

Behringer A500

BEHRINGER A500 Reference Amplifier User Manual

Professional 500-Watt Reference-Class Studio Power Amplifier

1. INTRODUCTION

The BEHRINGER A500 is a professional 500-watt reference-class studio power amplifier designed for a wide range of audio applications, including recording studios, post-production facilities, live sound reinforcement, and high-fidelity (HiFi) systems. This amplifier delivers ultra-linear performance and robust power output, ensuring accurate and uncolored sound reproduction.

Key features include:

- Ultra-linear power amplification suitable for studio monitors and other passive speakers.
- Flexible power output: 2 x 300 Watts into 4 Ohms, or 600 Watts into 8 Ohms in bridged mono operation.
- Servo-controlled design for stable operation with various speaker loads.
- Advanced convection-cooling system for silent, fan-less operation and enhanced reliability.
- Integrated level meters and clip indicators for precise performance monitoring.

2. IMPORTANT SAFETY INSTRUCTIONS

Please read and follow all safety instructions before operating the BEHRINGER A500 amplifier to prevent electric shock, fire, or injury.

- **Power Source:** Connect the unit only to the specified voltage (100V as per specifications) using the provided power cord.
- **Grounding:** Ensure the power cord is connected to a grounded outlet. Do not defeat the safety purpose of the polarized or grounding-type plug.
- **Ventilation:** Do not block any ventilation openings. Install in accordance with the manufacturer's instructions, ensuring adequate airflow around the unit.
- **Heat:** Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- **Water and Moisture:** Do not use this apparatus near water or expose it to dripping or splashing.
- **Cleaning:** Clean only with a dry cloth.
- **Servicing:** Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen

into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

3. UNPACKING AND INITIAL INSPECTION

Carefully unpack your BEHRINGER A500 amplifier. Before discarding the packaging, ensure all components are present and inspect the unit for any signs of damage that may have occurred during transit.

3.1. Package Contents

Your package should contain the following items:

- BEHRINGER A500 Power Amplifier
- Power Cord
- This User Manual

3.2. Visual Inspection

Examine the amplifier for any physical damage such as dents, scratches, or loose parts. If you find any damage, do not operate the unit and contact your dealer immediately.

4. SETUP AND CONNECTIONS

4.1. Placement

The A500 features an advanced convection-cooling system, eliminating the need for a fan. To ensure optimal performance and longevity, place the amplifier in a location with adequate air circulation. Avoid enclosed spaces or stacking other heat-generating equipment directly on top of it. The unit is designed for standard 19-inch rack mounting or desktop use.

4.2. Front Panel Overview



Figure 1: Front view of the BEHRINGER A500 amplifier, showing Channel 1 and Channel 2 level controls, the central VU meter, and the power switch.

The front panel provides access to the main controls and indicators:

- **Channel 1 & 2 Level Controls:** Rotary knobs to adjust the input sensitivity/volume for each channel.
- **VU Meter:** Central LED display indicating the output level for both channels.
- **Clip Indicators:** LEDs that illuminate when the signal is clipping, indicating potential distortion.
- **Power Switch:** Main power on/off button.

4.3. Rear Panel Overview



Figure 2: Rear view of the BEHRINGER A500 amplifier, showing input and output connectors, and the power inlet.

The rear panel houses all input and output connections:

- **Audio Inputs:** Balanced XLR and 1/4" TRS connectors, and unbalanced RCA connectors for each channel.
- **Speaker Outputs:** Binding posts for connecting passive speakers.
- **Mode Switch:** Selects between Stereo and Bridged Mono operation.
- **Power Inlet:** For connecting the AC power cord.

4.4. Connecting Audio Inputs

Connect your audio source (e.g., mixer, audio interface, pre-amplifier) to the A500's input connectors. The A500 supports both balanced (XLR, 1/4" TRS) and unbalanced (RCA) connections. For optimal signal integrity and noise rejection, balanced connections are recommended, especially for longer cable runs.

- **Balanced Inputs:** Use XLR or 1/4" TRS cables to connect to the respective input jacks for Channel 1 and Channel 2.
- **Unbalanced Inputs:** Use RCA cables to connect to the RCA input jacks for Channel 1 and Channel 2.

4.5. Connecting Speakers

The A500 can operate in stereo or bridged mono mode. Ensure the amplifier is powered off before making any speaker connections.

4.5.1. Stereo Operation

For stereo operation, set the rear panel mode switch to "STEREO". Connect your left speaker to the Channel 1 output binding posts and your right speaker to the Channel 2 output binding posts. Ensure correct polarity (+ to + and - to -).

- Connect the positive (+) terminal of the left speaker to the positive (+) terminal of Channel 1 output.
- Connect the negative (-) terminal of the left speaker to the negative (-) terminal of Channel 1 output.
- Repeat for the right speaker and Channel 2 output.

In stereo mode, the A500 delivers 185 Watts RMS per channel into 4 Ohms or 125 Watts RMS per channel into 8 Ohms (at 1kHz, 1% THD).

4.5.2. Bridged Mono Operation

For bridged mono operation, set the rear panel mode switch to "BRIDGED". This combines the power of both channels into a single, more powerful output for a single speaker. Connect your speaker to the designated bridged mono output binding posts (typically the positive (+) of Channel 1 and the positive (+) of Channel 2, but always refer to the markings on the unit for precise connection).

- Connect the positive (+) terminal of your speaker to the positive (+) terminal of Channel 1 output.
- Connect the negative (-) terminal of your speaker to the positive (+) terminal of Channel 2 output (this is the common bridged mono wiring).

In bridged mono mode, the A500 delivers 375 Watts RMS into 8 Ohms (at 1kHz, 1% THD).

4.6. Power Connection

Once all audio and speaker connections are made, connect the supplied power cord to the AC inlet on the rear panel of the A500 and then to a suitable grounded electrical outlet.

5. OPERATION

5.1. Powering On/Off

1. Ensure all input sources and speakers are connected correctly.
2. Turn down the Channel 1 and Channel 2 level controls on the front panel to their minimum (fully counter-clockwise) position.
3. Press the power switch on the front panel to turn on the amplifier. The power indicator LED will illuminate.
4. To power off, first turn down the level controls, then press the power switch.

Note: It is good practice to power on your amplifier last and power it off first in your audio chain to prevent "pops" or "thumps" through your speakers.

5.2. Adjusting Levels

Slowly increase the Channel 1 and Channel 2 level controls to achieve the desired listening volume. Monitor the VU meter to ensure the signal is not consistently reaching the "Clip" indicator. Occasional flashes on the clip indicator during peak transients are acceptable, but continuous illumination indicates signal clipping and potential distortion. Reduce the input level from your source or the amplifier's level controls if clipping occurs frequently.

5.3. Monitoring Performance

The front panel VU meter provides a visual representation of the output level. Use this in conjunction with the clip indicators to maintain optimal signal levels and prevent overloading the amplifier or speakers.

6. MAINTENANCE

The BEHRINGER A500 is designed for reliable operation with minimal maintenance. Follow these guidelines to ensure its longevity:

- **Cleaning:** Dust the unit regularly with a soft, dry cloth. Do not use liquid cleaners or solvents, as they may damage the finish or internal components.
- **Ventilation:** Periodically check that the ventilation slots are free from dust and obstructions. Ensure adequate space around the amplifier for proper heat dissipation.
- **Cable Connections:** Occasionally check all audio and power cable connections to ensure they are secure.

Note: There are no user-serviceable parts inside the amplifier. Opening the chassis will void your warranty and may expose you to dangerous voltages.

7. TROUBLESHOOTING

If you experience issues with your BEHRINGER A500, consult the following table before contacting technical support.

Problem	Possible Cause	Solution
No sound output	<ul style="list-style-type: none"> • Amplifier not powered on. • Input cables disconnected or faulty. • Speaker cables disconnected or faulty. • Input level controls turned down. • Source device not playing or outputting signal. 	<ul style="list-style-type: none"> • Ensure power switch is on and power LED is lit. • Check all input cable connections and try different cables. • Verify speaker cable connections and polarity. • Increase Channel 1 and Channel 2 level controls. • Check your audio source device.
Distorted or unclear sound	<ul style="list-style-type: none"> • Input signal too high (clipping). • Speaker impedance mismatch. • Faulty cables or speakers. 	<ul style="list-style-type: none"> • Reduce input level from source or amplifier level controls until clip indicators stop flashing excessively. • Ensure speaker impedance is compatible with the amplifier's output (4-8 Ohms for stereo, 8 Ohms for bridged mono). • Test with different cables or speakers if possible.
Amplifier runs hot	<ul style="list-style-type: none"> • Inadequate ventilation. • Overdriving the amplifier. • Speaker impedance too low. 	<ul style="list-style-type: none"> • Ensure proper airflow around the unit; clear any obstructions. • Reduce listening volume or input gain. • Verify speaker impedance matches amplifier specifications.

8. TECHNICAL SPECIFICATIONS

Feature	Detail
Model	A500
Power Output (RMS @ 1kHz, 1% THD)	Stereo, 8 Ohms: 125 W per channel Stereo, 4 Ohms: 185 W per channel Bridged Mono, 8 Ohms: 375 W
Peak Power Output (1kHz)	Stereo, 8 Ohms: 175 W per channel Stereo, 4 Ohms: 300 W per channel Bridged Mono, 8 Ohms: 600 W
Distortion (THD)	<0.01%
Voltage Gain	26 dB
Input Impedance	Unbalanced: 10 kOhms Balanced: 20 kOhms
Signal-to-Noise Ratio	>100 dBA

Feature	Detail
Amplifier Class	Class AB
Connector Type	RCA, XLR
Power Source	Corded Electric
Voltage	100V (check local voltage requirements)
Dimensions (H x W x D)	4 x 19 x 10.14 inches (10.16 x 48.26 x 25.75 cm)
Item Weight	19.4 pounds (8.8 kg)
Color	Black

Specifications are subject to change without notice.

9. WARRANTY AND SUPPORT

For detailed warranty terms and conditions, as well as information on Behringer's Limited Warranty, please refer to the official Behringer website or the warranty card included with your product. If you require technical support or service, please contact your local Behringer dealer or visit the Behringer support page online for assistance.

You can often find additional resources, FAQs, and contact information on the official Behringer website:

www.behringer.com