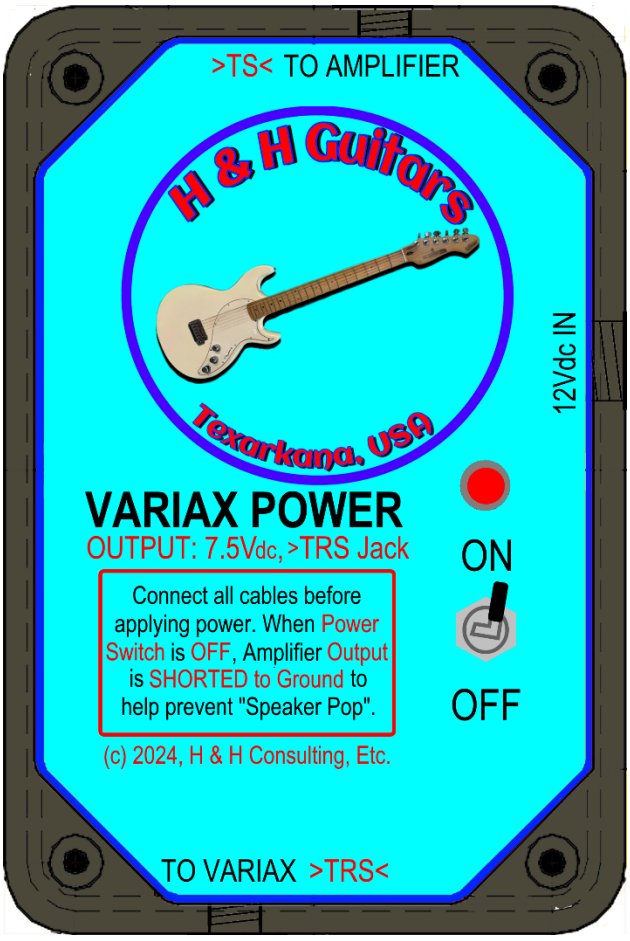
Variax™ (7.5Vdc) Guitar Power Unit

(Battery Substitute)

VGP-1



USER'S GUIDE

H & H Guitars

A Subsidiary of H & H Consulting, Etc.

Texarkana, U.S.A.

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Publication VGP-1UGC-240731

Fill in the information from your VGP-1 and save for your records

VGP-1

WARRANTY INFORMATION

Serial Number: _____

Date of Purchase: _____

Date Warranty Card Sent: _____

DESCRIPTION

The Variax Guitar Power Unit (**VGP-1**), designed and built by H & H Guitars, is designed to provide stable 7.5V Direct Current (DC) power to any of the various models of **LINE6 Variax™** Guitars via a TRS (stereo) cable connection.

As the **LINE6 Variax™** line of guitars and accessories has been discontinued, it is becoming increasingly difficult (and expensive) to find replacement parts. Among the most used (and frequently lost or damaged) accessories is the external power supply that came with the original guitar bundle. For the 300 series, this was the **XPS-Mini™**, and for the other 6-string models, the **XPS-A/B™**. Bass models came with the **XPS-DI™**. All of these units provide approximately 7.1Vdc power (via a cable) to the guitar to which it is connected. The **VGP-1** supplies slightly more power, which is discussed later in this guide.

The following Variax™ models are compatible (and have been tested) with the VGP-1: 300 (Electric, Acoustic-Steel and Acoustic-Nylon), 500, 600, 700/705 (Electric, Acoustic and Bass), JTV-59, JTV-59P, JTV-69, JTV-69S, JTV-89, JTV-89F, and Shuriken SR250/270.

To be able to play out without worrying about battery life, we developed the design of the **VGP-1** and tried to make it as useful as possible without any extra features. It is also designed to be as inexpensive as possible, so potential loss or damage isn't of great consequence. Finally, being small and light enough to be used in a wireless setup (see addendum for specifics) was an important part

of the overall concept.

The **VGP-1** is comparable to the OEM (LINE6) **XPS-Mini™** power supply (originally supplied with the 300 series guitars) in that it simply provides power to the guitar and doesn't act as an output 'A-B' switch as the more common **XPS-AB™** that was included with most of the Variax™ models, nor does it include a 'ground lift' feature like the 'DI.' Similar to the 'Mini,' it is also able to supply more power than the **XPS-AB™/DI™**, which is needed by some of the older models (300 Series in particular).

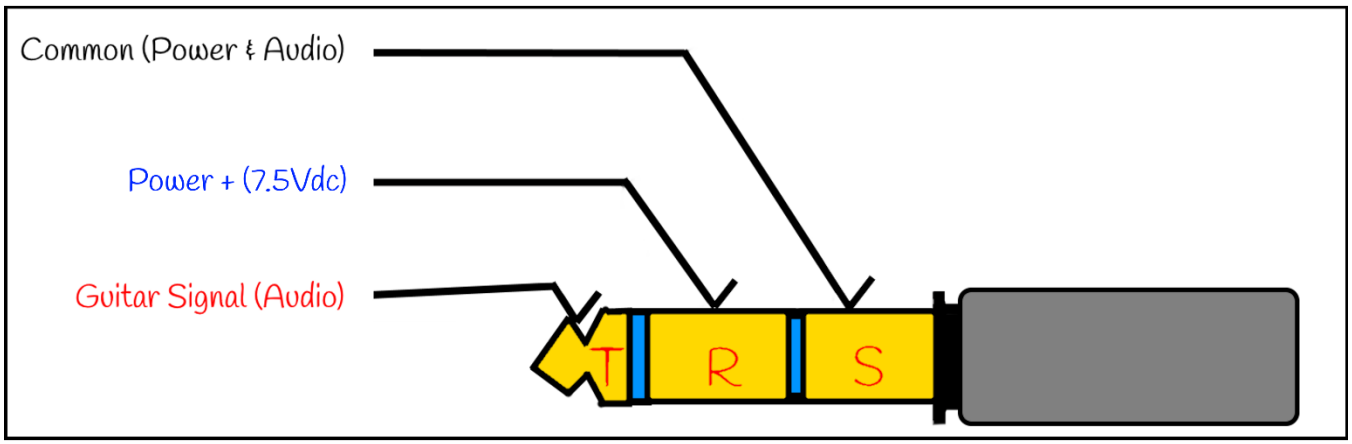

DIAGRAM 1

As mentioned above, power is supplied to the guitar via one channel of a standard Stereo instrument cable, also known as a TRS cable. This refers to the configuration of the ¼" (6.35mm) plug on both ends of the cable, specifically to the configuration of Tip, Ring and Sleeve used to pass signals and, in this case, power between the guitar and the **VGP-1**. See DIAGRAM 1, above. Along with supplying power, the guitar signal is also carried to the Power Unit where it is routed to the Amplifier jack, which uses a Mono instrument cable (also known as a TS cable) that is connected to a

guitar amplifier (or other Audio input) to be heard and/or recorded as desired. The following simplified connection diagram shows the general sequence of connections necessary to operate the **VGP-1** correctly.

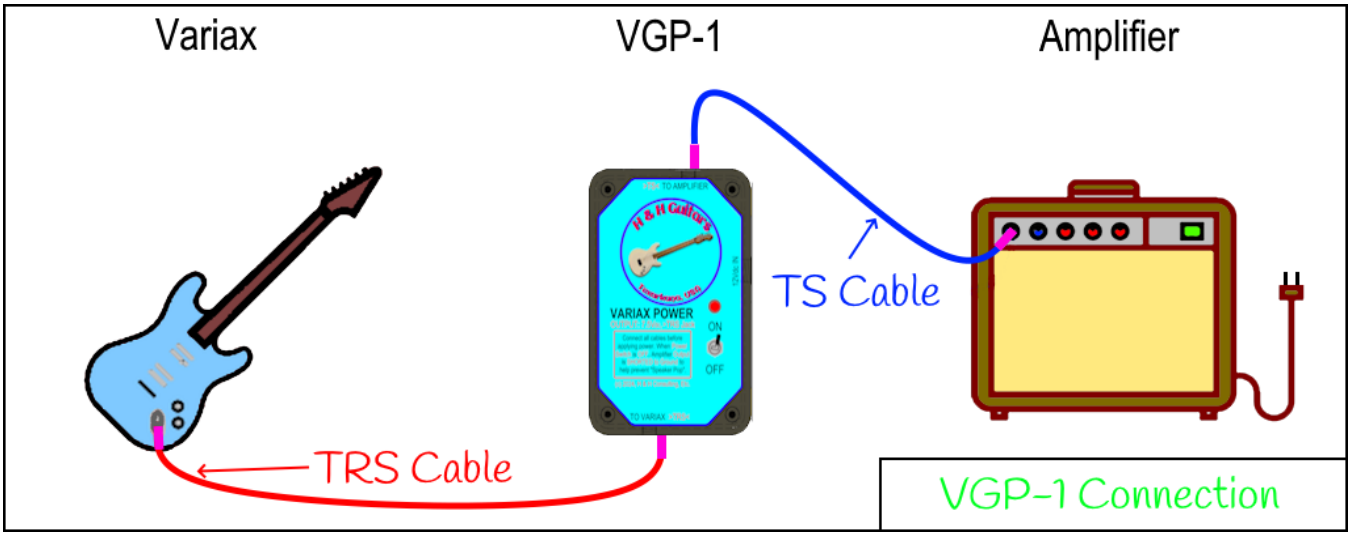

DIAGRAM 2

LINE6 Variax™ guitars can be powered from several sources, using 3 different connection points (TRS, RJ-45, and battery). These different sources also supply different voltage levels, as in the following overview:

⊗ Batteries: 9.0Vdc (1st Generation, 300, 500, 600, 700).
7.4Vdc (2nd Generation, or JTV/Shuriken).
⊗ XPS Boxes: 7.1Vdc (AB, DI, and Mini).
⊗ LINE6 pedalboards: 7.1-8.1 Vdc. (depending on pedalboard).

The electronics inside **LINE6 Variax™** guitars use voltage regulators to keep the applied voltage within the range that will power the guitars without causing heating or damage to the electronics. This regulation allows the guitars to safely accept the

different voltages supplied by items in the above list. If the voltage presented is more than approximately 7.0 Vdc, the excess is regulated, or controlled by the electronics. The VGP-1 supplies 7.5Vdc, which is enough to force minimal regulation (for stability) while not allowing the voltage to drop below a safe and useful value. This also allows the use of a slightly longer TRS cable than the 12' specified by **LINE6** as a maximum length. We have successfully (and extensively) used a 33' cable with the **VGP-1** and had no loss of power to the guitar.

OPERATION

If you are familiar with the operation of the **XPS** series of power supplies that were supplied with the original **LINE6 Variax™** guitars, the **VGP-1** works in a very similar manner. Obviously, there is no output switch function as with the **XPS-AB**, nor a 'ground-lift' function as with the **XPS-DI**, so, as stated before, you can most closely compare the **VGP-1** to the **XPS-Mini**. With small differences, the **VGP-1** can be used to replace the '**Mini**.'

One difference to note is that the **VGP-1** connects the audio signal to ground when the Power Switch is turned *OFF*. Therefore, if you turn it *OFF* before plugging the guitar in or out, it is silent (unlike the original XPS units, which do not have a Power switch).

It is important to use the following procedure when connecting your equipment to the **VGP-1**. This will prevent shorting (even momentarily) the power running to the guitar when the TRS plug is inserted into the guitar or the **VGP-1**.

The connection procedure uses the following 5 components:

①your **Amplifier** (or other audio device),
②a **TS cable** (amp to **VGP-1**),
③your **VGP-1**,
④a **TRS cable** (**VGP-1** to the **Variax™**), and
⑤your **LINE6 Variax™ guitar.**

Beginning with all components disconnected and powered off, use the following sequence to 'plug in':

1) Plug the TS cable into the "Amp" jack of your **VGP-1**.
2) Plug the TS cable into the Input of your Amplifier.
3) Plug the TRS cable into your **Variax™**.
4) Plug the TRS cable into the "Variax" jack of your **VGP-1**.
5) Insert the Power plug into the "12V" jack of the **VGP-1**.

Now that you're connected:

6) Turn your Amplifier ON.
7) Turn your **VGP-1** ON.

You're now connected and powering the Variax.

ROCK ON!

SPECIFICATIONS

The **VGP-1** can supply up to 3 amps @ 7.5Vdc, or 22.5 watts of continuous DC power. To accomplish this, the regulated Switching AC Adapter that came with your **VGP-1** is rated for 12Vdc @ 2 amps, or 24 watts. It has a center-positive plug (2.1 X 5.5mm) to connect to the "12Vdc IN" jack of your **VGP-1**.

LINE6 Variax™ guitars require around 325ma. of power at 7.1 Vdc when powered through the TRS (¼") jack. It is important to be sure that the power source has enough power to operate safely. Almost any regulated, filtered AC Adapter that supplies 12Vdc@750mA or more, and can be plugged in correctly can be used to power the **VGP-1**, with certain exceptions. If a non-original AC Adapter isn't regulated and filtered, it can introduce noise into your signal chain, and shouldn't be used. If it doesn't supply enough power (500mA delivered to the **VGP-1** is the minimum), your **Variax**™ may operate intermittently and possibly be damaged. Do not use an "under-rated" (less than 750mA) Adapter. Replacement AC Adapters, along with other parts, are available from H & H Guitars, as priced in a following section.

PARTS AND REPLACEMENTS

A list of all parts and accessories available for your VGP-1 is included at the end of this User's Guide. To be sure that the list and pricing is current, email sales@hhguitars for an up-to-date list. Let us know if there are any additional items you want or need.

WARRANTY

THE STIPULATIONS OF THE WARRANTY FOR THE VGP-1 ARE:

To the Original Purchaser only, Repair or Replacement for 90 days from date of purchase. Loss or Damage are not covered under this warranty. **Original Purchaser** is determined by return of the completed **Official Warranty Card. Date of Purchase** is determined by sales records maintained by H & H Guitars.

In the event of a Warranty claim, contact H & H Guitars for an **RAC (Return Authorization Code).** H & H Guitars (or their duly appointed representatives) will solely determine the cause and appropriate remedy, and proceed accordingly.

For out-of-warranty repairs, contact the Service Department of H & H Guitars for instructions and authorization to send your item(s). H & H Guitars (or their duly appointed representatives) will solely determine the cause and appropriate remedy, and respond with a cost estimate before proceeding with repairs.

H & H Guitars reserves the right to repair or replace, at our discretion, any affected part or assembly that is returned to us for Warranty (or other) repairs.

See mailing and email addresses on back cover for assistance.

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Addendum – Optional Accessories

Wireless Conversion

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Optional Accessories – Wireless Conversion

Your **VGP-1** is fully capable of driving a wireless Tx/Rx system as purchased, but with the power connection still tying you to an electrical outlet, you won't have a truly wireless setup. To upgrade and allow wireless devices to be used effectively, the power input (12Vdc) can be connected to a 12Vdc Battery Pack (**EPU-1**). This eliminates the Power wiring to the **VGP-1**. Then, a standard wireless Transmitter (Tx) can be plugged into the 'Amp' jack of the **VGP-1** to transmit the **Variax**™ signal to a corresponding Receiver (Rx) at the amp. Finally, you will need a short TRS cable, so you're not carrying a long TRS cable around with you.

H & H Guitars offers products to help you to achieve this:

1) A Battery Pack (**EPU-1**) that uses standard 'AA' batteries and plugs directly into the Power Jack of your **VGP-1**.
2) A 12" TRS cable to connect your **Variax**™ and **VGP-1**, *or*
3) A **Carrier/Pouch** (w/Integrated **TRS121** Cable).
4) And, optionally, we can supply a wireless Tx/Rx system.

This upgrade has several requirements for operation. First, of course, is that the **VGP-1** is complete and operational when connected normally (with TRS and TS cables). Second, your wireless Tx/Rx system must be able to operate correctly when connected to the output (TS) Jack of your **VGP-1**. And, you will need a short TRS cable to connect the **VGP-1** to your **Variax**™.

EPU-1 By connecting the Battery Pack (**EPU-1**) to your **VGP-1** as the source of power, and replacing the output (TS) cable with

a wireless transmitter, you are no longer attached to any stationary equipment, and your effective, virtual cable length is the range of the wireless Tx/Rx system you are using. The short TRS cable is to make it easy to connect your **Variax**™ with a cable that moves with you on stage.

The **EPU-1** is designed to be powered with 8xAA standard (alkaline) batteries. Do not use standard rechargeable AA batteries, as the voltage may not be sufficient to power your **Variax**™. However, 1.5Vdc Rechargeable AA Batteries are available, and should be used in your EPU-1 to supply 'rechargeable' power.

The **EPU-1** has its own power switch, so be sure to have it *ON* when checking out your setup. It is recommended that this switch remain *ON*, as turning your **VGP-1** *OFF* is the recommended way to connect/disconnect your setup (see **VGP-1** manual for specifics). No power is drawn from the **EPU-1** when the **VGP-1** that it powers is switched *OFF*, so in normal use the switch on the **EPU-1** is redundant. However, be sure to turn the **EPU-1** *OFF* when storing it, and it is recommended that the alkaline batteries also be removed.

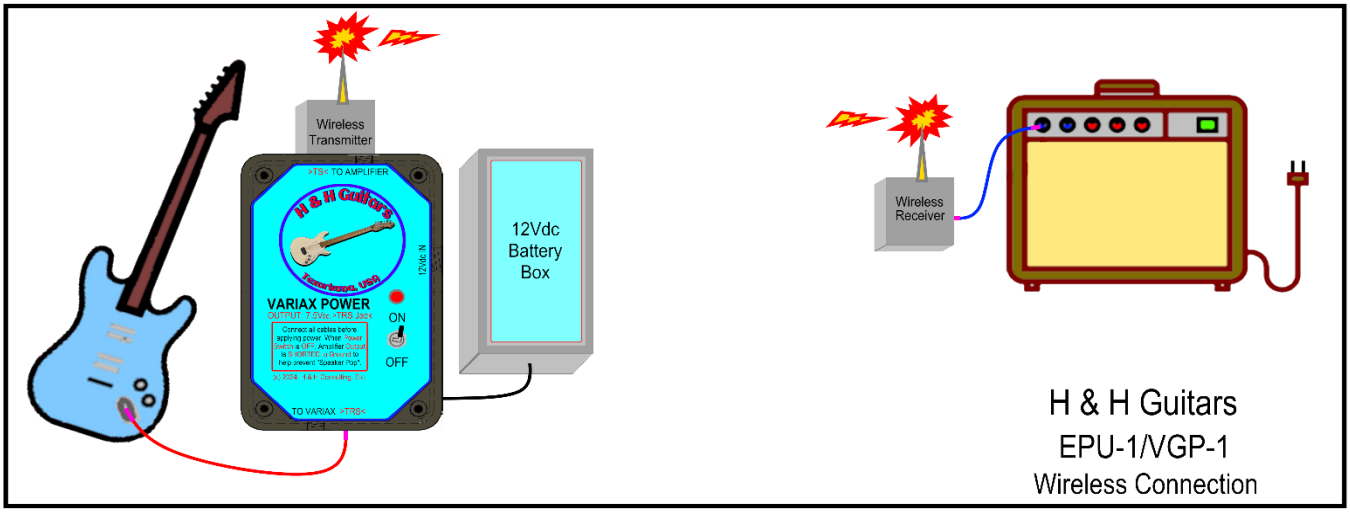
FPC-1 As many of our customers already have a wireless setup, along with a means to 'carry' the transmitter, we haven't concentrated on options for this part of a typical wireless setup. However, it is necessary to have some means of carrying the transmitter. This can be attached to the guitar (strap-pouch, etc.) or to the player (belt-pouch, 'fanny' pack, etc.). With the VGP/EPU setup, all three items must be carried.

To provide a possible solution, we offer the **FPC-1**, a carrier with integrated cable, to contain the **VGP-1**, the **EPU-1**, and the transmitter in one pouch. This is worn on the guitarist's waist by use of the strap provided, and, since the cable is integrated into the carrier, can be fully and securely zipped shut. When releasing the guitar, one cable is all that must be disconnected.

GWS-1 Some common wireless **Tx/Rx** systems that have been used successfully with the **VGP-1** are listed here. We optionally supply the Amazon Basics FW2 as part of our "Complete 'wireless' Setup." Note that any system that uses a standard (TS) input and will connect to your amp or sound system will possibly work, but **H & H Guitars** makes no statement of confidence except as to the following list:

- ✓ Line 6 (G10/30).
- ✓ Xvive (U2 Pro).
- ✓ Amazon Basics (FW2).
- ✓ Boss (WL-20/50).

Entries in the above list performed well for us in testing



TYPICAL CONNECTION

Frequently Asked Questions: VGP-1

What precautions should I take to maintain my VGP-1?

Your VGP-1 is robust and sturdy enough to be stored with your other gear without concern. Keep water away, and clean with a damp cloth only.

What precautions should I take while using my VGP-1?

You should never plug anything into the jacks except the cables that work with it, and certainly don't connect to a power source other than 12Vdc, center positive. Finally, never plug the TRS cord into any guitar other than a Line6 Variax that you personally know to be wired correctly.

What should I be aware of concerning cable connections while using my VGP-1?

First of all, your VGP-1 is specifically designed and intended to be used with Line6 Variax guitars only. While other brands and types of guitars with active electronics sometimes use a similar device, your VGP-1 can be damaged (or, can cause damage) if used with anything other than a Variax guitar. That being said, your VGP-1 will power any 'factory-wired' Variax, regardless of model and year of manufacture.

Second, inserting a normal guitar-cord jack (TS) into the TRS connector on your VGP-1 immediately 'shorts' the output voltage to ground. While this is not instantly damaging to the VGP-1, being maintained in a 'shorted' condition causes heat and can

cause eventual failure. Be sure that you're using the correct cable at all times, and if your Variax should fail to 'power up' when connected to your VGP-1, quickly check the cord type before verifying AC power, etc.

My VGP-1 doesn't seem to be working. What should I do?

From the perspective of the Variax guitar, there are two (2) separate circuits that are used (audio and power). We will briefly discuss how to 'troubleshoot' each one as it relates to your VGP-1, to identify any malfunctions.

NO AUDIO: *To 'troubleshoot' the audio circuit (sound out of the Variax), unplug the cable connected to your Variax Guitar (TRS connector). With the VGP-1 powered ON (and connected to a powered, turned-up amplifier), touching the tip of the TRS jack of this cable should produce humming/buzzing or other static types of noise through the amplifier. If so, your VGP-1 Audio circuit is working correctly. If not, go to the amplifier directly to see if the amplifier is reproducing sounds as it should. If so, your VGP-1 (or one of your cables) is not 'passing' the audio signal. Try substituting cables to narrow this down to the faulty item. Remember to use the correct cable type (TRS/TS) at all times. If the cables prove to pass the signal correctly, your VGP-1 is malfunctioning.*

NO POWER: *To 'troubleshoot' the power circuit (power to the Variax), unplug the cable connected to your Variax Guitar (TRS connector). With the VGP-1 powered ON, you should measure*

(with a multimeter) approximately 7.5 Vdc between the Ring (+) and Sleeve (-) of the TRS jack that plugs into your Variax. If so, your VGP-1 Power circuit is working correctly. If there is no voltage (or, if this reading is less than 7.2 Vdc), your VGP-1 (or your TRS cable) is not 'passing' power correctly. Try another TRS cable to narrow this down to the faulty item. If a 'known good' cable doesn't pass power correctly, your VGP-1 is not producing the proper power output. Next, check the AC source for 12 Vdc output with a multimeter (center positive). If this voltage is present at the output of the AC source, your VGP-1 is malfunctioning, and should be returned to H & H Guitars for repair.

Note: *The following steps are recommended only for users with technical experience.*

- *Broken wires or connections are the most common causes of failure. Remove the cover and visually inspect for loose or disconnected wiring.*
- *The Power switch can be another source of failure. Typically, if the switch fails, both functions (audio and power) are affected. In this case, the VGP-1 won't power the Variax AND also won't pass the audio signal. If both functions fail, the switch is the only component common to both circuits.*
- *If the external LED is lit (but there is no (or low) 7.5 Vdc power output), the AC source is producing an output. There is an LED on the circuit board inside the VGP-1 which is an indication of*

output from the power circuit. If this LED is lit, the probable cause of failure to power the Variax is a broken connection or TRS jack failure. Be sure to check the output level as a lower voltage will light the LEDs but may not power the Variax.

After 'Troubleshooting,' my VGP-1 (power or audio) isn't working. What should I do?

First of all, check your warranty information. Then, contact H & H Guitars via eMail for assistance. You should request a Return Authorization Code for warranty repair if applicable.

How do I obtain warranty or repair service?

Contact us via eMail or Postal Mail with details about operation or condition of your VGP-1. We will respond within 48 hours (weekends and holidays excepted) with a solution, a request for further information, or a Return Authorization Code. Depending on the circumstances, each situation may be treated differently.

How can I get replacement parts (cords, power supply, etc.) or another VGP-1 from H & H Guitars?

There is a price-list at the end of this User's Guide. Contact us via the Addresses on the back of the User's Guide.

We will normally respond within 48 hours (weekends and holidays excepted) with pertinent information and instructions. At the present time, we accept PayPal™, Venmo™ and CashApp™ payments for goods and services (parts and repairs).

VGP-1 Parts/Replacements Price Sheet (07/31/2024)

1) Power Unit (**VGP-1** *ONLY*)	$ 42.99
2) AC Adapter (ACA-1), 12Vdc@2 amps	$ 12.99
3) Battery Pack (**EPU-1**) w/batteries	$ 29.99
4) 15' TRS Cable (TRS15x)	$ 19.99

TRS15x cable is available in three (3) configurations:

a) Straight Male – Straight Male (TRS151)
b) Straight Male – 90 Degree Male (TRS152)
c) 90 Degree Male – 90 Degree Male (TRS153)

5) 15" TS Cable (TS15)	$ 14.99

TS15 cable is only available with Straight Plugs.

6) Carrier/Pouch (FPC-1), w/Integrated TRS12x Cable	$ 24.99
7) Generic Wireless System (GWS-1), Amazon Basics FW2	$ 59.99
8) 12" TRS Cable (TRS12x)	$ 12.99

TRS12x cable is available in three (3) configurations:

a) Straight Male – Straight Male (TRS151)
b) Straight Male – 90 Degree Male (TRS152)
c) 90 Degree Male – 90 Degree Male (TRS153)

Standard Bundles (Email for custom Bundles)

Basic "Wired" Setup (Items 1 and 2)	$ 54.99
Complete "Wired" Setup (Items 1, 2, 4 and 5)	$ 89.99
Basic "Wireless" Setup (Items 1, 3, and 6)	$ 97.99
Complete "Wireless" Setup (Items 1, 3, 6, and 7)	$154.99

Email us at sales@hhguitars.com for availability and pricing confirmation.

Prices good through 12/31/2024. Email for current pricing if expired.

Replacement Manuals are available.

Manuals are $1.50 each (including postage),
or may be downloaded in .pdf format at

hhguitars.com

For Warranty Service or Sales Information,

Contact H & H Guitars at the following addresses:

PHYSICAL (SHIPPING) ADDRESS:

H & H Consulting, Etc. (Dept. VGP-1)
333 Links DR APT 4501
Texarkana, AR 71854

eMAIL ADDRESSES:

For General Information: info@hhguitars.com
For Sales Information: sales@hhguitars.com
For Service Information: service@hhguitars.com
For Warranty Information: warranty@hhguitars.com

For all eMail inquiries, use VGP-1 in the subject line for the quickest response.

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