



HIGH-END HANDCRAFTED MIC PREAMPS, MICROPHONES & DI BOXES

THE
MIGHTY G™
SE-D.I.3
D.I. BOX

MINI HANDBOOK

and

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Thank you for purchasing your **MIGHTY G™** (SE-D.I.3) D.I. box(es). It's always challenging to make the right decision when buying gear for one's recording facility or live set up. We're glad to have this opportunity for you to own and use some sage gear ~ and hope you will be too !

The **MIGHTY G™** is a unique and elegant direct insertion box.

The **MIGHTY G** was designed and built by sage ELECTRONICS' founder, builder and record producer Phillip Victor Bova in partnership with Quentin Meek of QZIC Engineering Inc. Here are some of their thoughts about the **MIGHTY G** :

The **MIGHTY G™** is built to last a very long time
~ like all sage gear, we suggest that Folks put 'em in their will !

MIGHTY Gs are very simple to use but even with simple things it's important to be aware of a few dos and don'ts.

When you first unpack these new toys ~ carefully inspect them to make sure UPS or FEDEX haven 't dropped 'em off the back of a semi at 60 miles / hour. There should be no dents, scuffs or loose items rolling around the inside of the unit(s) that might indicate foul play ...

Your package should include;

- the number of **MIGHTY G** SE-D.I.3s ordered
- this CDR and / or paper handbook / warranty

please feel free to contact us at any time at;

sage

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SE-D.I.3 and MIGHTY G are trademarks of sage ELECTRONICS®. Serial numbers are located on the rear and / or side of each unit. We suggest that you record your serial number(s) in the space(s) provided below. Refer to it / them whenever you contact us ~ or an authorized repair service.

Features and specifications subject to change without notice.

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serial _____

purchase date: _____

purchased from: _____

PRODUCT FEATURES / SPECS

The **MIGHTY G™** is a robust germanium transistor direct insertion box [DI] designed to be plugged directly into all electric and acoustic instruments with electromagnetic and piezo-type pickups. Keyboards, stompboxes and vintage effects such as tape echoes also benefit from the **MIGHTY G**. It converts input signals to a robust balanced output capable of driving signals over long cables to mic preamps and recording or live mixing consoles without loss of signal quality. The **MIGHTY G's** direct insertion design minimizes or eliminates radio frequency interference [RFI] and electromagnetic interference [EMF] commonly suffered by musicians, studio engineers and live sound mixers. This design also eliminates the tone robbing effects of guitar cables by ...eliminating the 1/4" cable !!!

It features:

- all discrete components Class A design ... no ICs [integrated circuits]
- transformerless design features mil spec germanium transistors
- high impedance input ~ eliminates loading signal source
- truly [not quasi] balanced outputs capable of driving long signal lines
- hand wiring ~ contains no unreliable internal connectors or DIP switches
- rugged diecast aluminum enclosure
- powered solely by 48 volt phantom power
- toggle style ground lift switch by Alco
- all input and output connectors by Switchcraft
- 20Hz to 20Khz +/- 1 db ref 1Khz frequency response

INTERFACE

- input: 1/4 inch male (input jack insertion switch prevents plug in thumps)
- output to amp: 1/4 inch female
- balanced output: 3 pin male XLR

MISCELLANEOUS

- dimensions 3.248" [87.73 mm] X 1.516" [28.50 mm] X 1.220" [35 mm]
- weight: 0.5 lbs
- designed and manufactured (by hand and brain ...) in Canada
- each **MIGHTY G** is subject to lengthy burn-in period - for maximum reliability
- one year warranty

CHARACTERISTICS

The **MIGHTY G**[™] produces a flattering sound quality due to the total absence of loading of the signal source. Additionally, its germanium transistors contribute an almost magical sonic presence not heard in passive transformer and IC [integrated circuit] direct box designs. Users remark that their instruments produced both deeper and brighter tone than they had previously experienced. In fact these qualities of their instrument had always been there ... just never heard before !

PRODUCT OPERATION

'WHY DO I NEED A DIRECT BOX?'

A 'DI' box is an electronic interface to which the direct electronic outputs of electronic musical instruments are connected for further routing / processing.

In the real world a direct box solves many problems that routinely occur in the hectic environments of studio recording and live stage performance. The **MIGHTY G** direct box optimizes the signal transfer from an instrument, by electronically conditioning the audio signal so it can be routed long distances without the signal quality degrading due to extreme cable length. This is very important in environments infested with radio frequency, electromagnetic and other types of interference.

"Soooooooo ... you might ask: why would anybody actually need a direct box? ... Why not just plug your instrument into an amp and mic it up?" Well, in the case of a great musician, playing a great electric guitar or bass plugged into a premium amp, mic-ed with the perfect mic in the perfect room with no annoying leakage from other nearby amplifiers, it could be argued that there's little need for a direct box. Although this sentiment might have been valid back in the day, there are many new and exciting trends in recording and live sound which demand using a great sounding direct box alongside traditional mic-ing. In many cases a direct box completely replaces a mic altogether.

Virtual Rigs

For example, today an increasing number of musicians are using "virtual rigs" running on their laptop or desktop computers. This makes the quality of a direct box mission critical, as it is the only thing between your instrument and analog-to-digital interface. Although some interfaces do offer a "Direct Input" these are typically not great sounding. The **MIGHTY G** is the ideal "virtual rig" front end. In addition to the interference busting capabilities mentioned earlier, The **MIGHTY G** does one other unique thing that old school on-the-floor direct boxes just can't match. Plugging the **MIGHTY G** directly into your instrument kills all of the tone robbing effects of standard 1/4" cables ... by simply eliminating them.

Acoustic Instruments

Acoustic musicians need to be able to play their instruments onstage without feedback, but also without sacrificing tone quality. Although pickups for acoustic instruments have really improved in the last ten years, many DI's haven't kept up with artist's requirements. The superb sonic qualities of the **MIGHTY G** ensures great sound quality from your instrument wherever you perform, whether studio or live. Never let your sound be at the mercy of cheap DIs.

Re-Mic-ing

These days many top producers and engineers are routinely using a technique called re-mic-ing. In addition to the normal mic-ing of a guitar / bass amp, a direct feed from the instrument itself is taken using a direct box. This allows the artist's performance to be routed through different amps and re-miced at a later time ! This approach facilitates many creative mic-ing approaches not practical during live tracking due to leakage and other issues. The **MIGHTY G** provides a great re-mic-ing front end.

CONNECTING THE **MIGHTY G**™

Plugging into the **MIGHTY G** is pretty simple. Insert the **MIGHTY G**'s 1/4 inch male input jack into your instrument's output jack, then patch a balanced XLR mic cable from the male XLR output of the **MIGHTY G** into the female XLR input of your mic preamp or live / recording console. Turn the volume pot on your instrument all the way up, adjust the gain control knob on your mic preamp until the metering on your destination device is at a proper level (hot but not clipping on signal peaks) and play away !

please note: The output jack on some guitars is deeply recessed, making it impossible to plug the **MIGHTY G** in all the way. sage ELECTRONICS makes an ultra-short flexible male to female 1/4" extender cable that will enable your **MIGHTY G** to reach normally inaccessible places. Please contact us.

You may occasionally run into a situation where even the lowest setting of the gain control knob [fully counter-clockwise] on your mic preamp still results in an output level which is too hot for your destination device. This is easily remedied by activating the MIC PAD SWITCH on your mic pre. This attenuates the input signal by a set amount ... usually 10 or 20 db. Again adjust the mic gain control knob to establish a proper output level. Some mic preamps such as the sage SE - Pre 1™, Millenia Media and a few others can withstand virtually any input signal they encounter and therefore do not need to include a pad switch in their designs. Just turn their gain control knobs down to achieve the appropriate output level.

USING THE **MIGHTY G** WITH GUITARS & BASSES WITH PASSIVE PICKUPS

If up until now you have been plugging your passive Fender P or J Bass, Strat or Les Paul into a cheap passive transformer DI, you're in for a real treat when you experience the active germanium transistor electronics of the **MIGHTY G™**

Acoustic guitars and other instruments with piezo pickups will love the **MIGHTY G** ... It extracts the best tonal balance possible from your instrument, One early user commented that the first time she plugged through a **MIGHTY G**, her old strings sounded new again.

USING THE **MIGHTY G** WITH GUITARS & BASSES WITH ACTIVE PICKUPS

In recent years, many guitars, basses and acoustic guitars have been manufactured with onboard active [powered] electronics, typically run from a 9 volt battery. This allows more sophisticated tone controls than possible on passive [non powered] electronics based instruments. Also the signal output level from active electronics is often higher than from passives.

Turning up the guitar's output control all the way and beating your strings unmercifully can produce very high output levels which can even create distortion within the guitar's own electronic circuitry, even before it has left the instrument ... this is basically very bad. The problem is made worse because this loud, already distorted signal can overload the input of almost any direct box to which the instrument may be interfaced ... doubly bad !!! The solution is to turn the instrument output level down. Reducing from 10 to 6 or 7 usually works perfectly.

Even in the case of extreme signal level conditions such as slapping a 6 String bass silly ~ **MIGHTY G™** will retain its graceful mighty sound qualities. However under insane transient attacks, say in the case where someone uses a string plucking attack more appropriate for a bow and arrow ... the **MIGHTY G** has been designed to clip smoothly much like a vacuum tube and then instantly recover its electronic composure.

USING THE **MIGHTY G** WITH ELECTRONIC KEYBOARDS

Keyboards such as synths, samplers, Rhodes and Wurlitzer electric pianos typically provide a 1/4" **unbalanced output signal** suitable for plugging into a stage amplifier. Unfortunately most are lacking the 3 pin male XLR **balanced output** that is required to interface with a mic preamp or live / recording. The **MIGHTY G™** effortlessly transforms the signal from your keyboard into this professional standard while still providing a parallel 1/4" female output jack to feed a stage / monitor amp if required. Some electronic keyboards have a very high output level when their volume pot is turned up all the way. If this produces distortion, turn the output level control down to eliminate this problem.

GROUND HUM PROBLEMS

Sometimes when your **MIGHTY G™** is connected to both a mic pre or live / recording stage console as well as a stage amp, you may experience a low frequency [60 hz] hum. This is caused by a **ground loop**. Without getting too technical, a ground loop occurs when multiple paths to ground exist between two or more pieces of electronic equipment. A bit of 60 hertz [plus harmonics] AC power is now unfortunately part of the signal path. In situations where there is lots of gain this can result in a very loud sound! To solve this problem, just flip the **Ground Lift Switch** on the **MIGHTY G™** to the lower (**Off**) position and the hum should disappear.

As a point of interest, grounding problems are very common in home studios where much of the gear is connected with unbalanced cabling, whereas in pro studios with all balanced connections grounding issue are typically absent. Some folks recommend a quick fix by removing the third pin from the AC plugs of some or all of their gear to solve hum problems. While this may appear to work please remember that this action is potentially dangerous to your safety, will invite every radio wave from here to Alpha Centauri to invade your gear, is probably contrary to any area electrical code and will likely invalidate your property insurance in cases of fire or electrocution caused by this procedure. A proper grounding plan for your studio setup should eliminate ground problems. You can find lots of info about this on the internet.

Please note:

Don't plug the output of a power amp, guitar amp or similar into **MIGHTY G™**. The extremely high level signals will damage the unit. If you find yourself needing this signal routing option please contact us. We will gladly sell you a simple external adapter unit at a nominal price that will attenuate the amp output to a level appropriate for the input of the **MIGHTY G™**. If you are the DIY type, we'll be glad to send you plans to build one yourself. If in doubt about your soldering skills, hire an electronic tech with stage / recording experience [always good to know at least one !] who can wire up the adapter you need.

WARRANTY

sage ELECTRONICS® warrants its products to be free from defects in material and workmanship under normal use and service for a period of one (1) year from the date of purchase. This warranty extends only to the original purchaser. This warranty does not apply to fuses, lamps, batteries, cables, or any products or parts that have been subjected to misuse, neglect, accident, or abnormal operating conditions.

In the event of failure of a product under this warranty, sage ELECTRONICS® will repair in Canada, at no charge, the product returned to its factory. sage ELECTRONICS® may, at its option, replace the product in lieu of repair.

This limited warranty covers failures due only to defects in materials and workmanship which occur during normal, intended use and does not cover damage which occurs in shipment or failures which are caused by products not supplied by sage ELECTRONICS®. This limited warranty does not cover failures which arise from accident, misuse, abuse, neglect, mishandling, misapplication, faulty installation, improper adjustment, alteration or modification of product, incompatibilities, line-power surges, acts of God, or service performed by anyone other than sage ELECTRONICS® or its authorized agent.

If the failure has been caused by misuse, neglect, accident or abnormal operating conditions, repairs will be billed at the normal shop rate. In such cases, an estimate will be submitted before work is started, if requested by the customer.

LIMITS AND EXCLUSIONS

There are no express warranties except as listed above. sage ELECTRONICS® shall not be liable for special, subsequent, incidental, consequential, or punitive damages, including, but not limited to: damage to recordings, microphones, mixing consoles, or any associated equipment, downtime costs, loss of goodwill, or claims of any party dealing with purchaser for such damages resulting from the use of this product. All warranties, express and implied, including the warranties of merchantability and fitness for a particular purpose are limited to the applicable warranty period set forth above

Some provinces / states do not allow the exclusion or limitation of incidental or consequential damages, or length of time an implied warranty remains in effect. As such, the above exclusions may not apply. This warranty gives you specific legal rights and you may also have other rights which can vary from province to province ~ state to state.

Should your sage ELECTRONICS® product require service or repair please email us at: sage@sageelectronics.com or call us at (613) 228-0449 ~ with the following information:

- * your name
- * your return shipping address
- * your telephone number(s)
- * your product's model number (example: SE-D.I.3)
- * your product's serial number (located on side or rear of chassis)
- * date and location of purchase
- * description of problem or the service required

Upon sage ELECTRONICS® receipt of the above information from you we will provide you with your return authorization number. From this point we ask that you please;

- **pack your unit carefully.** Use your original packing if possible. If you do not have the original packaging, make sure your unit has adequate protection. Tight thick bubble wrap and foam is best if you do not have the original packing
- **include a note in the box** describing your problem or the service that your unit requires. Be sure to **include your return authorization number** on this note
- **write your return authorization number on the outside of your package / carton**
packages without a return authorization number will be returned to sender
- **Customer is responsible for paying shipping and insurance to sage ELECTRONICS®.** sage ELECTRONICS® will pay the return freight and insurance via FEDEX ground or Canada Post.

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