



M O O N

W - 3

Stereo Power Amplifier



Owner's Manual

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**IMPORTANT: Please read this entire manual before using this product.
Installation and operating instructions inside.**

Congratulations!

Thank you for selecting the **MOON W-3** Stereo power amplifier as a part of your hi-fi reproduction system. This power amplifier has been designed to offer state-of-the-art high-end performance in an elegant package, while retaining all the sonic hallmarks on which Simaudio has made its reputation. We have spared no effort to ensure that it is one of among the finest two-channel amplifiers available. We have been building high-performance audio equipment for over 20 years, and the know-how gained through our cumulative experience is an important reason why **MOON** amplifiers are so musically satisfying.

The performance of your **W-3** will continue to improve during the first three weeks of use. This is the result of a “break-in” period required for the numerous high quality electronic parts used throughout this amplifier.

Please read this manual thoroughly to acquaint yourself with this product’s features prior to using it. We hope you enjoy listening to the **MOON W-3** Stereo power amplifier as much as the pride we have taken in creating this fine audio product. We understand the power and emotion of music and build our products with the goal of reproducing these elusive qualities.

Introduction

Your **MOON W-3** Stereo power amplifier incorporates many significant design features to achieve its “world class” level of performance. This is an abbreviated list of the more important features:

Proprietary “**Advanced Renaissance**” Technology which eliminates feedback. The results are as follows: Real-time amplification is achieved since interactions from the speaker back to the amplifier are virtually eliminated; More accurate musical reproduction with respect to tonality; Virtually non-existent transient intermodulation distortion (which is far more degrading to sonic performance than harmonic distortion); The elimination of common phase errors resulting from feedback.

A custom **proprietary toroidal transformer design** with lower magnetic, electrical and thermal loss, yielding an improved power transfer and lower regulation factor, resulting in increased current speed and better dynamics.

Fully **balanced differential** circuitry up to the output stage.

Output stable to any known speaker impedance.

Class A output to 5 watts for greater efficiency.

An **oversized** power supply.

An **exceptionally short signal path** for a faster transient response.

Precision matched **Bipolar output devices** which offer superb linearity throughout the entire audio frequency spectrum.

A **high damping factor** which yields superior musical dynamics, improved signal speed and refined timbre accuracy.

Extremely **rigid chassis construction** to minimize the effects of external vibrations.

Accurate matching of the very finest high quality electronic components.

A **symmetrical** circuit design.

Pure copper circuit board tracings with extremely low impedance characteristics.

Designed to be **powered up at all times** for optimal performance.

Low operating temperature for a longer than normal life expectancy.


Unpacking and Warning!

The **MOON W-3** Stereo power amplifier is a large and heavy component that should be removed from its box with care. We strongly advise that you seek another person to help lift the amplifier out of its box, and place it in its final location.

The following accessories should be included inside the box with your amplifier:

- ✓ *AC power cable*
- ✓ *4 Pointed screw-on tips (for the amplifier's legs)*
- ✓ *2 "dummy" RCA termination plugs*
- ✓ *This owner's manual*
- ✓ *Warranty card (USA and Canada only)*

As soon as the amplifier is safely removed from its box and placed down, perform a thorough physical inspection and report any physical damage to your dealer immediately. We suggest that you keep the original packaging, and that it should be stored in a safe, dry place in case you're required to transport the amplifier. The customized packaging is specially designed to protect the amplifier from potential damage that can arise when shipping such a product.

WARNING!  To reduce the risk of fire or electric shock, do not expose this product to rain or moisture. Do not attempt to "lift the ground" by removing the ground pin from the AC cable. Make sure that your household electrical wiring supports proper AC grounding techniques before plugging in this product. Keep the heat sinks and top cover free of dust to allow for proper heat dissipation. Never expose this product to extreme temperatures. Always connect the audio signal path cables prior to connecting the AC mains.

CAUTION! No user-serviceable parts inside. Do not remove top cover, as severe electrical shock may result.

IMPORTANT! Make sure that your local AC voltage complies with the unit's label. Damage caused by plugging this amplifier into an AC receptacle of the wrong voltage will not be covered by warranty.

Installation Tips

The **MOON W-3** Stereo power amplifier is both powerful and heavy. It requires reasonable ventilation to maintain an optimum and consistent operating temperature. Consequently, it should be placed in a location with empty space around it for proper heat dissipation. You should never place another component on top of this amplifier. Also, it should sit on a solid hard surface to prevent any accidents such as falling over.

This is a powerful amplifier and it will radiate heat when driven hard; You should avoid placing it near a heat source or inside a closed cabinet that is not well ventilated. This could compromise the amplifier's performance and reliability.

The **W-3** uses a large toroidal transformer in its power supply. Even though it is well shielded, you should not place this amplifier too close to source components sensitive to EMI, such as turntables, phono preamplifiers and CD Players.

Once you have decided on a location for your **W-3**, you should install the four (4) pointed screw-on tips onto the cones of the chassis. These tips will easily scratch most surfaces, therefore it's advisable to follow these instructions:

- 1) Place your **W-3** on a soft surface (i.e. carpet) and carefully turn it so that it rests on its side.
- 2) Screw one tip onto each of the four cones.
- 3) Carefully move your **W-3** to it's pre-determined location.

Included with these tips is a small metal rod, intended for final adjustments (if necessary) by simply threading it through the tiny hole of each of these tips and then gently turning. These adjustable screw-on tips serve two purposes: Mechanical grounding of the chassis and compensation for surfaces that aren't perfectly level.

Since household dust is an excellent insulator of heat, we suggest that you clean both of the curved side-mounted heat sinks on a regular basis. A smooth nylon brush with long bristles (ie. paint brush) is recommended for this task.

Rear Panel

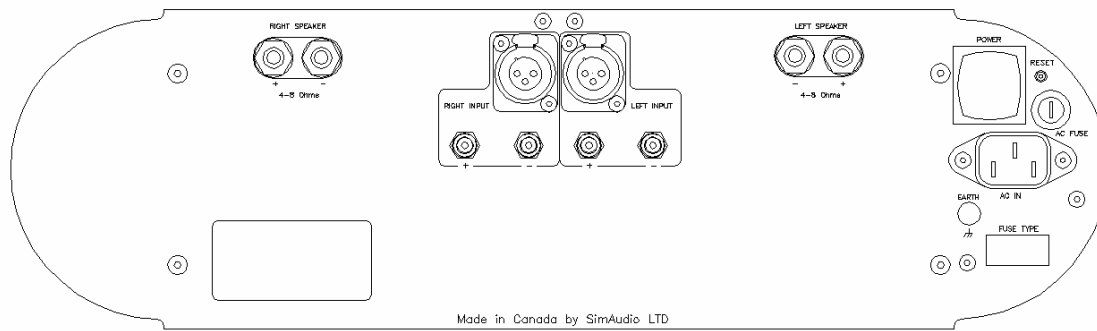


Figure 1: Rear panel of Moon W-3 Stereo Amplifier

The rear panel will look similar to Figure 1 (above). Each channel has one balanced input on an XLR connector and a two single-ended (unbalanced) inputs on RCA connectors: one marked "+" and the other marked "-". The reason for two single-ended RCA connectors per channel is as follows: In the event that you wish to operate the **MOON W-3** Stereo power amplifier in balanced mode using RCA terminated interconnects. Furthermore, some preamplifiers invert phase and, as a result, their output signal requires phase correction; This can be accomplished by simply using the amplifier's RCA inputs labeled "-". Normally, you would run the single-ended interconnects from your preamplifier to the RCA inputs labeled "+" on the **W-3's** rear panel.

There is no switch to toggle from balanced mode to single-ended mode. You may operate the amplifier in either mode, but only one mode at one time for each channel.

Two pairs of heavy duty gold-plated speaker binding posts are also located on opposite sides of the rear panel; one pair ("- and "+") for each for the left and right speaker.

On the far right side, you will find (from top to bottom); The power "main switch" and the small "power" on/off push button directly to the right of it; The "AC Fuse" socket cover; and the "AC in" IEC receptacle for the power cord.

Connecting the W-3

1. Connect the input cables running from your preamplifier's outputs, whether balanced or single-ended, to the amplifier's XLR or RCA inputs respectively. We highly recommend that you use the balanced XLR inputs (provided that your preamplifier has balanced outputs) to take full advantage of **MOON W-3** Stereo power amplifier's capabilities. Please refer to the next section "Balanced Operation" on page 9 for further information.

In the event that you are using single-ended RCA interconnects, you should use the amplifier's RCA female jacks labeled "+" and leave the "dummy" RCA termination plugs in the "-" RCA female jacks. If your preamplifier inverts phase, then you should use the RCA female jacks labeled "-" and insert the dummy RCA termination plugs into the "+" RCA female jacks.

Don't hesitate to use high quality interconnect cables. Poor quality interconnect cables can degrade the overall sonic performance of your system. It is recommended, though not mandatory, to use balanced interconnects between your preamplifier and the **W-3** when using long cable runs (i.e. more than 3 meters in length).

2. Connect your speakers, with the cables of your choice, to the **W-3**'s speaker binding posts. Take care to respect the polarity ("+" , "-") of the output. Once again, don't hesitate to use high quality speaker cables. Poor quality speaker cables can degrade the overall sonic performance of your system.
3. Connect the supplied AC power cable to the IEC receptacle, located on the amplifier's rear panel. Alternatively, if you wish, you may use a dedicated high-performance AC cable designed for high current applications. Ensure that the AC wall outlet you use has a functioning ground. For the best sonic performance, it is preferable that you plug your **W-3** directly into a dedicated AC outlet and avoid using an extension cord. If you have the time and willingness, consider installing a superior quality AC wall outlet such as a hospital grade Hubbell.
4. In order to obtain the maximum performance from your audio system, we strongly recommend that the detachable power cord not come into physical contact with either the interconnect cables or the speaker cables running to and from your **W-3**. In the event that this can't be avoided, you should ensure that any cables coming into contact with each other are crossed at ninety degree angles to minimize the contact area.

Balanced Operation

When using an unbalanced interconnect, the audio signal runs through both the center wire and the shield/ground wire. Any noise picked up by this interconnect (ie. nearby magnetic fields such as an AC power cord) will be reproduced by the amplifier and heard through the loudspeakers. Conversely, a balanced interconnect has three separate conductors; one for the ground and two for the actual signal. These two signals are identical except that one is 180 degrees out of phase with the other. For example, when one conductor is carrying a signal of +5 Volts, the other will be carrying a signal of -5 Volts. When these two inverted signals on a balanced line are input into a differential power amplifier such as the **MOON W-3** Stereo power amplifier, any noise picked up by the interconnect will be eliminated since a differential circuit amplifies only the difference between these two signals: Noise on a balanced interconnect will be equal on both conductors and therefore not be processed.

You can operate the MOON W-3 Stereo power amplifier in balanced mode one of two ways:

- 1) When using balanced interconnect cables with XLR connectors, **You must remove the "dummy" RCA terminator plugs** from the back panel and store them in a safe place.
- 2) You can also use both of the the RCA "+" and "-" inputs on each channel for balanced operation.

Bridged-Mono Operation

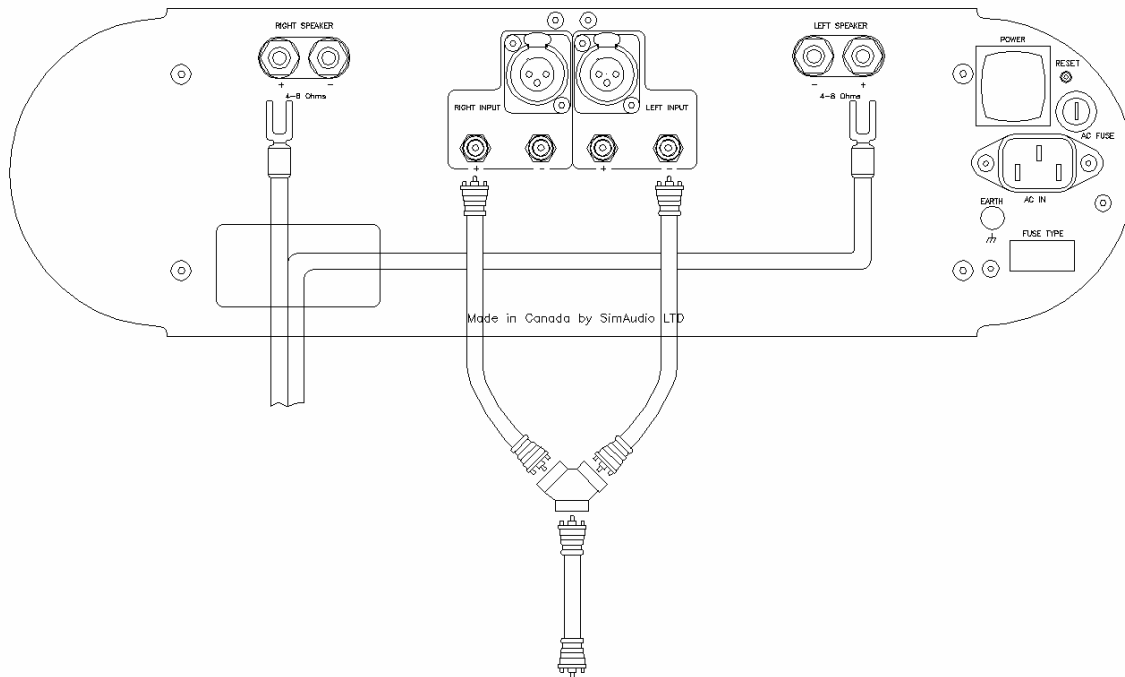


Figure 2: Bridged Mono operation of the Moon W-3 Stereo Amplifier

In the event that you wish to operate the **MOON W-3** Stereo power amplifier as a monoblock amplifier, it can be converted to bridged mode without any complex modifications.

Only an RCA "Y" adapter is required. This adapter will allow one input signal to be sent to both channels of the amplifier's inputs, as pictured above in Figure 3. One lead from the "Y" adapter should plug into the "+" input of one channel and the second lead must plug into the "-" input of the **W-3**'s other channel. You must insert the two "dummy" RCA terminator plugs, supplied with your **W-3** amplifier, into the female RCA input connectors that are not being used. Also, make sure that you make identical connections, with respect to polarity, on the other **W-3** that you're bridging for mono operation.

The **W-3** produces 400 watts of output power into 8 ohms for a single channel when operating in bridged-mono mode.

If you are unsure about how to accomplish a bridged-mono mode of operation, don't hesitate to contact your **Simaudio MOON** dealer.

Operating the W-3

We recommend that you leave your **MOON W-3** Stereo power amplifier powered up at all times to maintain optimal performance. In the event that you plan to be away from your home for a few days, powering off the amplifier may not be a bad idea. Once fully "broken-in", please keep in mind that your **W-3** will require several hours of playing time before it reaches its peak performance after you've powered it up again.

Turning on your MOON W-3 for the first time

Prior to turning the amplifier on for the first time, make sure that every cable is properly connected to avoid any problems. Then turn on your preamplifier connected to the **W-3**. Finally, power up your **W-3** in the following manner:

- 1) Flick the main rocker switch labeled "MAIN POWER" to the '1' (on) position.
- 2) Next, momentarily press the push button labeled "Power". The amplifier will make a faint click sound, confirming that everything is in order. The blue LED on the front panel indicates that the amplifier is powered up and ready for use.

On and Off Sequence

To avoid having any annoying noises (ie. "thumps" and "pops") emanate from your speakers when powering your **W-3** on or off, you should

- 1) Always power up your preamplifier prior to powering up your **W-3**.
- 2) Always power down your **W-3** prior to powering down your preamplifier.

Troubleshooting

Your **MOON W-3** Stereo power amplifier is equipped with a self-diagnostic system that will automatically shut itself down when it detects DC (direct current) from any input. If your **W-3** power amplifier turns itself off or will not power up, there may very well be DC present in one (or more) of the amplifier's inputs coming from one (or more) of your preamplifier/processor's outputs. You must determine if there is any DC present. The best way to accomplish this is by first powering down the **W-3** via the main power rocker switch, then disconnecting all inputs to the **W-3** leaving only the speakers connected. Attempt to power up your **W-3** again: A successful power up will indicate the presence of DC coming from your preamplifier or one of your signal sources (ie. CD Player).

If your **W-3** still doesn't power up, turn off the main power switch and check the AC fuse. If the fuse appears OK, put it back in its socket and then try to power up again the usual way. If the fuse is blown, replace it with a fuse of the same rating, and repeat the above process. At this point, you should be able to power up your **W-3**. If not, immediately consult your dealer for assistance.

Specifications

Configuration	Stereo
Power Supply Transformer	1.1kVA
Power Supply Capacitance	108,000 μ F
Class Of Operation	A/AB
Design	Fully Balanced Differential to output stage
Input Impedance	47,500 Ω
Input Sensitivity	900mV
Output Device Type	Bipolars - 8 per channel
Output Power at 8 Ω	120 Watts per channel
Output Power at 4 Ω	240 Watts per channel
Output Power at 2 Ω	400 Watts per channel
Output Power – Bridged Mono at 8 Ω	400 Watts
Frequency Response	10Hz - 125kHz +0/-3dB
Output Impedance	0.01 Ω
Damping Factor (static)	800
Gain	31dB
Dynamic Headroom	6dB
Signal-to-noise Ratio	> 100dB @ full power
Maximum Output Voltage	32 Volts
Slew Rate	35V/ μ s
Maximum Current – Peak	36 amperes
Maximum Current – Continuous	18 amperes
Crosstalk @ 1kHz	-90dB
Intermodulation Distortion	Unmeasureable
THD (20Hz - 20kHz @ 1 watt)	< 0.1 %
Power Consumption @ idle	40 Watts
AC Power Requirements	120V / 60Hz or 240V / 50Hz
Fuse Replacement - 120V	6A long fast blow
Fuse Replacement - 230V	3A long fast blow
Shipping Weight	48 lbs / 21 Kgs
Dimensions (W x H x D, inches)	19 x 7.5 x 14

Balanced Input Pin Assignment:

Pin 1	Ground
Pin 2	Positive
Pin 3	Negative

Service and Warranty

(U.S.A and Canada only)

Please take the time to complete and mail the warranty card supplied with your **MOON W-3** Stereo power amplifier. This card is necessary to activate your full warranty, as well as allowing you to receive information on new products and services. Alternatively, you may visit our website **www.simaudio.com** and go to the "warranty registration" section where you can register on-line.

If you experience a problem with your **W-3**, contact your dealer first. Most often, problems are merely minor oversights that are easily solved, and this will save you both the time and the cost of shipping the amplifier back to us. If your dealer is not able to diagnose the problem, please feel free to contact our service department. If required, service must be performed by a **Simaudio Ltd.** authorized center such as your national distributor. In order to prevent any damage during transport, the **W-3** must be packed with all of its original internal materials and shipped in the original box. Please keep your box and shipping materials.

MOON W-3 Stereo power amplifiers are guaranteed against defective materials and workmanship for a period of THREE (3) years, parts and labor, to the original owner. Upon receiving your registration card (either by mail or via our on-line warranty registration), this warranty is immediately upgraded to TEN (10) years, parts and labor to the original owner only. Additionally, your **W-3** must be purchased from an authorized **MOON** dealer to qualify for warranties. These warranties are voided in the case of accident, or if the unit was tampered with, somewhere other than at an authorized Simaudio service center. This warranty is valid only in Canada and USA. In other countries, the warranty conditions are defined and limited only by the local distributor.

Simaudio Ltd. limits its liability to the repair or replacement of the **MOON W-3** Stereo power amplifier. **Simaudio Ltd.** cannot be held responsible for any damages caused to any other equipment, whatever the circumstances and/or causes arising thereof.

Canada

Simaudio Ltd.
95 Chemin Du Tremblay, Unit 3
Boucherville (Québec) J4B 7K4

USA

Simaudio USA
100 Walnut Street, Door 13
Champlain, NY 12919

Tel. (450) 449-2212

Fax (450) 449-9947

E-mail: service@simaudio.com