back of the amplifier. Take care to align the 'key' at the base of each tube with the socket 'key'. With the miniature tubes, a gap exists in the pins which indicates the correct alignment. Be sure to press the tubes gently, but firmly all the way down into the tube sockets. For the larger tubes, grasp them at the base, not the glass portion.

**CAUTION: Do not 'rock' the large octal base tubes back and forth to insert them in the sockets. Doing so may break the tubes' center post key. Likewise, do not rock the tubes when removing them.**

**Due to manufacturing tolerances on both the tube and the socket, it may be possible to incorrectly rotate and insert the tube in the socket. Check VISUALLY to be sure the ridge key on the tube post aligns with the cutout ridge on the tube socket before inserting.**

5. Insert the appropriate RCA plugs to the amplifier inputs. Make sure the plugs are fully inserted into the jacks with the outer skirt of the plug tight around the socket.
6. When connecting the speakers, be sure to observe the POLARITY of the connection. This amplifier reverses absolute polarity. Because of this, you may connect the BLACK amplifier terminal to the RED speaker terminal and the RED amplifier terminal to the BLACK speaker terminal. Be sure to do the same connection for both speakers.

### LINE INPUTS

The 3 source inputs are all electrically identical, are interchangeable and compatible with all standard line-level inputs.

A record turntable will require a separate preamplifier such as the Wright Audio PH-2 with its Power Supply.

### PREAMPLIFIER OUTPUT / POWER AMPLIFIER SECTION INPUT

This integrated amplifier provides a stereo, low-impedance preamplifier output with a variable level control and a power amplifier section input for the primary purpose of biamplication using an external electronic crossover or connecting a subwoofer amplifier / speaker.

For use with separate self-powered subwoofers, the preamplifier's output is connected to the **line** input of the subwoofer crossover. For use with a single subwoofer, connect a 'Y' adapter at the preamplifier's left and right outputs to sum the stereo channels. Alternately, many single subwoofer systems sum the left and right channels at the subwoofer input. In this case, run a stereo left /right pair of shielded cables to the subwoofer unit.

**Do not connect the subwoofer amplifier to the Royale's speaker terminals as this will provide poor bass and possibly damage the amplifier.**

The initial volume level is set on the subwoofer unit listening to the system with the Bass Control on the amplifier set at about the 12 o'clock position. The bass volume on the subwoofer unit should be set slightly less or at the middle setting with a variety of program sources. When greater bass is preferred, such as when listening at overall lower volumes, the Bass Control can be set higher to compensate for the lack of bass in the program or the loss of sensitivity to bass which is a characteristic of the ear at low listening levels.

## **BI OR TRI-AMPLIFICATION**

The 'Direct-External' switch on the amplifier's top surface is at the power amplifier's section input and is normally kept in the 'Direct' position which provides the signal path from the internal preamplifier.

However, the Royale SE2 Integrated Amplifier may be used for even greater performance in a bi-, or preferably triamplification system using an external dedicated crossover made by other companies.

In this instance, the crossover's input is connected to the Preamplifier Output and the Bass Level Control on the amplifier is turned fully clockwise. The crossover's midrange/treble or treble only output can be connected to the Royale SE2 integrated amplifier's **power amplifier input**. With this connection, the Royale's 'Direct-External' switch is set to the 'External' position.

In a tri-amplified system, the Royale SE2 Integrated Amplifier power amplifier section would power the speaker system's tweeter, the Royale SE Power Amplifier would power the midrange and probably a transistor power amplifier would power the bass driver.

Tonal balance can now be provided via the crossover's volume level controls for the tweeter, midrange and bass speaker drivers (in a tri-amplified system) provided the speaker system has provision for directly connecting its drivers to the respective power amplifier's output bypassing the speaker system's internal passive crossover.

This arrangement provides maximum power transfer from the amplifier directly to the drivers for maximum efficiency, best sound and most effective crossover slopes. This arrangement also makes practical the use of 2 or more high quality, but lower output single-ended, triode connected amplifiers as the ideal solution for the ultimate stereo system. It is recommended that some sort of passive protection be provided to a tweeter when so connected in a tri-amplified system.

## **GENERAL OPERATING NOTES AND MAINTENANCE**

When new, your unit will require 2 or 3 days of operation for about 2 hours per day before it 'breaks in' and begins to sound its best. It will continue to improve during the next few weeks of operation.

The small controls beneath the Volume Control adjust the individual Left and Right Channel levels. Normally, they are kept fully clockwise where they are nearly out of the signal path. Reducing the volume of one channel or the other will adjust the volume balance between the channels. Turning both counterclockwise will adjust for overly high-output sources and / or extremely efficient speakers or listening in a small room close to the speakers.

Operate your Wright Audi amplifier only when you are actively listening to it. Unlike solid-state equipment, Wright Audi amplifiers reach their optimum listening quality only in about 10 minutes, and it is simply a waste of power and tube life to leave the amplifier on continuously.

## **TROUBLESHOOTING**

The unit has been designed to be as free from trouble as possible. However, a couple conditions can occur which will affect the amplifier's operation.

### **TUBE 'GLOWING' OR FUSE FAILURE**

If either of the large output tube plates (the grey, chimney-shaped structure inside the tube) glows a dull to bright red color soon after warmup or suddenly during operation, it is probable that the tube is defective. Tube substitution should be tried. DO NOT continue to operate the amplifier with a defective tube, as other parts will be damaged. If tube substitution does not solve the problem, refer servicing to Wright Audio.

The amplifier is provided with output tube cathode TEST jacks placed in close proximity of the tube being measured and a convenient GROUND jack located behind the GZ34 / 5AR4 tube. A DC voltmeter may be used to measure the individual tube's cathode voltage. A reading of positive 26 to 36 volts is considered normal for EL34 and KT77 tubes and the tube must be replaced if the reading falls outside these parameters.

### **NOISE**

Any noise or hum encountered during the life of the amplifier will normally be traced to dirty or otherwise poor connections at the input / output jacks, a poor tube pin-to-socket connection or a faulty tube.

The best remedy is to apply isopropyl alcohol to a cotton swab which can be used to clean the connection. Do not use spray-type contact cleaners on the tube sockets or around the connections at the rear of the amplifier as this may damage the finish or parts.

Liberal application of cleaner to the tube pins which are then inserted in the tube sockets usually cures any noise original from this source. The application may need to be repeated for satisfactory results. Do not insert anything into the tube sockets except the tubes.

Noise originating from operation of the controls indicates the controls or switches are dirty or worn. Contact Wright Audio.

### **IN CASE OF A PROBLEM OR QUESTION**

Your continued satisfaction with our products is extremely important to us. We will be happy to answer your questions pertinent to the installation and operation of your unit. If the problem cannot be resolved through our combined efforts, we may wish to authorize the return of your unit to us.

UNDER NO CIRCUMSTANCES SHOULD YOUR UNIT BE SHIPPED TO WRIGHT AUDIO WITHOUT AUTHORIZATION OR WITHOUT THE ORIGINAL PACKING. An attempted delivery to us without a Return Authorization Number will be refused.

Ship PREPAID via UPS or FEDEX only. Be sure to INSURE the product for the full replacement cost. Collect shipments cannot be accepted.

**CONTACT INFORMATION AT THE WEBSITE**  
**[WWW.WRIGHTAUDIO.US](http://WWW.WRIGHTAUDIO.US)**