



JEFF ROWLAND
DESIGN GROUP



MODEL 301
NEW VERSION
SERIAL NUMBERS MA0072 - MA0161
MONO POWER AMPLIFIER

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Introduction

Welcome to the Jeff Rowland Design Group “family” and congratulations on your purchase of what is unquestionably one of the world's finest audio power amplifiers. **W**ith its combination of features such as numerous function control and interconnect possibilities, precision electronic circuitry, exceptional efficiency, and accurately machined chassis components throughout, your Model 301 Mono Power Amplifier will offer you many years of musically satisfying enjoyment. **P**lease take a few minutes to read the remainder of this Owner's Manual before proceeding with the installation of the amplifier. A thorough understanding of the operational features will allow you to gain the maximum performance and ease of use for which this amplifier was designed. **P**lease note that your Model 301 Mono Amplifier serial number begins with the letters “MA.” This number is recorded below and is also located on the rear panel of the chassis. Please include this number with any correspondence regarding your Model 301 Monaural Power Amplifier. It has been my joy to create an audio component of enduring value that reflects the higher ideals of musical and artistic expression. It is my hope that these qualities will enrich your experience of ownership.

Enjoy the music!

Jeff Rowland

President,

Jeff Rowland Design Group

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Product Features

- XLR input connectors for balanced system configuration.
- RCA input connectors for unbalanced system configurations.
- User selectable switching between balanced and unbalanced connections.
- Transformer coupled inputs provide universal compatibility with other components and eliminate ground loop noise and EMI.
- Transformer coupled outputs produce ideal amplifier-to-loudspeaker impedance, damping, and current matching.
- Single channel design provides maximum performance and channel separation.
- Parallel and series output configurations allow ideal matching and power transfer from amplifier to loudspeaker.
- Ultra-high efficiency output section generates high power output with very little heat.
- Fully-balanced circuit topology implemented from input to output.
- Power Factor correction in power supply reduces AC line harmonic noise pollution and increases AC line power utilization to 99%.
- Proprietary switch-mode power supply technology ensures consistent performance under all operating conditions.
- 12V remote ON/OFF remote power switching via 1/8" jack on rear panel.
- CE approved speaker output terminals require no tools for secure, low resistance connections.
- Standby power mode reduces warm-up time.
- Fail-safe operation provided by user-resettable thermal circuit breaker located on rear panel.
- Quiet, transient-free operation during power ON/OFF and input configuration switching.
- Selectable overall gain of 26 or 32 dB.
- Ultra-low resonance, structurally rigid chassis constructed of precision-machined aircraft grade 6061-T6 aluminum.
- 3-point self-leveling chassis support.

Package Contents



AC Power Cable



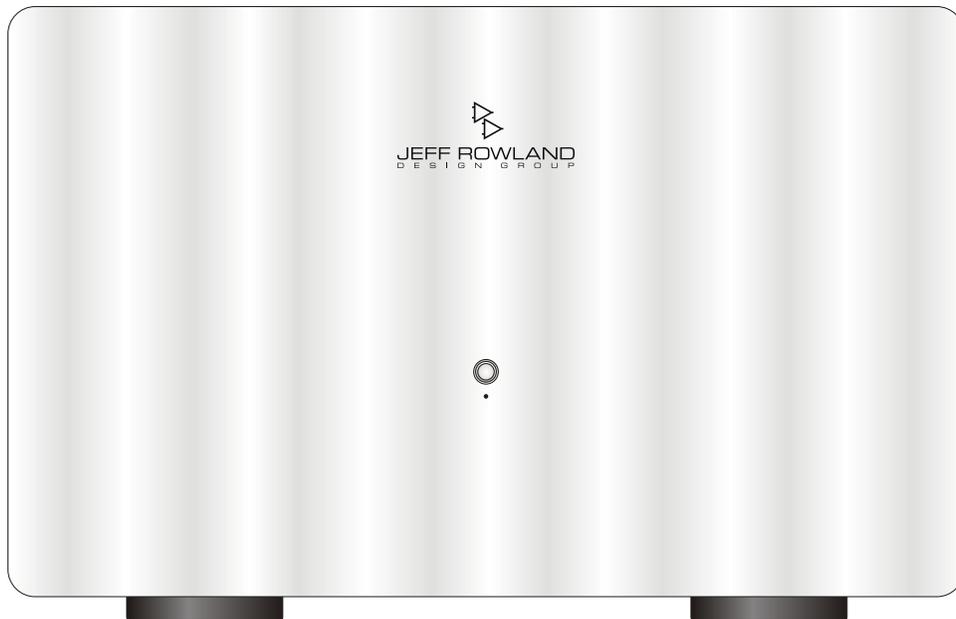
Compliant Isolation Pads



Warranty Card



Owner's Manual



Model 301 Mono Power Amplifier

Initial Inspection

Inspect the shipping container for damage. If the shipping container, packing material, amplifier, or accessories are damaged or missing, notify your dealer and the shipper (if a claim is to be made) immediately. *Note: Many shippers require notification and inspection within twenty-four hours of delivery to determine the nature of damages incurred.*

Your Model 301 Mono Power Amplifier has undergone extensive performance evaluations, listening tests, quality control inspections, and a minimum seventy-two hour burn-in period prior to shipment and should therefore be in perfect operating condition upon receipt. If the amplifier does not operate correctly, please notify your dealer immediately.

We strongly suggest that you save all packing materials. If the amplifier is ever returned to your dealer or Jeff Rowland Design Group, the original packing materials must be used for shipment to avoid damage. Neither Jeff Rowland Design Group nor the shipper can be held responsible for damages incurred during transit if the original factory packing is not used. All factory returns require that Jeff Rowland Design Group issue a Return Authorization (RA) number prior to shipment.

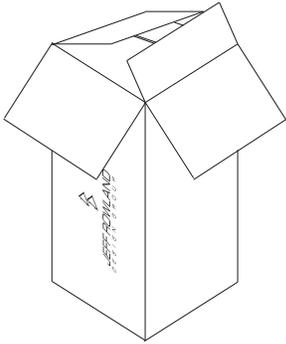
Contents

Ensure that all of the auxiliary components listed below are enclosed within the shipping carton and accessory box. Refer to the diagrams illustrated on the adjacent page and verify that the proper components are included.

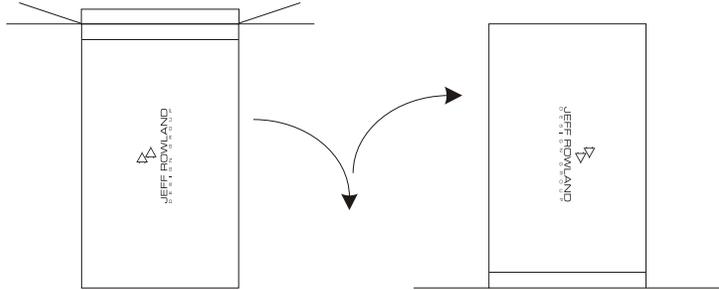
- 1 One (1) AC Power Cable
- 2 One (1) Warranty Card (In some countries, warranties are provided by the respective importer.)
- 4 One set of three (3) Compliant Isolation Pads
- 5 One (1) Owner's Manual
- 6 One (1) Model 301 Mono Power Amplifier

Unpacking the Amplifier

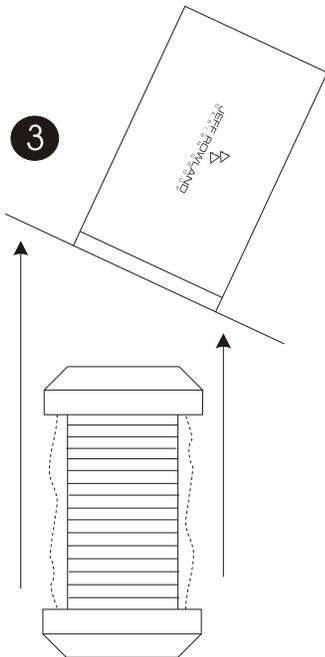
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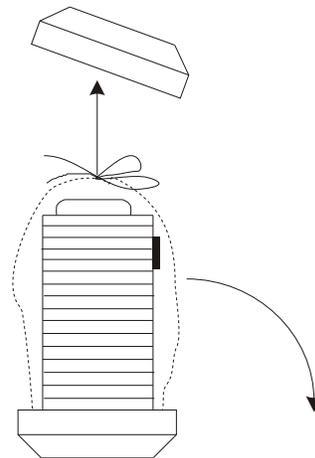
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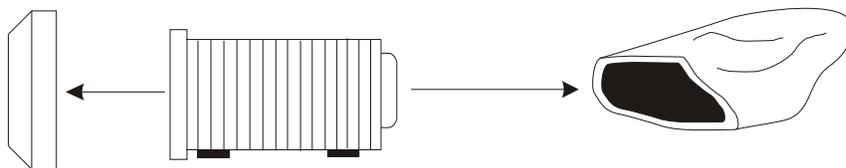
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Unpacking the Amplifier

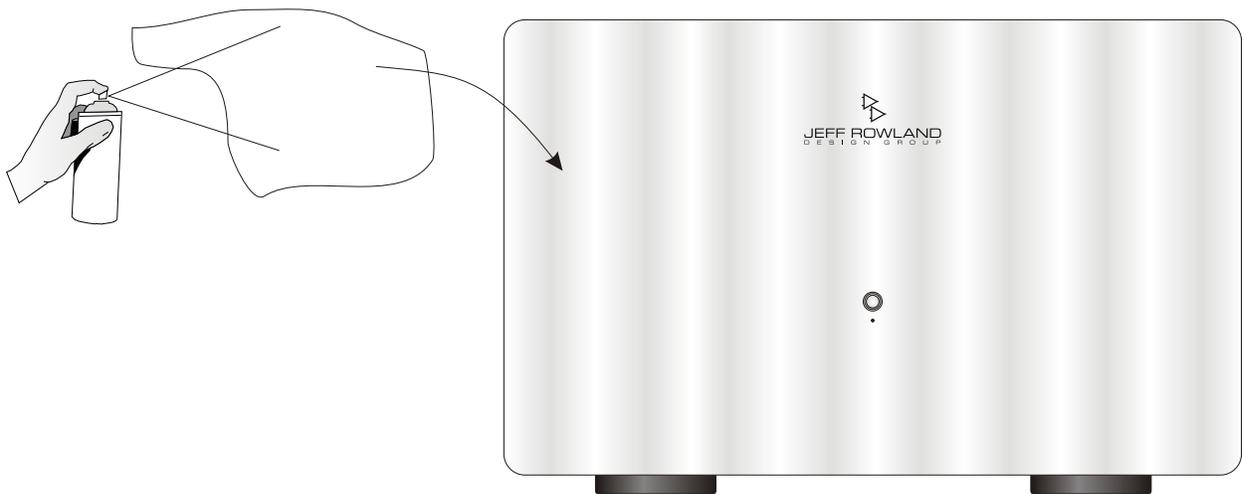
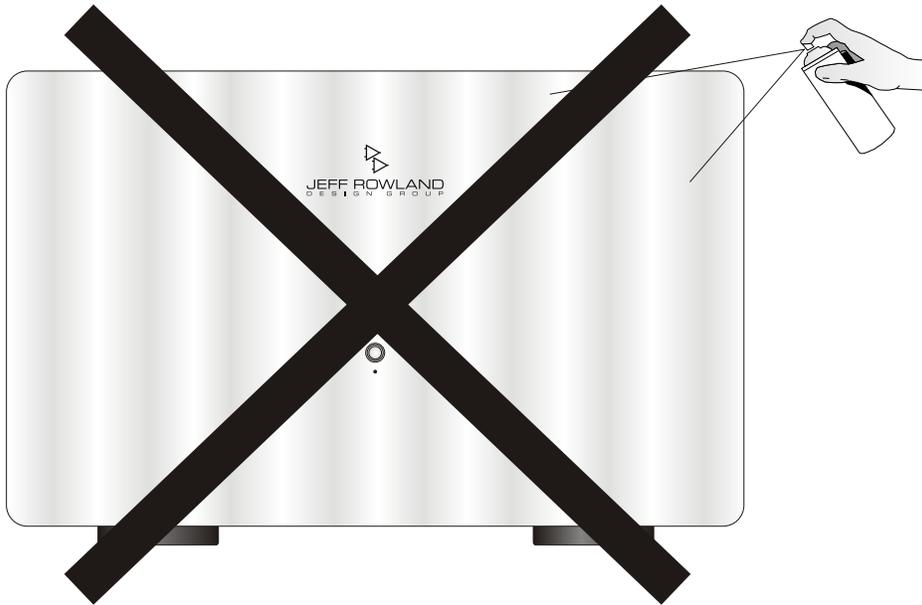
The Model 301 is a large and heavy amplifier. Due caution should be taken when unpacking and installing the amplifier to avoid injury or damage to the amplifier. The Model 301 should be unpacked by at *least* two people, however it is possible for one person to unpack the amplifier safely. There should be a portion of carpet or soft, padded cloth to stand the amplifier on when unpacking it from the shipping box.

To unpack the amplifier:

1. Stand the shipping box vertically and open one end of both the inner and outer box.
2. Pull all box flaps back and turn the carton so that it is standing face-down onto the open end.
3. Carefully lift both boxes up and off of the amplifier and packing material.
4. Remove the packing material cap from the upper end of the amplifier and untie the protective cloth bag. Pull the cloth bag back to expose the amplifier.
5. Lay the amplifier down on its feet. Remove the remaining packing cap and the cloth bag .

The amplifier is now ready for installation.

Amplifier Maintenance, Cleaning, and Protection



Maintenance and Cleaning

All Jeff Rowland Design Group products are designed to provide a lifetime of enjoyment and listening pleasure. The chassis is sealed to prevent dust from entering and the interior of the chassis should not need cleaning during the lifetime of the product. All internal circuitry is self-adjusting such that no adjustments or maintenance of any kind are necessary over the lifetime of the product. If the amplifier is ever in need of service, updating, or upgrading, it should only be returned to an authorized repair facility or technician for servicing.

The Model 301 Mono Power Amplifier is uniquely constructed from a number of precision machined aluminum subassemblies. The front panel of the unit is machined in a unique process that incorporates a diamond tipped cutting tool. This process was refined over many years to produce an artistic and attractive finish.

Because the surface is not finished in the typical fashion of most audio and video equipment, there are a few rules that must be kept in mind when cleaning the equipment.

- Please allow the front panel to cure for 6 months before attempting to clean it. This will prevent small scratches from marring the surface before the surface coating has had a chance to harden completely.
- The top cover, sides, and bottom cover can all be cleaned with a soft cotton cloth (such as an optical lens cleaning cloth or fine furniture polishing rag) dampened with plain water. Water should be applied directly to the cloth and not the chassis. If a mark has been left on the chassis, do not use any type of abrasive or chemical cleaner to remove the mark. A very mild plastic or glass cleaner that does not contain ammonia should be tried only as a last resort.
- Please contact the factory before trying any type of cleanser on the chassis other than water to clean the unit.
- The front panel of the unit should never be cleaned with anything other than a very soft cotton cloth and plain water or fine oil-based furniture polish. Because of the fine finish of the front panel, small scratches from the use of any other agent to clean the front panel will become very visible.

If you have any questions about the care or cleaning of your Model 301 power amplifier, please contact your dealer or the Jeff Rowland Design Group factory before attempting to clean the chassis. The use of a cleanser or abrasive to clean the chassis that has not been approved by the factory will almost certainly damage the finish and will not be covered under warranty.

Protection Systems

The Model 301 Mono Power Amplifier is equipped with active circuitry and thermal circuit breakers for protection against excessive AC mains voltage. However, since no protection circuitry or system can completely protect a product from every electrical hazard, certain precautions should be observed. In the event of severe voltage hazards such as lightning or when the amplifier will not be used for extended periods of time, the amplifier should be unplugged from the AC mains to avoid potential damage to the internal circuitry. All other audio/video system components should also be disconnected from AC mains power as hazardous voltages can travel throughout an interconnected system.

Amplifier Installation, Use, and Care

Locate the amplifier as close as possible to its final installation point. Allow access to the rear panel for making connections.

The Model 301 Mono Power Amplifier is extremely efficient and convection cooled, eliminating the need for fans or forced-air cooling. Multiple chassis can be stacked vertically, facilitating an upward flow of warm air currents throughout the vertical heatsink areas. This upward flow must not be blocked or recirculated around the chassis if proper cooling is to be maintained.

Typical installations allow the amplifier to be rigidly coupled to a support structure or floor via optional spiked coupling supports that are available separately from JRDG. In carpeted installations, these supports provide excellent anchoring from the amplifier chassis to the rigid floor or sub-floor below. If there is concern about damage to the structure or floor's finish, a coin can be placed beneath each spiked coupling support. In installations where the resonant properties of the supporting structure are poor or unknown, the amplifier chassis can be loosely coupled to the supporting structure via the supplied compliant isolation interface pads. This will help to attenuate the transfer of vibration or resonant energy from the support structure to the amplifier chassis.

For rack-mounted or custom applications, a rack-mountable faceplate can be ordered and manufactured by Jeff Rowland Design Group. Please contact your dealer or distributor with questions about custom rack-mountable faceplates and delivery times. **Note:** *Please keep in mind that the Model 301 is a very heavy amplifier and that additional support will be required from beneath the amplifier. The faceplate alone is not sufficient support for total weight of the amplifier!*

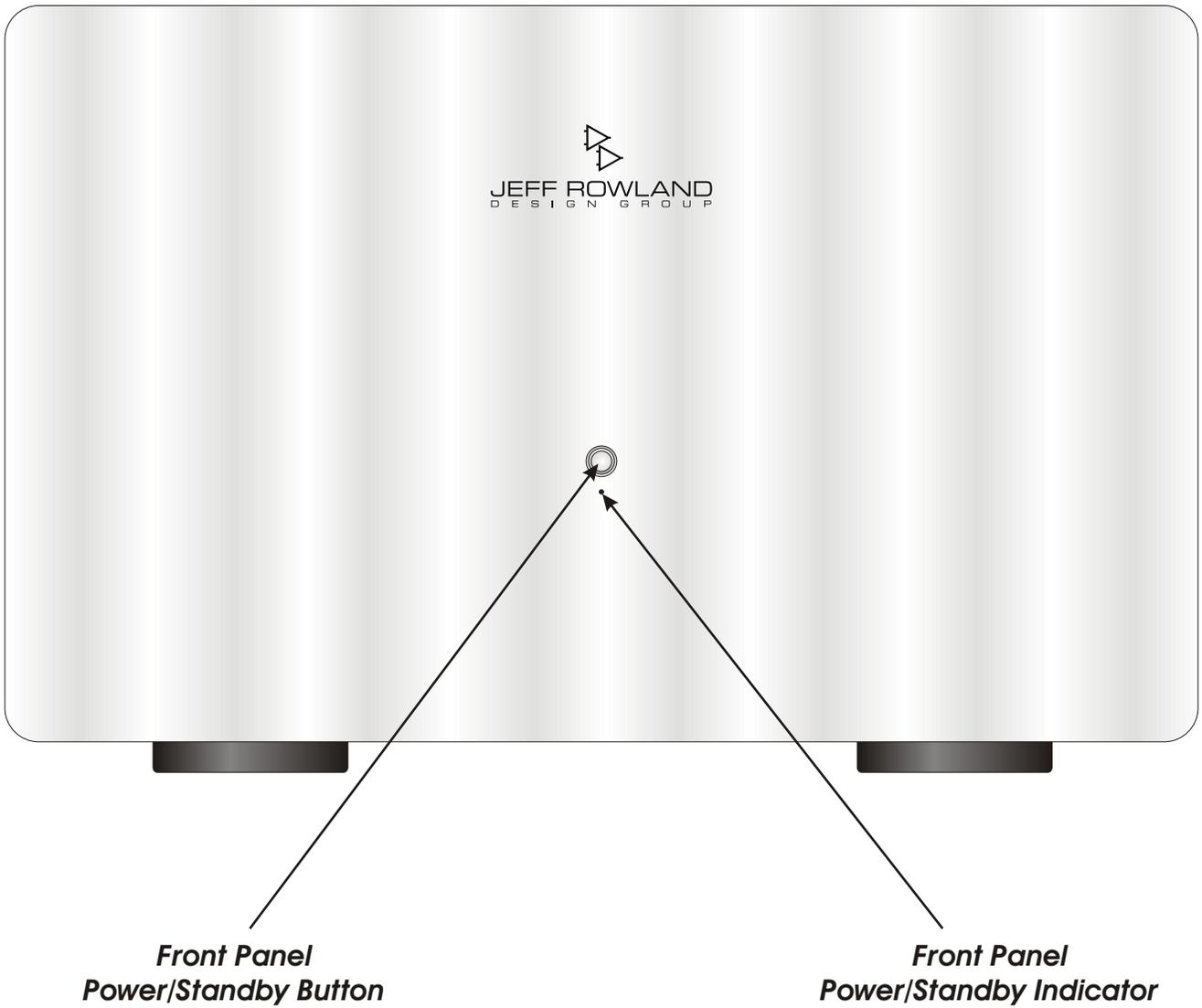
The Jeff Rowland Design Group Model 301 Mono Power Amplifier has been designed with comprehensive protection circuits that allow the amplifier to operate at the highest level of efficiency and performance in any normal operating situation. However, there are a few important use and care principles that must be kept in mind when operating the amplifier:

- Do not expose the amplifier to rain, moisture, or excessively damp conditions.
- Do not disconnect the amplifier from AC mains unless absolutely necessary and without first placing the amplifier in Standby mode.
- The Model 301 Mono Power Amplifier must not be modified in any way, other than according to official service bulletins from Jeff Rowland Design Group. Other wise, the factory warranty will be immediately voided.
- The Model 301 Mono Power Amplifier can be operated at a nominal 115 or 230 volts AC. The amplifier must be wired for the correct AC input voltage before operation or serious damage will result.
- To clean the Model 301 Mono Power Amplifier, use a soft cloth moistened with plain water. Never apply water, dusting sprays, solvents, abrasives, or cleaning fluids directly to the chassis!
- Be sure the amplifier is in STANDBY mode (front panel indicator light OFF) before connecting or disconnecting any loudspeaker or interconnect cables.

Amplifier Installation, Use, and Care (Cont.)

- When operating the Model 301, a properly grounded AC receptacle should be used. A potential shock hazard may result if the supplied 3-wire, grounded AC cable ground terminal is defeated or lifted or the unit is connected to a 2-wire ungrounded AC outlet.
- The output terminals or loudspeaker cables should ***never*** be shorted to each other or to ground. Shorting of the outputs will result in certain damage to the output section.
- The Model 301 is designed to perform optimally with no adjustments or maintenance. In the event of servicing, do not attempt to open the top cover of the amplifier and refer all service issues to qualified personnel. The voltages inside the Model 301 can be hazardous.

Amplifier Front Panel Functions and Indicators



Amplifier Front Panel Functions and Indicators

Before attempting any system interconnection, please familiarize yourself with the front panel control of the Model 301 Mono Power Amplifier. The descriptions below refer to the illustration on the adjacent page.

FRONT PANEL STANDBY/POWER BUTTON: Press this button to operate the amplifier. Press again to place the amplifier in Standby mode.

FRONT PANEL STANDBY/POWER INDICATOR: This small, blue light will illuminate when the amplifier is operational. When the light is not illuminated, all amplifier inputs are muted and internal circuitry reverts to power-saving (Standby) mode.

To avoid spurious noises and possible damage to the amplifier's internal circuitry, the amplifier should be switched to Standby mode when connecting or disconnecting any rear panel connections.

Note: All ON/OFF power switching should be initiated *ONLY* with this button. The amplifier should not be disconnected from AC power without first placing the amplifier in Standby mode. Avoid the use of switched AC power outlets to control or switch AC power to the amplifier.

Amplifier Rear Panel Over Connections



Amplifier Rear Panel Power Connections

Important: Please strictly follow the following steps outlined below in order before operating your Model 301 Mono Power Amplifier.

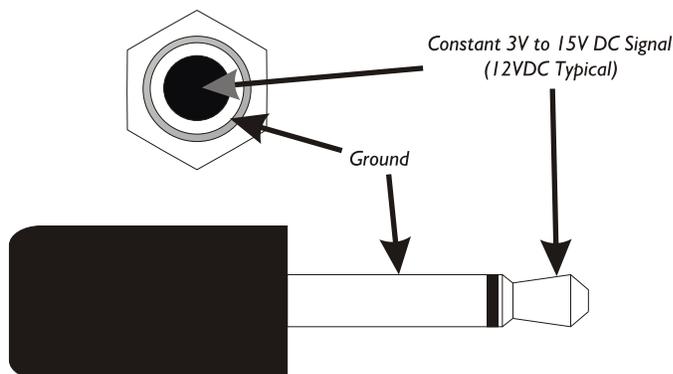
1. Verify that the VOLTS AC input identified on the rear panel near the AC input socket is the same as the AC mains voltage in your area. If the voltage does not match the AC mains voltage in your area, **DO NOT CONNECT THE AMPLIFIER TO AC POWER** and contact your dealer immediately.
2. Verify that the AC MAINS circuit breaker is closed (no white area visible on breaker).
3. Install the AC Power Cable between the amplifier and your AC mains outlet.
4. Connect the 12V Remote ON/OFF Mini-plug Connector (See Below).

Note: Due to the exceptionally low power consumption rating of the Model 301, it is recommended that the unit **not** be disconnected from AC mains unless the amplifier is to be moved or reinstalled in another location. It is recommended that the amplifier be placed in Standby mode rather than disconnected from the AC mains power when the amplifier is not in use.

The 12V REMOTE ON/OFF 1/8" (3.5 mm) mini-plug connector (4) is provided on the rear panel of the Model 301 for remotely switching the amplifier between Operational and Standby modes. When connected to another component with the proper circuitry, the amplifier standby function can be turned ON and OFF remotely in a custom installation, theater, or automated system setup. Connection requirements are illustrated below.

Please be aware that the remote feature simply places the amplifier in STANDBY mode and does not disconnect the unit from power or AC mains.

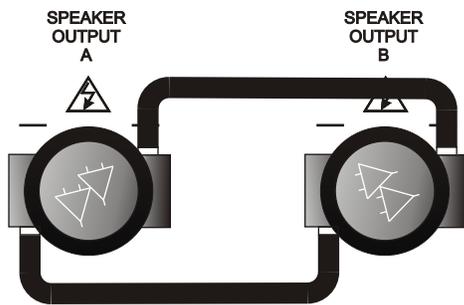
Please contact your dealer for further information about the use and configuration of this feature.



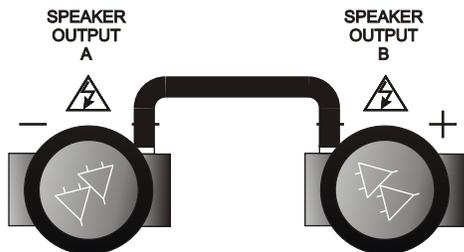
Detail of Mini-plug Connector

Parallel and Series Output Configuration

The Model 301 can be configured for the best possible interface with any reasonable loudspeaker load or design. Two configuration options are available: parallel and series. The parallel configuration will provide high current capability, while the series configuration will provide high voltage capability. In the event that you are unsure of the type or specifications of your loudspeaker system, it is highly recommended that you contact your dealer or the manufacturer of the loudspeaker prior to making any amplifier connections. This will allow you to be sure of the optimal connections prior to power being applied to the system. If you are still unsure of the proper output configuration, please contact your Jeff Rowland Design Group dealer.

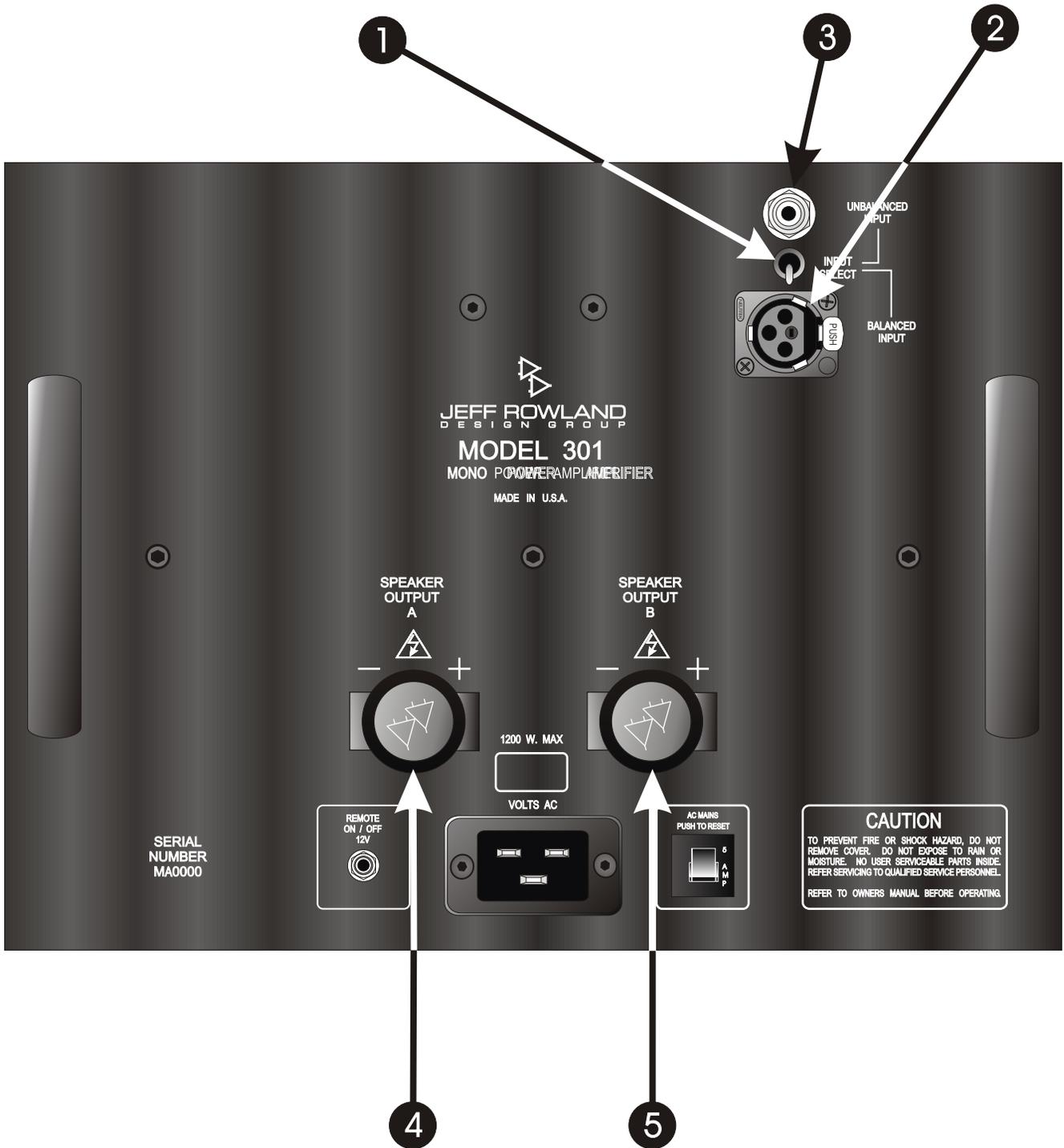


The parallel output configuration will provide superior current capability, low output impedance, and greater damping factor into low impedance loudspeaker loads. This configuration should be used with dynamic loudspeakers that have a nominal impedance rating from 2 ohms to 8 ohms, ribbon based loudspeakers, and select electrostatic or hybrid loudspeakers.



The series output configuration will provide superior voltage capability and high output impedance into high impedance loudspeaker loads. This configuration should be used with dynamic loudspeakers that have a nominal impedance rating of greater than 8 ohms, select subwoofer systems, and select electrostatic or hybrid loudspeakers.

Amplifier Rear Panel Signal Connections



Amplifier Rear Panel Signal Connections

The Model 301 Mono Power Amplifier offers unprecedented compatibility with associated audio components. When connecting or disconnecting speaker or interconnect cables, the amplifier must be placed in Standby mode (blue POWER INDICATOR LED on the front panel OFF).

If you are using balanced XLR interconnects from your preamplifier or source component, position the INPUT SELECT switch (1) to BALANCED INPUT. If you are using unbalanced RCA interconnects, position the INPUT SELECT switch to UNBALANCED INPUT.

Connect the corresponding interconnect cables to either the BALANCED INPUTS (2) or UNBALANCED INPUTS (3) on each channel. Both RCA and XLR inputs cannot be used for the same channel simultaneously. For example, an unbalanced output connection from a surround processor and a balanced output connection from a CD player cannot both be connected to the same channel at the same time.

A slight mechanical click may be heard when the balanced XLR interconnect cables are correctly installed and locked. The unlocking tab (located on the input connector and labeled "PUSH") must be pressed to disconnect the XLR interconnect cable from the amplifier.

Unscrew the knob that secures the speaker output connectors on SPEAKER OUTPUT A (4) or SPEAKER OUTPUT B (5), whichever is nearer to the loudspeaker, and pull the securing block out far enough to allow access to the binding posts. Install the positive (usually red) loudspeaker cable spade terminal to the positive (+) binding post and the negative spade terminal to the negative (-) binding post. Secure the loudspeaker connection by tightening the knob securely with your fingers.

The Model 301 will only accept spade terminations for loudspeaker cables. Banana plugs or bare wire connections cannot be used and must be reterminated with spade connections.

The Model 301 has two sets of output binding posts per amplifier. Both sets of binding posts are active with no difference in signal quality.

In the event of bi-wiring, one set of output binding posts can be used for the mid/high frequencies and one set for the low frequency connections. As the connections are the same, there is no specific set of binding posts that should be used for high or low frequencies.

 **Warning:** *Both positive and negative output terminals are electrically active with respect to chassis and/or system ground potential. Therefore, this amplifier cannot be used in certain loudspeaker switching configurations, such as those used in retail demonstrations. Failure to avoid these precautions may short the outputs to ground and can result in serious damage to the amplifier and will void the warranty.*

Internal Adjustments

Overall Gain

The overall gain of the Model 301 Mono Power Amplifier can be adjusted between 26 dB and 32 dB. The setting from the factory is 26 dB, which is adequate for the majority of applications, though some systems involving low efficiency loudspeakers may require the higher gain setting. There is no sonic difference between the two settings.

Because of the potentially dangerous voltages inside of the chassis, it is recommended that you contact your dealer for information regarding the overall gain setting adjustments.

Note: Do not attempt to disassemble the chassis of the amplifier and adjust the gain without explicit instructions from your dealer or Jeff Rowland Design Group.

Model 301 Mono Power Amplifier Specifications

Output Power:

Continuous RMS watts, all channels driven
@ 8 ohms
@ 4 ohms

<i>Parallel Mode</i>	<i>Series Mode</i>
600 watts.	1800 watts.
1200 watts.	N/A

Power Bandwidth:

5 Hz - 60 kHz, -3 dB.

Peak Output Current:

>90 Amps.

Dynamic Range:

120 dBA.

THD + Noise, 0.1W-500W/4 ohm:

Typically .006 @ 1kHz.

CCIF Intermodulation Distortion, 19/20 kHz:

<.002%.

Damping Factor @ 1kHz:

> 1000 @ 1Khz.

Overall Gain: (Balanced or Unbalanced)

Selectable Internal Jumper,
26 or 32 dB.

Input Impedance:

40k ohms.

Common Mode Rejection Ratio:

>90dB, 20 Hz - 20 kHz

Absolute Phase:

Non-inverting, Pin 3 Positive.

Inputs:

User Selectable,
4 x Balanced XLR
4 x Unbalanced RCA.

Outputs:

1 Pair Binding Posts per
Channel.

Power Consumption:

Standby Switch OFF
Standby Switch ON (idle)
Maximum

45 watts.
55 watts.
1200 watts.

Amplifier Weight:

102 lbs./43 kg.

Shipping Container Dimensions:

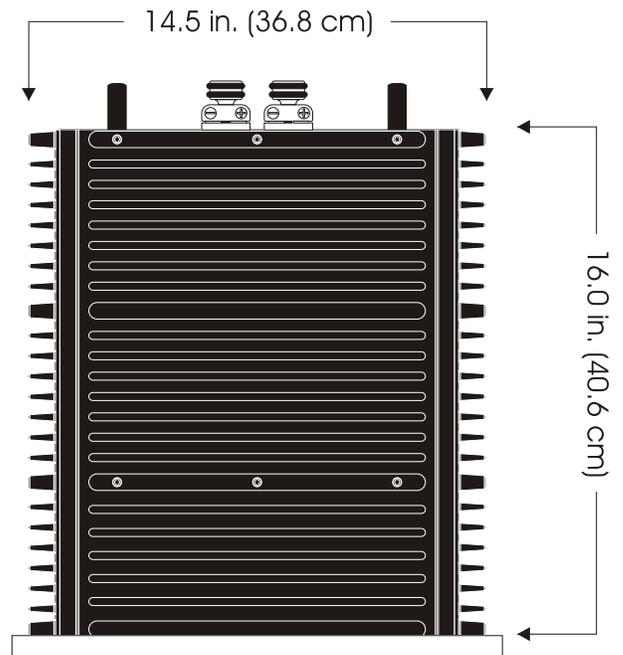
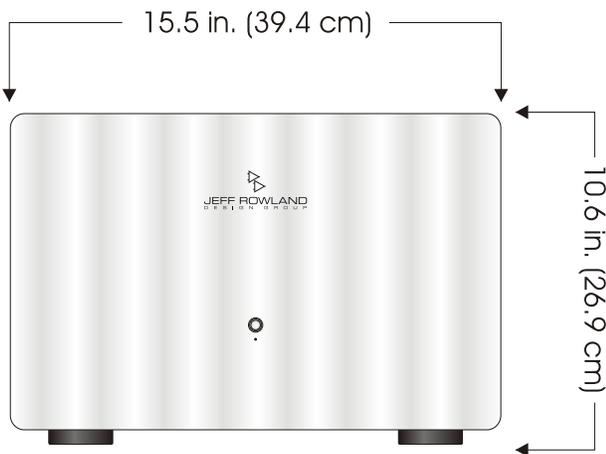
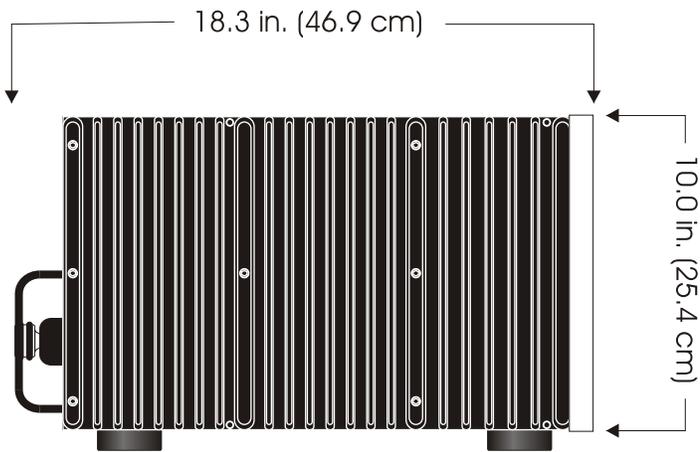
27" (L) x 21" (W) x 16" (H)/
68 cm (L) x 54 cm (W) x 41 cm.

Shipping Weight:

110 lbs./47 kg.

Dimensions

A summary of the amplifier chassis dimensions is indicated below.



Additional Information

If you have any additional questions regarding the installation or operation of the Model 301 Mono Power Amplifier, please contact your authorized Jeff Rowland Design Group dealer or check the Jeff Rowland Design Group web site at <http://www.jeffrowland.com>.

