Harley Benton

PA-250

User Manual

Power Attenuator

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250W Power Attenuator
BY PASS
POWER
8Ω
16Ω
Harley Benton
FINE
LOAD

1 General information

This document contains important instructions for the safe operation of the product. Read and follow the safety instructions and all other instructions. Keep the document for future reference. Make sure that it is available to all those using the product. If you sell the product to another user, be sure that they also receive this document.

Our products and documentation are subject to a process of continuous development. They are therefore subject to change. Please refer to the latest version of the documentation, which is ready for download under *www.thomann.de*.

1.1 Symbols and signal words

In this section you will find an overview of the meaning of symbols and signal words that are used in this document.

Signal word	Meaning
DANGER!	This combination of symbol and signal word indicates an immediate dangerous situation that will result in death or serious injury if it is not avoided.
WARNING!	This combination of symbol and signal word indicates a possible dangerous situation that can result in death or serious injury if it is not avoided.
NOTICE!	This combination of symbol and signal word indicates a possible dangerous situation that can result in material and environmental damage if it is not avoided.

Warning signs	Type of danger
	Warning – high-voltage.
	Warning – danger zone.

2 Safety instructions

Intended use

This device is used to attenuate the output level of guitar amps. Use the device only as described in this user manual. Any other use or use under other operating conditions is considered to be improper and may result in personal injury or property damage. No liability will be assumed for damages resulting from improper use.

This device may be used only by persons with sufficient physical, sensorial, and intellectual abilities and having corresponding knowledge and experience. Other persons may use this device only if they are supervised or instructed by a person who is responsible for their safety.

Safety

DANGER!

Risk of injury and choking hazard for children!

Children can suffocate on packaging material and small parts. Children can injure themselves when handling the device. Never allow children to play with the packaging material and the device. Always store packaging material out of the reach of babies and small children. Always dispose of packaging material properly when it is not in use. Never allow children to use the device without supervision. Keep small parts away from children and make sure that the device does not shed any small parts (such knobs) that children could play with.

DANGER!

Danger to life due to electric current!

Within the device there are areas where high voltages may be present. Never remove any covers. There are no user-serviceable parts inside. Do not use the device when covers, safety equipment or optical components are missing or damaged.

WARNING!

Possible hearing damage due to high volumes on speakers or headphones!

With speakers or headphones connected, the device can produce volume levels that may cause temporary or permanent hearing impairment. Over an extended period of time, even levels that seem to be uncritical can cause hearing damage. Do not operate the device permanently at a high volume level. Decrease the volume level immediately if you experience ringing in your ears or hearing impairment.

NOTICE!

Damage to an external power supply due to high voltages!

The device can be powered by an external power supply. The external power supply can be damaged if it is operated with the incorrect voltage or if high voltage peaks occur. In the worst case, excess voltages can also cause a risk of injury and fires. Make sure that the voltage specification on the external power supply matches the local power grid before plugging in the power supply. Only operate the external power supply from professionally installed mains sockets that are protected by a residual current circuit breaker (FI). Ensure that the power cord plug is easily accessible at all times if it is the only device to safely disconnect the device from the mains supply. As a precaution, disconnect the power supply from the power grid when storms are approaching or it the device will not be used for a longer period.

NOTICE!

Damage to the device due to use of unsuitable external power supplies!

If the device is operated with an unsuitable external power supply, the device can be damaged by overvoltage or incorrect polarity. If things go badly, using an unsuitable power supply can also cause a risk of injury and fire. Only use the external power supply designated for the device or an equivalent external power supply with identical parameters. If in doubt, compare the voltage specifications on the external power supply and the polarity (+/-) with the specifications in this manual and printed on the device. Voltage and polarity must always match.

NOTICE!

Damage to the device if operated in unsuitable ambient conditions!

The device can be damaged if it is operated in unsuitable ambient conditions. Only operate the device indoors within the ambient conditions specified in the "Technical specifications" chapter of this user manual. Avoid operating it in environments with direct sunlight, heavy dirt and strong vibrations. Avoid operating it in environments with strong temperature fluctuations. If temperature fluctuations cannot be avoided (for example after transport in low outside temperatures), do not switch on the device immediately. Never subject the device to liquids or moisture. Never move the device to another location while it is in operation. In environments with increased dirt levels (for example due to dust, smoke, nicotine or mist): Have the device cleaned by qualified specialists at regular intervals to prevent damage due to overheating and other malfunctions.

NOTICE!

Risk of fire due to covered intake and ventilation slots as well as adjacent heat sources!

If the suction and ventilation slots of the device are covered or the device is operated in the immediate vicinity of other heat sources, the device can overheat and burst into flames. Never cover the device, fan intake and vents. Do not install the device in the immediate vicinity of other heat sources. Never operate the device in the immediate vicinity of naked flames.

NOTICE!

Damage to a switched-on amplifier by connecting the device!

If the device is connected to an amplifier that is switched on, the amplifier may be damaged. Ensure that the amplifier to which you want to connect the device is switched off before you connect the device.

NOTICE!

Possible staining due to plasticiser in rubber feet!

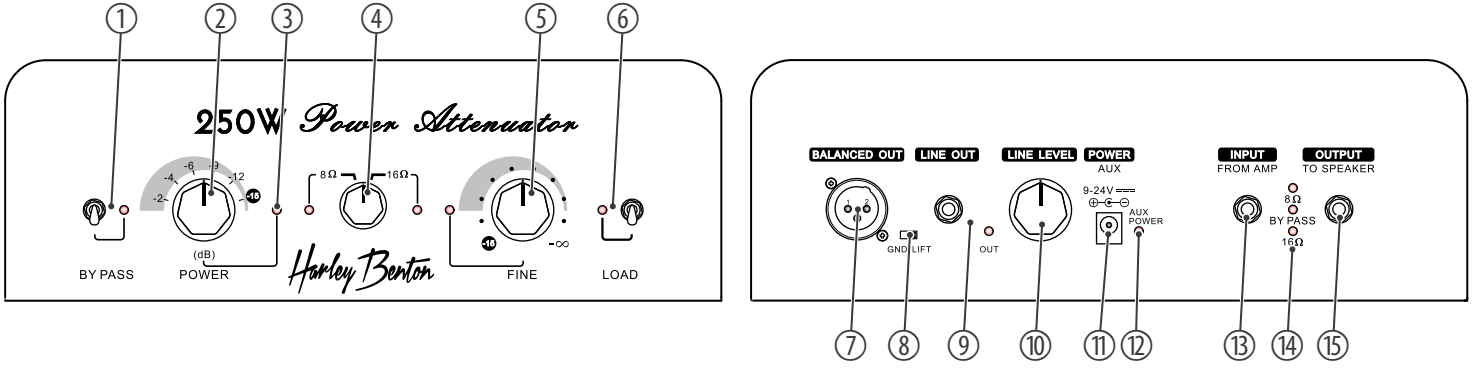
The plasticiser in the rubber feet of this product may react with the coating of the floor, resulting in permanent dark stains after a while. If necessary, use a suitable mat or felt pads to prevent direct contact between the product's rubber feet and the floor.

3 Features

Resistive power soak for tube amplifiers, ideal for use in rehearsal rooms, recording studios and on stage.

- Input power: max. 250 W
- 8 Ω option, 16 Ω option
- Power supply via amplifier or optional plug-in power adapter (not included)
- Inputs: amplifier, optional power adapter
- Outputs: PA equipment/mixer (low impedance), line, speaker
- Controls: speaker level, line level, fine level
- Silent fan

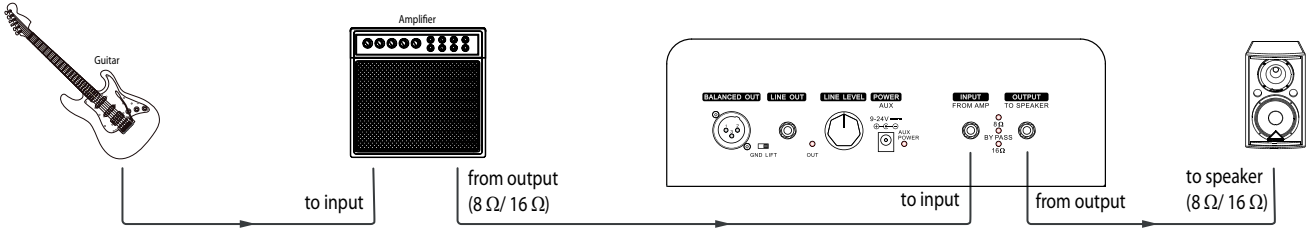
4 Connections and controls



1	*[BY PASS]* | toggle switch for disabling the power reducer. The LED lights. The signal is output just as loud as if the speaker was connected directly to the amplifier.
2	*[POWER (db)]* | rotary control for adjusting the volume of the signal at the speaker output when the device is working as a power attenuator. Turn this control clockwise to reduce the volume of the output signal in steps of 2…3 dB. Turn the control to *'–15'* to enable the rotary control *[FINE]*.
3	*[POWER]* | status LED. The LED lights up when the device is working as a power attenuator.
4	*[8 Ω / 16 Ω]* | rotary control for setting the impedance. The corresponding LED lights. The impedance must be set to the same value on the Power Attenuator, on the connected amplifier and on the speaker.
5	*[FINE]* | rotary control for adjusting the effective signal volume at the speaker out. The *[FINE]* LED lights up when the *[FINE]* control is activated (see point 2). Turn the control clockwise to reduce the output signal volume in steps of 4…5 dB up to *'–∞'* (no sound). If you turn the control to *'–15'*, the effective volume is –15 dB less than the not-attenuated volume.
6	*[LOAD]* | toggle switch for operating mode selection In the upper position, the device works as a load box (load resistance for the amplifier, without signal at the speaker output) and the *[LOAD]* LED lights up. In the lower position, the device works as a power attenuator (power reducer) and the *[POWER]* LED lights up.
7	*[BALANCED OUT]* | low-impedance XLR output for connecting PA equipment or a mixing console
8	*[GND LIFT]* | switch for disconnecting the grounding to avoid unwanted hum noises caused by ground loops

9	*[LINE OUT]* | Line output for connecting PA equipment or a mixing console The LED *[OUT]* lights when PA equipment or a mixing console is connected.
10	*[LINE LEVEL]* | rotary control for adjusting the signal volume at the line out
11	*[POWER]* | input socket for an optional power adapter If you want to run the LEDs and the fan permanently stable, you can use an optional power adapter as power supply.
12	*[AUX POWER]* | status LED. LED lights when the device is operated via an optional power adapter.
13	*[INPUT FROM AMP]* | input socket for connecting an amplifier The impedance must be set to the same value on the Power Attenuator and on the connected amplifier. Connect the device always to the disconnected amplifier, otherwise the amplifier may be damaged. The device is powered by the amplifier. The more powerful the amplifier, the faster the fan runs and the brighter the LED lights up.
14	*[8 Ω / BY PASS / 16 Ω]* | status LED. The LED lights when the function is activated.
15	*[OUTPUT FROM SPEAKER]* | output socket for connecting a passive speaker box

4.1 Connection options



5 Technical specifications

Max. input power handling		250 W	
Input connections	Amplifier	1 × 6.35 mm jack socket	
	Power supply	Input socket for an optional power adapter	
Input impedance		8 Ω, 16 Ω	
Output connections	PA equipment/mixer	1 × XLR (low-impedance), balanced	
	Line	1 × 6.35 mm jack socket	
	Speakers	1 × 6.35 mm jack socket	
Power supply		via amplifier	
		External power adapter, 100 - 240 V ~ 50/60 Hz Operating voltage/current: 9…24 V ⎓ / min. 300 mA, polarity: Centre negative	
Dimensions (W × H × D)		235 mm × 88 mm × 179 mm	
Weight		2.7 kg	
Ambient conditions		Temperature range	0 °C…40 °C
		Relative humidity	20%…80% (non-condensing)

Further information

Noise reduction	No
DI output	Yes
Speaker simulation	No
Dummy Load	Yes

6 Plug and connection assignment

Introduction

This chapter will help you select the right cables and plugs to connect your valuable equipment in such a way that a perfect sound experience is ensured.

Please note these advices, because especially in 'Sound & Light' caution is indicated: Even if a plug fits into the socket, an incorrect connection may result in a destroyed power amp, a short circuit or 'just' in poor transmission quality!

Balanced and unbalanced transmission

Unbalanced transmission is mainly used in semi-professional environment and in hifi use. Instrument cables with two conductors (one core plus shielding) are typical representatives of the unbalanced transmission. One conductor is ground and shielding while the signal is transmitted through the core.

Unbalanced transmission is susceptible to electromagnetic interference, especially at low levels, such as microphone signals and when using long cables.

In a professional environment, therefore, the balanced transmission is preferred, because this enables an undisturbed transmission of signals over long distances. In addition to the conductors 'Ground' and 'Signal', in a balanced transmission a second core is added. This also transfers the signal, but phase-shifted by 180°.

Since the interference affects both cores equally, by subtracting the phase-shifted signals, the interfering signal is completely neutralized. The result is a pure signal without any noise interference.

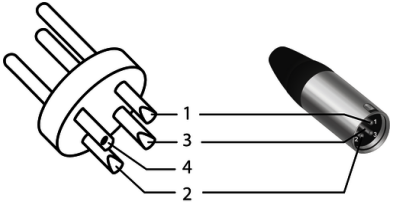
1/4" TS phone plug (mono, unbalanced)

1	Signal
2	Ground, shielding

1/4" TRS phone plug (mono, balanced)

1	Signal (in phase, +)
2	Signal (out of phase, –)
3	Ground

XLR plug (balanced)



1	Ground, shielding
2	Signal (in phase, +)
3	Signal (out of phase, –)
4	Shielding on plug housing (option)

7 Cleaning

Device parts

Clean the externally accessible device parts regularly. The frequency of cleaning depends on the operating environment: wet, smoky or particularly dirty surroundings can cause more accumulation of dirt on the device parts.

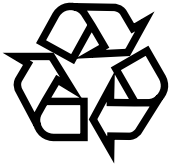
- Clean with a soft dry cloth.
- Stubborn stains may be removed with a slightly damp cloth.
- Never use cleaners containing alcohol or thinner.

Fan grids

The fan grids of the device must be cleaned of any contamination, such as dust, etc. on a regular basis. Before cleaning, switch off the device and disconnect mains-operated devices from the mains. Only use pH-neutral, solvent-free and non-abrasive cleaning agents. Clean the unit with a slightly damp lint-free cloth.

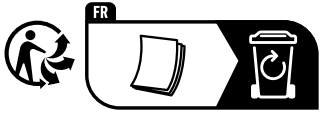
8 Protecting the environment

Disposal of the packing material



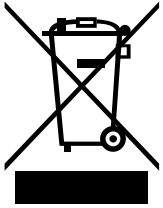
Environmentally friendly materials have been chosen for the packaging. These materials can be sent for normal recycling. Ensure that plastic bags, packaging, etc. are disposed of in the proper manner.

Do not dispose of these materials with your normal household waste, but make sure that they are collected for recycling. Please follow the instructions and markings on the packaging.



Observe the disposal note regarding documentation in France.

Disposal of your old device



This product is subject to the European Waste Electrical and Electronic Equipment Directive (WEEE) as amended.

Do not dispose of your old device with your normal household waste; instead, deliver it for controlled disposal by an approved waste disposal firm or through your local waste facility. If in doubt, consult your local waste management facility. You can also return the device to a retailer if they offer to take the device back for free or if they are legally obliged to do so. When disposing of the device, comply with the rules and regulations that apply in your country. You can also return your old device to Thomann GmbH at no charge. Check the current conditions on *www.thomann.de*.

Proper disposal protects the environment as well as the health of your fellow human beings. This is because the proper handling of old devices negates the potential negative effects of hazardous substances, and because it conserves resources by recycling them.

Also note that waste avoidance is a valuable contribution to environmental protection. Repairing a device or passing it on to another user is an ecologically valuable alternative to disposal. For example, use the classified ads of Thomann GmbH.

If your old device contains personal data, delete those data before disposing of it.