

Wright Audio™  
*Royale SE* Power Amplifier  
INSTRUCTIONS FOR OPERATION

Welcome!

Your Wright Audio™ Amplifier incorporates advanced characteristics which have been chosen based on sonic quality and reliability. With regular tube changes and other rare maintenance, your amplifier will provide excellent sound indefinitely.

Please take a few moments to read these instructions. Doing so will enable you to thoroughly enjoy your new amplifier's sonic quality, fully utilize its versatility and maintain a safe and long life for your component.

First a few cautions. Most are common sense, but are here as reminders. These cautions apply to all tube and most solid-state amplifiers as well and are not specific to your Wright Audio amplifier.

1. Never operate your amplifier without speakers attached to its outputs. Doing so may destroy the output tubes and possibly the expensive output transformers. The warranty for both the amplifier and tubes are void if operated in this manner.
2. Never disconnect or switch the input cables while the amplifier is on. Doing so may damage your speakers.
3. Any modifications to the amplifier's circuitry or the use of tube types not listed voids the warranty.
4. Tubes must be replaced at the end of their useful listening life, approximately 2000 hours or every 2 to 3 years of 'average' use for the KT77 type and about 6000 hours for the ECC88 / 6N1P and GZ34 / 5AR4 tubes. Operation past this point results in poor sound and increases the chance of catastrophic failure of the tube and possible damage to the amplifier.
5. The tubes get HOT in normal operation. Touching them can result in a minor burn. Keep the unit away from an area where children or pets may come in contact with the amplifier.
6. Always install tubes of the identical numbers as shown on the amplifier's top, back or bottom plate. Inserting any other tube number will likely damage the amplifier and / or tube. Contact Wright Audio if there is any question regarding correct tube type.
7. IMPORTANT - U.S. units have been provided with a 3-prong grounding plug. If a significant hum is heard through the speaker and if a preamplifier or other unit is being used also with a 3-prong grounding plug, a "3 to 2 adapter" should be used on the power amplifier to avoid a 'ground loop' from causing the hum. In any case, at least ONE component MUST be grounded through a 3-prong plug for proper operation and for personal safety. Normally the grounding should be done at the preamplifier.
8. Connect the unit to an electrical outlet provided 50 / 60 cycles and the voltage as printed on the amplifier. Any other voltage will void the warranty.
9. Do not open the covers of the amplifier. Lethal voltages may exist within, **even when the power cord is disconnected from the socket**. Only a qualified service technician familiar with vacuum tube technology must service your amplifier. It should be returned to Wright Audio if there is a malfunction.
10. The unit must not be exposed to excessive moisture. Never use more than a soft cloth, lightly moistened with water to clean the unit. Never use any sort of solvent. Always unplug the amplifier from the AC socket before cleaning.

## 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' transformers or motors.
4. With the amplifier's power switch in the 'Off' position, insert the tubes as marked by the numbers on the tubes, and on the top, back or bottom of the amplifier. Take care to align the 'key' at the base of the 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 the tube at the base, not the glass portion.

**CAUTION: It is possible some manufacturer's KT77 / EL34 and 5AR4 types can still be inserted even if the key is not aligned properly. Make sure the key is aligned by visual inspection. Also, do not 'rock' these tubes back and forth to insert them. Doing so can break off the key post entirely, requiring service of the amplifier.**

5. Insert the appropriate RCA plugs into the input jacks. Make sure the plugs are fully inserted into the jacks with the outer skirt of the plug tight around the socket. The input impedance is a high 270K ohms, making it very easy to drive.
6. When connecting the speakers, be sure to observe the correct POLARITY of the connection, with the RED connected to the RED or plus marking on the speaker and the BLACK connected to the BLACK or minus marking on the speaker. This amplifier does not reverse polarity.

## BIAMPLIFICATION OR TRIAMPLIFICATION USE

The Royale SE Power Amplifier was 'voiced' to sound best with the Wright Audio Oasis Preamplifier for even greater performance in a bi-, or preferably tri-amplification system using an external crossover.

Tonal balance can now be provided via the crossover's volume level controls for the tweeter, midrange and bass speaker drivers 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 type 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 4 or 5 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 first few weeks of operation.

Operate your Wright Audio amplifier only when you are actively listening to it. Unlike solid-state equipment, Wright Audio amplifiers reach their optimum listening quality only in about 15 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 28 to 36 DC volts is considered normal for KT77 or E34L tubes and the tube must be replaced if the reading falls outside these parameters. If the reading is more than 50 volts, the cathode bypass capacitor must also be changed and this is best performed by someone familiar with tube electronics or by Wright Audio. However, it will be likely that the AC fuse located on the back panel will have failed before the 50+volt reading will have been reached.

Please note that most of the parts in any Wright Audio product are typically over-rated up to twice of their normal operating parameters and parts failure outside of tube replacement is rare.

### **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, faulty tubes, or poor tube pin-to-socket connection.

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.

## **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.

For shipping within the U.S., 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:  
WWW.WRIGHTAUDIO.US**