

MESA/BOOGIE®

HIGH-WIRE™ DUAL BUFFER / OUTPUT BOOST

Owner's Manual

SAFETY PRECAUTIONS:

- Read these instructions.
- Follow these instructions.
- Heed all notes and warnings.
- Do not use this device near water.
- Clean this device only with a dry cloth.
- Keep these instructions for future reference.
- Damage to this device by improperly connected and/or grounded equipment is not covered under warranty.
- This device contains no user-serviceable parts and includes components which are susceptible to damage by electrostatic discharge (ESD).
- Be sure to use only a properly rated "wall-wart" power adapter or universal pedalboard power supply, with extra attention paid to the correct polarity, voltage and current. Applying the wrong polarity, improper voltage or insufficient current to this device may cause poor and/or inconsistent tone, performance, and even damage! Refer to the CONTROLS & CONNECTIONS and SPECIFICATIONS sections for more information.
- Do not defeat an amplifier's safety ground - which is provided by the 3-prong AC power-cord plug! Doing so may not only be ILLEGAL, but it may also pose a SHOCK or ELECTROCUTION HAZARD.

Congratulations on your choice of MESA/Boogie® and welcome to the MESA® Family! The same passion for excellence, commitment to quality and dedication to customer satisfaction is present in each and every product we make in our one-and-only shop in Petaluma, California, U.S.A. Rest assured that the very same people that hand-build the finest amplifiers in the world, also built your HIGH-WIRE™ DUAL BUFFER/OUTPUT BOOST and you have access to the same resources for help that all our customers do. Call on us anytime and enjoy!

HIGH-WIRE™ DUAL BUFFER/OUTPUT BOOST

The HIGH-WIRE™ DUAL BUFFER/OUTPUT BOOST resolves the deep-rooted signal loss and inconsistent tone issues faced by guitarists due to; capacitive loading, impedance loading and mismatching, and changes to a pickup's resonant frequency/peak, as a result of varying effect pedals and interconnecting cables. It accomplishes this by providing the two constants in every guitar rig, the guitar and amplifier, with a resolute load and source, via its input buffer and output line-driver, respectively. The two circuits form an effects loop, which segregates the guitar and amplifier from the variables on a pedalboard, easily handles many pedals, interconnecting cables, and effortlessly drives a long cable run to the back-line amplifier. The input buffer converts the guitar's high-impedance signal to low-impedance, which also minimizes its susceptibility to noise, interference, and even some of the switch "popping" associated with true-bypass pedals. The output line-driver targets the inability that many pedals, and even some buffers have, which is to adequately drive a very long cable run to a back-line amplifier. As a result, the only variations in sound and tone will be from the actual effect of the pedals on the pedalboard, and not from a guitar or amplifier related loading or impedance mismatch issue.

The input buffer is a 100% discrete Class-A circuit with an input

impedance and other finely tuned characteristics which mimic that of a high quality tube amplifier, and it includes an RFI filter to minimize the possibility of radio-frequency interference and noise. It presents a dynamically ideal load to a guitar that remains steadfast, resulting in a tone that is consistent, while still allowing the guitar to breathe, live, and react - like plugging directly into the front of a tube amplifier.

The integrated output line-driver circuit is capable of driving a long unbalanced cable run, via shielded 1/4" TS instrument cable. It also incorporates a mini-toggle fixed boost, and a stomp-switch selected variable boost, to slightly increase the level reaching a back-line amplifier (making up for any losses or compensating for different guitars), and to drive the amp's input harder!

A dual-function STOMP switch allows selecting the variable BOOST, or a MUTE for silent tuning and guitar changes. To activate the variable boost, as set by the BOOST knob, simply press the STOMP switch, a blue BOOST LED indicate's when it's on. Press the STOMP switch again to turn it off. To activate the MUTE, hold down the STOMP switch for about 3/4-of-a-second, a red MUTE LED indicate's it's on. Press the STOMP switch again to exit the MUTE mode, and the HIGH-WIRE™ DUAL BUFFER/OUTPUT BOOST will return to on or off BOOST state it was in, prior to activating the MUTE.

The HIGH-WIRE™ DUAL BUFFER/OUTPUT BOOST's strategic first-in last-out position in the audio signal path also allows it to provide a compact and convenient consolidation point for the two most commonly used pedalboard audio connections. And thanks to its dual-PCB analog-goodness design, it will stand tall at the "typical" top-right corner of a pedalboard - without the need for a pedal-riser.

CONTROLS & CONNECTIONS

It's always a good idea to make any audio connections with every piece of equipment in a guitar rig turned off, or at least the amplifier volume(s) turned down, to avoid loud bursts of sound from damaging speakers or other components.

For optimal results in the preservation of a guitar's tone, and allowing it to reach an amplifier with steadfast consistency, the HIGH-WIRE™ DUAL BUFFER/OUTPUT BOOST should ideally be the first device the guitar is plugged into, and the last device connected to the amplifier's input.

NOTE: A few vintage fuzz pedals will function and sound differently when connected directly to the guitar because they are meant to be fed with a high-impedance signal source, as opposed to a low-impedance signal source, which is why they need to be used first in the signal path. It's recommended that such pedals either be modified with true-bypass switching, if not already so equipped, or used in conjunction with a true-bypass loop-box to ensure the pedal is completely bypassed when not in use.

IN: This 1/4" phono jack is the input and accepts the signal from a guitar. It feeds the discrete Class-A buffer circuit.

SND: This 1/4" phono jack is an output (SEND) and provides a buffered low-impedance signal from the discrete Class-A buffer circuit. Connect this jack to the input of the first pedal on a pedalboard. When the MUTE is on/active, this jack will silence the pedal inputs, allowing for any time-based effect pedals such as a delay, echo and/or reverb, to trail-off naturally, instead of ending abruptly.

RTN: This 1/4" phono jack is an input (RETURN)

and accepts the signal from the output of the last pedal on a pedalboard. It feeds the integrated line-driver circuit. When a 1/4" plug is not inserted, it is normalled to the SEND jack, and the input signal will be routed through both circuits to the OUTPUT jack.

OUT: This 1/4" phono jack is the output and provides a buffered low-impedance signal from the integrated line-driver circuit. Connect this jack to the input of an amplifier using a shielded 1/4" TS instrument cable.

TUNER: This 1/4" phono jack is an output (TUNER), it's always on, and provides a buffered low-impedance signal from the discrete Class-A buffer circuit. Connect this jack to the input of a tuner - keeping it out of the signal chain.

Note: When using shielded 1/4" TS (tip & sleeve) instrument cables, always aim for the best quality and shortest length possible.

9VDC IN: This standard female DC receptacle is the external power supply jack and accepts a 2.1mm x 5.5mm male barrel connector from a standard 9Volt DC "wall-wart" power adapter or universal pedalboard power supply, with a NEGATIVE CENTER polarity plug. Refer to the SPECIFICATIONS section for additional information.

Note: An external DC "wall-wart" power adapter is not included.

WARNING: To avoid immediate damage to this device and voiding the warranty, do NOT connect an AC-Voltage, or ANY other DC-Voltage power supply to this jack, other than that specified above and in the SPECIFICATIONS section!

STOMP SW: This dual-function STOMP switch allows

selecting the variable BOOST, or a MUTE for silent tuning and guitar changes. To activate the variable boost, as set by the BOOST knob, simply press the STOMP switch, the blue BOOST LED indicate's when it's on. Press the STOMP switch again to turn it off. To activate the MUTE, hold down the STOMP switch for about 3/4-of-a-second, the red MUTE LED indicate's it's on. Press the STOMP switch again to exit the MUTE mode, and the HIGH-WIRE™ DUAL BUFFER/OUTPUT BOOST will return to on or off BOOST state it was in, prior to activating the MUTE.

MUTE LED: When illuminated, this red LED indicates the MUTE is on/active.

BOOST LED: When illuminated, this blue LED indicates the variable BOOST is on/active.

BOOST KNOB: Adjusts the amount of boost from the integrated output line-driver circuit, from Unity to +22dB.

LEVEL COMP: This mini-toggle switch provides a fixed boost of +3dB from the integrated output line-driver circuit, to make up for any losses or to compensate for different guitars.

FAQ & HELPFUL HINTS

Can I use the HIGH-WIRE™ DUAL BUFFER/OUTPUT BOOST for my bass?

Yes you can!

I'm using a switched-mode power adapter/supply (SMPS) and hear a high pitch "whine", why is that?

Some of these SMPS adapters are noisier than others, especially those that aren't from a reputable or brand-name

MI manufacturer. Another reason could be that you're trying to run to many devices from a single adapter. Though many of them have a high current output and tout being able to power many devices, doing so can result in the development and/or increase of noise, for some reason. If this is happening, we recommend either trying another adapter, or better yet - using a universal pedalboard power supply with enough isolated outputs to power every device on your pedalboard individually; better power = less noise = more tone!

What's the maximum length of cable I can use between my guitar and the HIGH-WIRE™ DUAL BUFFER/OUTPUT BOOST's input?

Always aim for the best quality and shortest length possible shielded 1/4" TS instrument cable between the guitar and buffer, but also keep in mind that zero capacitance is not ideal, or practical. It's safe to say that there's no way a pickup has been designed without expecting there to be some length of cable, and therefore capacitance, hanging off the output of a guitar. A certain amount of cable capacitance is good, and necessary! We're not trying to eliminate it, but we are trying to control and prevent it from changing unexpectedly. So if you can afford it, experiment with a variety of brands and lengths, to fine-tune the tone, until you find what suits your tone best! There's no one-size-fits-all cable length, but generally speaking shorter cables will yield a brighter tone, and longer cables will yield a darker tone. Once again the key is consistency, so when you've made your choice, always use the same cable.

I would like to use a vintage fuzz pedal, but have been told that they don't work well with buffered signals, is this true?

These pedals will function and sound differently when con-

nected directly to the guitar because they are meant to be fed with a high-impedance signal source, as opposed to a low-impedance signal source, which is why they need to be used first in the signal path. It's recommended that such pedals either be modified with true-bypass switching, if not already so equipped, or used in conjunction with a true-bypass loop-box to ensure the pedal is completely bypassed when not in use.

Where exactly is the MUTE circuit located within the HIGH-WIRE™ DUAL BUFFER/OUTPUT BOOST?

The MUTE circuit is located at the SEND jack. This allows for any time-based effect pedals such as a delay, echo and/or reverb, to trail-off naturally when the MUTE is activated, instead of ending abruptly.

What's the maximum length of cable that the HIGH-WIRE™ DUAL BUFFER/OUTPUT BOOST can drive?

Cable runs to a back-line amplifier between 20-100ft should not be an issue, but ultimately the maximum length will be determined by the construction quality of the cable and/or how "noisy" the venue is where the gear is being used. As mentioned elsewhere; "...when using shielded 1/4" TS instrument cables, always aim for the best quality and shortest length possible..."

Can I use the HIGH-WIRE™ DUAL BUFFER/OUTPUT BOOST as a 3-way splitter for two amps and a tuner?

You certainly can, but keep in mind that under some circumstances, the drive capabilities of the SEND and TUNER jacks might not be as robust as the OUTPUT jack. Additionally, the SEND, TUNER and OUTPUT jacks are not transformer isolated, so it would be necessary to use

a CLEARLINK™ CONVERTER/ISO TRANSFORMER in front of one amplifier, to prevent the hum and noise that would occur as a result of the ground loop that's always created when running multiple amplifiers.

Why wasn't a transformer isolated output provided, for splitting or ground loop elimination applications?

A transformer isolated output was not included in the design for several very good reasons; (i) fact is, the noise immunity and signal integrity provided by a specially designed and shielded audio isolation transformer at the end of a long cable run is far more superior than that provided by a transformer at the beginning, worst-case is it's just as good (ii) we know from previous buffer/splitter designs that not everyone makes use of a transformer isolated output; so instead of including a great, and very expensive transformer, and of course having to charge for it - we made it optional via our passive CLEARLINK™ CONVERTER/ISO TRANSFORMER (iii) the primary utilitarian design goal of the HIGH-WIRE™ DUAL BUFFER/OUTPUT BOOST was to provide the two constants in every guitar rig, the guitar and amplifier, with a resolute load and source, via its input buffer and output line-driver, respectively (iv) pedalboard real estate - specially designed and shielded audio isolation transformers are not small, so you won't see (or hear them) in any sub-compact buffers (v) finally, experience has also taught us that a good number of people who start off with signal splitting, soon wish or opt for devices that provide them with the ability to split AND switch each output on and off individually.

SPECIFICATIONS:

- Input Impedance: 1Mohm
- Output Impedance: 150ohm
- Input Buffer Design: Discrete Class-A
- Output Buffer Design: High-Speed Low-Noise Op-Amp
- Nominal Operating Voltage: 9VDC
- Maximum Operating Voltage: 12VDC
- Typical Current Draw: 55mA @ 9VDC
- DC Adapter (Optional): 2.1 x 5.5mm Barrel Plug, Negative Center
- Weight: 0.743 lbs (337 g)
- Dimensions (W x D x H): 2.48 x 4.48 x 2.06 inch (63 x 114 x 52 mm)

NOTE: Device specifications are subject to change without notice.

MESA/BOOGIE
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Application Diagrams are available at www.mesaboogie.com