# BENZO JohnH M2 tube amp attenuator

User Manual

Ballarino Amplification

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Ballarino
AMPLIFICATION

# 1 Introduction

Thank you for acquiring a Ballarino Amplification BENZO / JohnH M2 attenuator. Please take the time and read through the following instructions to get the best out of your device.

# 2 Important information

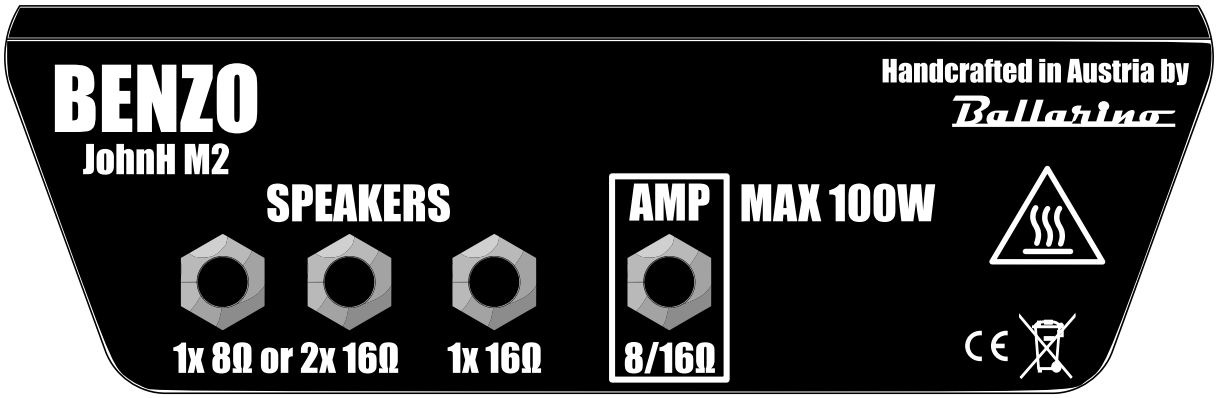
- Unit may get hot!
- After extensive use: let the unit cool down before picking it up.
- Always use good cables with high quality connectors/jacks!
- Make sure your amplifier is in good working condition before cranking it.
- Never block ventilation holes!
- Never use for amps rated for more than 100 watts! If in doubt your amplifier is suited for the BENZO, contact Ballarino Amplification support at support@ballarino-amplification.com
- Do not use with solid state amplifiers!
- Always connect a speaker or the BENZO to the output jacks of your amplifier, never run your amplifier without a proper load!

# 3 Function

The BENZO / JohnH M2 is a power attenuator to be used for guitar tube amps. If connected between the tube amp and the speaker cabinet, it reduces the power delivered to the speakers by an amount selectable by the operator. This allows the player to turn up the volume of their amplifier (to gain the sought-after “power amp distortion”) without having to cope with insane volume levels. The BENZO reduces the power transmitted to the speakers by converting parts of it into heat. The more output power the amplifier delivers, the more heat is converted in the attenuator, and the warmer the unit will get. If used with powerful amplifiers the surfaces on the BENZO can reach up to 60 degrees Celsius (or 140 degrees Fahrenheit). This is normal, and does not limit functionality. To reduce the internal temperatures in the BENZO, a built-in fan guarantees proper airflow. This fan is powered by a small portion of the amplifier’s output power and does not need any external power supply.

# 4 How to use

## 4.1 Connecting speakers and amplifier



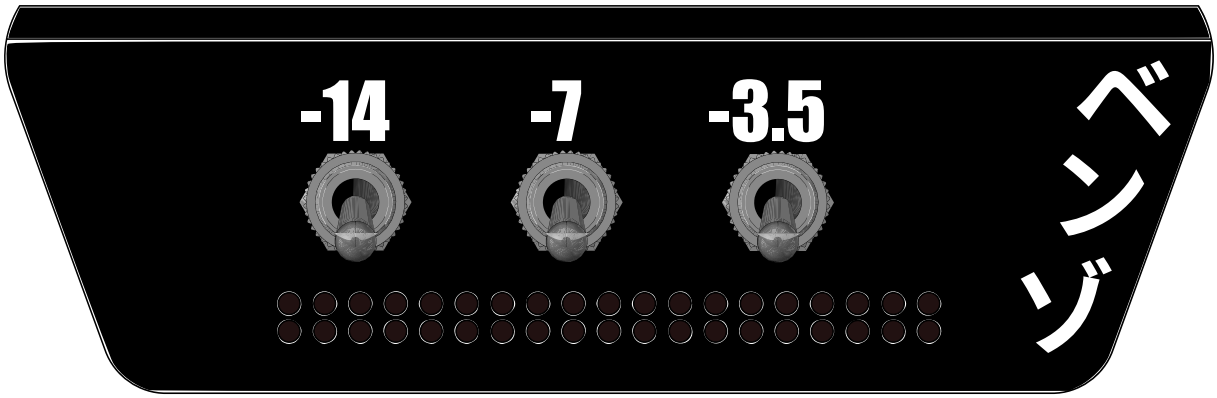

Connect your tube amplifier's speaker output to the **AMP** input on the BENZO. Use the output on the amplifier with the correct impedance specification:

- Use the amplifier output labeled with **8 Ohm** if you have an **8 Ohm** BENZO
- Use the amplifier output labeled with **16 Ohm** if you have a **16 Ohm** BENZO

Connect one (or more) speaker cabinets to the BENZO jacks labeled with **SPEAKERS**. Use the correct jack depending on the impedance of your speakers. These are the possible combinations:

- One **8 Ohm** speaker: Connect to one of the two jacks labeled with **1x8 or 2x16**
- One **16 Ohm** speaker: Connect to the jack labeled with **1x16**
- Two **16 Ohm** speakers: Connect a speaker each to the jacks labeled with **1x8 or 2x16**. The speakers are now connected in parallel.

## 4.2 Using the controls




There are three switches on the front side of the unit. The number above each switch specifies the

amount of power reduction in dB if the switch is activated (down). The switches work additive, if e.g. the -14 and -7 switches are activated, then the power is reduced by -14-7=**-21dB**. When all switches are in the up position, the power transfer from amplifier to the speakers is reduced by **-7dB**. This is the base attenuation, which cannot be switched off. When all three switches are in the down position the power from amplifier output to the speakers is reduced by a factor of **-31.5dB**. This corresponds to a factor of 0.0007, which means that the power from an e.g. 100W amplifier is reduced to 0.07W, or 70mW.

The switches can be operated while playing.

# 5 Specifications

- Dimensions: 200x130x78mm (7.9x5.1x3.1”)
- Weight: 1.5kg (3.3lbs)
- Base attenuation (all switches in up position): -7dB
- Attenuation levels: -7dB to -31.5dB
- Fan: 60x60x25mm, 12V DC (8 Ohm Benzo), 24V DC (16 Ohm Benzo)
- Rated power: 120W continuous, 200W for t<15min