MODEL 1 STEREO AMPLIFIER

OWNER'S MANUAL

TABLE OF CONTENTS

Introduction

Congratulations on your purchase of the Jeff Rowland Design Group Model 1 stereo amplifier.

Please take a few moments to read this owners manual. Contrary to popular belief, there is actually quite a bit of useful information in an owners manual. The Model 1 offers tremendous interconnection flexibility regardless of the preamp used. A thorough understanding of your amplifier now can save you a lot of anxiety later.

Features

- Lack of overall or nested negative feedback eliminates time domain distortion.

- Proprietary distortion canceling techniques minimize amplitude related distortions.

- Each transistor individually tested and matched for optimum operating characteristics.

- Constant output impedance is maintained over the entire audio range, allowing for universal compatibility with associated equipment.

- The large number of high-speed bipolar output transistors provides uncompromising reliability and eliminates the need for electronic protection circuitry.

- A single voltage amplification stage utilizes field effect transistors (operating in transconductance mode), which increases low-level signal recognition.

- The absence of capacitors, inductors, fuses and protection circuitry throughout the signal path eliminates the adverse effects of these devices.

- A specially designed toroidal power transformer is supported by the substantial output stage capability.

- All critical circuitry is encapsulated in a thermally-conductive epoxy to ensure excellent thermal stability, mechanical integrity and to facilitate ease of service.

Unpacking Instructions

In the shipping crate you will find:

--AC Power Cord
--Various Fuses
--XLR Shorting Plugs
--Performance Certificate
--Warranty Card **(This form must be completed and returned to JEFF ROWLAND DESIGN GROUP [or its authorized distributor if outside the U.S.A.] within 14**

days of purchase. Not only will your amplifier be registered, but you will, in the future, be informed of new products and services.

We strongly suggest that you save all packing materials

The amp can be lifted out of its crate while still wrapped in the plastic bag and surrounded by the protective foam.

Installation

Locate the amplifier as close as possible to its final installation point. Allow access to the back panel for making connections. All Jeff Rowland Design Group products are convection cooled, eliminating the need for a fan. When operating, the amp should have at least 2 inches of space on all sides. It is acceptable to stack the amplifiers only if fresh air is allowed to circulate around them.

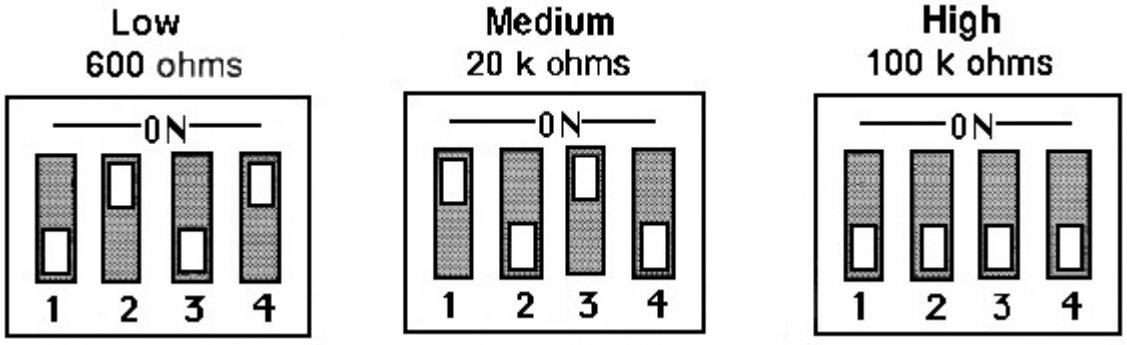
When the amp is in position, the power cord should be inserted first at the inlet on the amplifier back panel, then connected to an appropriate power source. The amplifier is equipped with a "stand-by" power switch, located and identified on the rear panel, as well as an illuminated power push button switch on the front panel. The stand-by power switch should be turned on initially after plugging in the AC power cord. The amplifier will now be in stand-by mode, indicated by a dimly lit front panel button. The rear panel switch should be left on at all times, maintaining stable operating parameters and thereby improving performance, reliability and longevity. Power consumption in stand-by mode is less than 25 watts, providing low-cost operation.

Pressing the dimly lit push button will switch the amplifier on for normal operation. Note that the lamp intensity will increase and a faint "click" will be heard. All subsequent on-off cycles should be initiated by the front panel switch.

If the front panel switch does not light, the amplifier does not power up or a fuse blows, disconnect AC power, refer to the troubleshooting section of this manual or contact your dealer.

Input Impedance Selection

Your amplifier is provided with user-adjustable input impedance. A four (4) position D.I.P. switch for each channel is located and clearly marked on the back panel. Jeff Rowland Design Group has chosen 3 values of input impedance to cover the majority of applications. If you want to change your input impedance, please turn off the front panel power before doing so. Selecting from the switch codes shown below will provide the specific input impedance desired by the user.



The "low" setting is for use with most direct-coupled solid-state preamplifiers such as those made by Jeff Rowland Design Group; the "medium" setting is for use with most solid-state, hybrid and some tube preamplifiers; the "high" setting is for use with most tube preamplifiers. We have provided these different settings so that you may find which one provides the best sonic results in your system. Your amp comes set from the factory at the "medium" (20 k ohms) adjustment.

Adjustable Gain

The overall gain structure of your Model 1 amplifier can be adjusted to one of four different values, 20, 26, 29.5 or 32 dB. (Your amp comes set from the factory at the 26 dB adjustment.) The Model 5 can thus be used with dissimilar-gain preamplifiers, as well as with a wide variety of analog and digital sources (since many digital sources [compact disc players, digital to analog converters] have high output voltages relative to tuners, tape decks, etc.). This feature allows the volume control of your preamp to be used in its optimum position. It also permits you to tailor the gain structure for use with high or low-efficiency speakers.

The gain switches are located on the underside of the plug-in modules and should only be adjusted by your Jeff Rowland Design Group dealer. Incorrect installation of these modules will result in damage to the amplifier circuitry which cannot be covered under warranty.

Signal Connections

The amplifiers from JEFF ROWLAND DESIGN GROUP offer unprecedented compatibility with associated equipment. In all cases **turn the front panel power off before connecting or disconnecting signal wires. "Hot patching" is not recommended.**

A series of descriptions follows to explain the hookup schemes most commonly utilized in home stereo applications. For a more thorough understanding of the terms used in this section, please read the enclosed paper on differential mode technology.

The back panel of the amplifier is clearly marked with the following:
- paralleled right and left channel outputs
- remote power switch connector
- right and left channel inputs (single-ended non-inverting, single-ended inverting and differential inputs)
- right and left channel input impedance adjust

- AC power switch
- AC power connector
- AC line fuse

Stereo operation with a single-ended output preamplifier

For standard operation, insert the interconnect cables from your preamp to the non-inverting RCA inputs. Insert shorting plugs into each of the inverting RCA inputs. If you desire inverted operation, reverse the above procedure. Either of the two paralleled outputs can be used, or all four if you are bi-wiring your speakers.

Stereo operation with a balanced output preamplifier

Insert the output of your preamplifier into either the differential XLR input or both the single-ended inverting and non-inverting RCA inputs. You can then utilize either of the two paralleled outputs, or all four if you are bi-wiring your speakers.

Bridged-mono operation with a single-ended output preamplifier

The following is the procedure for each amplifier: Insert the interconnect from your preamp into the right channel non-inverting input. There is a small switch, labeled "BRIDGE," located between the right channel XLR input and the AC standby switch; flip this switch up, into the "ON" position. Insert one of the XLR shorting plugs into the right channel XLR input. Connect the "hot" conductor of your speaker cable to one of the right channel outputs; connect the "ground" conductor of the cable to one of the left channel outputs.

Bridged-mono operation with a balanced output preamplifier

The following is the procedure for each amplifier: Insert the output of your preamplifier into the right channel differential XLR input. There is a small switch, labeled "BRIDGE," located between the right channel XLR input and the AC standby switch; flip this switch up, into the "ON" position. Connect the "hot" conductor of your speaker cable to one of the right channel outputs; connect the "ground" conductor of the cable to one of the left channel outputs. (**NOTE**: Do not use the XLR shorting plugs with this application.)

Basic Troubleshooting

If your amplifier does not turn on:

1. Make sure the power cord is connected to both the inlet at the back of the amp and an appropriate AC power source.

2. Check the power supply fuses located next to the AC inlet; there are two fuses-one is a spare.

If your amplifier shuts down after being turned on, with or without the presence of signal:

1. Check the rail fuses; on the Model 1, these are located on the inside of the amp adjacent to the encapsulated transformer. A fuse can often look good even if it is actually bad. If possible, check the fuses with a meter.

2. If the fuses are good, disconnect the inputs from the amp and see if it will power up again. Your amplifier will generally only shut down if it senses DC, thus protecting your speakers. Certain associated equipment can occasionally pass DC.

If the above suggestions do not work or you are having other problems, please contact your Jeff Rowland Design Group dealer.

Technical Specifications

Model 1

Output power	**60 watts RMS continuous, 8 ohms** **120 watts RMS continuous, 4 ohms** **215 watts RMS continuous, 2 ohms**
Power Bandwidth	**0.3 Hz to 300 kHz, -3 dB**
Slew Rate	**70 volts per microsecond**
THD and Noise	**Less than .025%, 1 kHz, 8 ohms, 20 watts** **Less than .035%, 1 kHz, 8 ohms, 60 watts**
Damping Factor	**Greater than 200, 20 Hz to 20 kHz, 8 ohms** **Greater than 85 100 kHz, 8 ohms**
Output Current	**22 amps peak, continuous** **55 amps peak, 0.1 ohm, 20 msec, 1 kHz**
Overall Gain	**Selectable: 20, 26, 29.5, 32 dB**
Sensitivity	**136 mV, 1 watt, 8 ohms**
Input Impedance	**Selectable: 100k, 20k, 600 ohms**
Common Mode Rejection Ratio	**Greater than 90 dB**