



VALVULATOR™ GP3

**VERY LOW POWER
VACUUM TUBE GUITAR AMPLIFIER**

PRELIMINARY OWNERS MANUAL

INTRODUCTION

Congratulations and thank you for choosing the VHT Valvulator™ GP3 Very Low Power Guitar Amplifier. As a player, I know you are constantly searching for new sounds and new ways to improve your existing sound. At VHT we understand the constantly evolving nature of artistic creativity and the search for the perfect sound to complement your ever-widening musical vision. Providing the tools to help you to create your own sonic signature is our primary mission.

The Valvulator™ GP3 is an advanced musical instrument amplifier, professional caliber recording tool, and universal rack system control center that will stimulate your creative juices, bring out subtleties in your playing technique that you never even knew existed and help you define your style with unprecedented simplicity. With the advent of the Valvulator™ GP3, the ability of a rack system to offer the player a wide palate of sounds with genuine amplifier feel and dynamics will now be fully realized.

Like the Valvulator™ GP3, this guide departs from conventional form and function because I believe it is the only way to adequately assist you in realizing the full potential of this unique piece of musical equipment. I sincerely apologize in advance for the depth of detail you are about to encounter. Having devoted countless hours, culminating in decades to the creation of the GP3, I would not wish to deprive you of the opportunity to fully comprehend its many capabilities. On the other hand, if I were you, I would probably be one of the first to roll this manual into a small tube and use it for a fly swatter, preferring instead to dive in uninitiated and try to intuitively work my way towards understanding the essence of the equipment being described here, most likely in the parking lot of a club, 30 minutes before show time.

For those of you who wish to forge ahead without the benefit of the following reams of verbiage, I applaud your decision. First hand experience and real world application will yield the ultimate satisfaction of finding your own path of comprehension and self-expression.

If you've got a gig in two hours, or like most of us, you just don't have the patience for all that mind numbing technical mumbo-jumbo; I invite you to proceed directly to the **Quick Start** section. Don't be terribly surprised when you find yourself up and running in no time. All of the ensuing gory details recorded herein will be waiting patiently whenever your curiosity gets the better of you.

Now it's time to plug in and ***Turn It On.***

Steven M Fryette
President

This manual is arranged into the following sections:

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- 2) **QUICK START – A GENERAL OVERVIEW**
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GETTING ACQUAINTED

The Valvulator™ GP3 is truly a leap forward in guitar amplifier technology. It breathes and dynamically responds to your playing technique exactly the way a great guitar amp should. Over twenty years of intense research, experimentation and design development have gone into every aspect of the creation of this unique sound-sculpting tool, from the stacked grained aluminum front panels with custom machined knobs to the proprietary output circuitry which precisely emulates the behavior of a cranked low power amplifier. The GP3 is incredibly easy to understand and operate. All of the essential controls, features and functions are conveniently and logically laid out on the front panel for easy access. No special adapters or accessories are required to get up and running. The best way to get acquainted with the GP3 is to think of it as a complete guitar amplifier and approach tone settings, gain settings and output volume the same way you would on a normal guitar amp. Once you've established your basic settings, you can then begin to explore the endless possibilities you create using the Dynamics Control, Global Tone Shaping, Graphic Equalizer, Valvulator Loop, Remote Switching, and extensive MIDI capabilities.

QUICK START - A GENERAL OVERVIEW

The Valvulator™ GP3 controls are logically arranged for quick access and intuitive operation. To get started, simply connect the supplied AC cable from the rear panel of your GP3 to any convenient wall outlet or power strip.

Connect one end of a shielded guitar cable to the AMP OUT jack on the rear panel of your GP3. Plug the other end of this cable to your power amp, effects processor, or switching system INPUT jack. **NOTE: If you are using the power section of an amplifier head or combo, connect this cable to the EFFECTS RETURN jack of the amplifier you are using to power your speakers (make sure the EFFECTS LOOP of this amplifier is TURNED ON if it is capable of being switched on and off, and that you have the LOOP LEVEL turned up if it has this feature).**

LEAVE YOUR POWER AMP ON STANDBY UNTIL YOU HAVE COMPLETED THE SET-UP PROCEDURE BELOW.

Connect a shielded guitar cable from your guitar to the front panel INPUT jack.

Set the CLEAN channel GAIN control to 10 o'clock, VOLUME to 2 o'clock, TREBLE to 2 o'clock, MIDDLE to 10 o'clock and BASS to 2 o'clock.

Set the RHYTHM channel GAIN control to 10 o'clock, BOOST GAIN to 2 o'clock, VOLUME to 10 o'clock, TREBLE to 2 o'clock, MIDDLE to 10 o'clock and BASS to 2 o'clock. The DEEP and HI GAIN toggle switches are discussed in detail later in this manual.

Set the LEAD channel GAIN control to 10 o'clock, BOOST GAIN to 2 o'clock, VOLUME to 10 o'clock, TREBLE to 2 o'clock, MIDDLE to 10 o'clock and BASS to 2 o'clock. The DEEP and HI GAIN toggle switches are discussed in detail later in this manual.

Set the GP3 MASTER VOLUME to 2 o'clock and the DYNAMICS to 8 o'clock.

Power up the GP3 by switching the POWER switch on the rear panel up (ON). At this time confirm that the GROUND switch is in the GROUNDED position.

Once the power is engaged, the three CHANNEL LED INDICATORS on the front panel will begin flashing. This indicates that the GP3s TUBE WARM-UP SEQUENCE has begun. After 15 seconds have elapsed, the tubes will have adequately warmed up, the microprocessor-controlled high voltage tube supply will automatically engage and the CLEAN Channel LED will light.

Having completed setting up the front panel controls, you are now ready to activate the STANDBY switch on your power amp and adjust the power amp VOLUME as desired.

IT'S SHOWTIME!

Select a channel using the global CHANNEL key on the far right. Pressing this key will allow you to step sequentially through the channels, CLEAN, RHYTHM and LEAD. The DEEP and HI GAIN toggle switches are discussed in detail later in this manual, however feel free to experiment with them at this time.

The GLOBAL functions are activated independently for each channel. These settings will be stored for each channel and will return to the last activated state when you recall the previously selected channel. These settings will remain in memory even when you power down and restart the GP3. Experiment with the BRITE, FAT, BOOST and EQ settings. F/X and REMOTE are discussed later in this manual.

Once you've become familiar with these basic operating procedures, you will have no difficulty comprehending the more detailed operating principals of the Valvulator GP3.

A WORD ABOUT CLASSIC AMPLIFIER SOUNDS

With the ever increasing proliferation of modeling hype and exaggerated claims about the role of the "Tone Stack" in creating an amplifier sound, it is difficult to avoid the temptation of including a setting chart here for the purpose of demonstrating how adept the GP3 would be at recreating classic amplifier sounds. We feel that this is an unproductive exercise, often based on sleight of hand and the power of suggestion.

It is our belief that each player experiences an amplifier differently depending on thousands of variables that simply cannot all be accounted for in one sitting or even one hundred. Think about it. Different model years and conditions of a given amplifier example can sound entirely differently from another. Different musical styles associated with a specific amplifier tonality, different guitars, guitar cables, microphones, recording studios, producers, engineers, line voltage, and oh yes, need it be pointed out, different players all serve to influence our take or memory of a given sonic signature. In that context the question must be raised, what is the quintessential Fender Bassman sound, the perfect AC30 rendition, the ultimate Marshall? And what about all of those unsung offerings that for whatever reasons have been overlooked by historians, yet may be the cornerstone of one of your all time favorite guitar passages?

Certainly there are elements of the GP3 that harken back to time honored amplifier design, and in this context, you most assuredly will find something familiar in its tonal recipe. But in reality, these are just stepping stones in a greater journey. We believe that the VHT player is attempting to develop something inside themselves, which is unique and seeks definition. Once you become intimately familiar with the capabilities of the GP3 you will of course eventually be able to call up a desired classic amplifier signature at will. We leave it to you then to decide whether to recreate the past or attempt to break down the musical boundaries that frame our collective and individual musical landscape.

WARM-UP SEQUENCE

As with all tube amplifiers, gradual warm-up greatly extends tube life and tone quality. There are two major wear factors which can noticeably impact the performance of preamp tubes. The first is **Filament Stress**. The second is called **Cathode Stripping**.

Filament Stress occurs when a cold tube is allowed to heat up too quickly. If this stress is allowed to occur too often, it is possible to destroy the filament, in which case the tube will cease to function. This is not a big problem in vintage amplifiers with AC powered heaters, which normally exhibit an inherently slow warm-up characteristic. However, AC filament generated hum can become intolerably loud in amplifiers with very high-gain capability. A regulated DC filament supply like that used in the GP3 totally eliminates the hum. As low maintenance is a top priority in the GP3, great care has been taken in the design of the filament supply in order to prevent Filament Stress. To insure low noise and long tube life, the **Regulated DC Filament Supply** in the GP3 has a “**Ramp**” feature, which upon power-up slowly raises the heater voltage up to the optimum voltage required by the tubes.

Cathode Stripping occurs when high voltage is supplied to the tube before the tube filament or heater is adequately warmed up and fully stabilized. Cathode Stripping eventually causes the tube to lose gain prematurely, resulting in dull tone and loss of sustain. To prevent Cathode Stripping, we’ve incorporated another exclusive feature into the GP3, the **High Voltage Auto-Standby Timer**.

During power-up, the channels automatically MUTE and the three channel LED indicators begin to flash, indicating that the warm-up sequence has begun. After 15 seconds, the time it takes for the tube filaments to reach operating temperature, a timer function in the GP3s microprocessor sends a “Turn On” command to the high voltage supply and the Clean channel LED turns on. **Note: If you have previously powered down your GP3 in a different channel, that channel and its global settings will activate after the warm-up sequence is complete.** Once the high voltage supply has been activated and stabilized, the output mute relay deactivates and the GP3 is ready to play. The entire **Warm-Up Sequence** takes 18 seconds to complete.

Of course, there may be times when it is not convenient to wait 18 seconds for the GP3 to begin operating. If you are mid-solo at a gig or recording session for example and there is a momentary interruption in AC power, the GP3 may still be warm enough to begin operating immediately. In this case, simply press the global CHANNEL key right after power has been restored to the GP3. This will initiate a modified 3-second turn-on sequence, which will then automatically return you to your previous settings.

THE BIG PICTURE

The Valvulator™ GP3 is a complete, self-contained **Very Low Power** amplifier. Utilizing its groundbreaking **Dynamic Sensing Technology™** incorporating a unique output power circuit; the GP3 reacts to playing dynamics the same way a conventional guitar amplifier does. With user control over this dynamic “expression”, you can dial in the ideal dynamic response of the GP3 to suit your style.

A typical tube guitar amplifier is made up of a preamp stage, which consists of preamp tubes, gain stages and a tone control system, and a power amp stage, which consists of power tubes and an output transformer. A great guitar amplifier is born when the preamp and power amp complement and interact with each other such that the whole becomes greater than the sum of its

parts. The result is an amplifier that lends itself to inspired musical expression and becomes just as much a part of the playing experience as the instrument plugged into it.

A conventional rack mount tube preamplifier consists of only the preamp and tone control stages of a guitar amplifier in a separate chassis, isolated from the power amp stage. The separate operation of the preamp from the power amp is what makes even the most expensive preamplifiers sound dry, brittle and lifeless.

To reproduce the behavior of a real guitar power amplifier requires real power amplifier components. All attempts to “model” this behavior have proven largely inadequate due partly to the limited capacity of the microprocessor, which puts a ceiling on the depth and complexity of the model, limited amplifier output power dynamics of currently available modeling products, and partly to the extremely complex and unpredictable nature of amplifier distortion.

Fortunately, it is not necessary to produce a lot of output power in order to produce power amp distortion and harmonic interaction. To minimize weight, heat dissipation, and maintenance cost, the GP3 utilizes a 12AX7 preamp tube in a unique configuration that uses very little power and produces pleasing power amplifier distortion and harmonic components. Thus the Valvulator GP3 leads the way toward a new class of amplification, the Very Low Power Amplifier.

INPUT STAGE

Because nothing about the GP3 is ordinary, the first place to start looking for innovation is the input stage. Today’s rack systems combine preamps, heads, power amps, processors, and pedals in a myriad of combinations and configurations. To deal with all of the problems associated with this intermixing of gadgets, a buffer or line driver is often inserted between the guitar and the various amp and effect inputs to condition and protect the guitar signal from noise and tonal degradation. These buffers are often makeshift items and are almost always detrimental to the original guitar signal, which they are intended to protect. The Valvulator input stage features a specially designed super low noise vacuum tube buffer/line driver circuit that preserves the tonal balance of the original guitar signal and eliminates the need for (and cost of) accessory buffers. Thus the guitar signal can be routed through the GP3 directly to pedals, heads, other preamps or direct to the recording console with no detrimental effect on the guitar signal or the operation of the GP3!

Most players are aware of the noticeable and often aggravating loss of signal level, change of tone and/or loss of high frequency response when an effects device is inserted between the guitar and amplifier. These losses can diminish the sound quality, character, and sustain of your guitar. This also causes premature signal decay, making feedback notes difficult to obtain and control. Typical fixes for these devices usually involve modifying the pedal, such as installing “true bypass” switches, solid state “op amp” buffers, or utilizing “hard wire” loop switchers in the effects chain. These modifications are usually only marginally effective and often create as many problems as they solve, especially with vintage pedals. Often the problem of diminished or altered guitar tone remains, since the guitar signal is not always entirely isolated from the effect input circuitry.

Most modern guitar amplifiers provide an effects loop to eliminate these problems. This type of loop usually inserts the effect between the preamp and power amp stages in the amplifier. This is great for high level Delays, Reverbs, and Multi-effects Processors that operate well with the high signal level present in this part of the amplifier circuit. Conversely it is the worst place to insert a

pedal due to the low signal level capacity (headroom) and often, high impedance input of most pedals, which are designed to be inserted between the guitar and amp.

In a GP3 rack system, high-level devices will be inserted between the GP3 and your power amplifier or rack mixer. Pedals will be inserted in the low level Effects Loop, providing a sonically transparent input stage that isolates the high impedance guitar pickup signal from the stomp box's input circuitry. To accomplish this the cable from the guitar is plugged directly into the GP3 input jack. The Valvulator signal comes out on the GP3 front panel via the AUX SEND jack, or at the rear panel via the AUX SEND and F/X LOOP SEND jacks. This clean, dynamic signal is now a low impedance signal source, which is impervious to the loading effect of multiple stomp boxes, multiple amplifiers, or poorly designed "buffer mods" on pedals. The resulting improved signal quality gives wah pedals more wah range, over-drive pedals more sensitivity and punch, and phasers more intensity. This feature is ideal for configuring a "pedal drawer" in your rack for remote operation of stomp boxes.

Now, imagine you are in a recording session and you decide you need an acoustic track to fatten up your mix. How would you like to run through a professional quality tube direct box without a lot of studio down time? Simply plug your acoustic pick-up output into the front input of the GP3, then run the front panel AUX SEND direct to the console. Enter the MUTE MODE on the GP3 to kill the signal to the rest of your system and you're ready to fly. It's that easy.

CHANNELS

The 3-channel configuration of the GP3 is based on the VHT Pittbull™ Ultra-Lead and Pittbull™ Hundred/CLX 3-channel preamp designs. Each of the 3 channels, CLEAN, RHYTHM, and LEAD, feature Gain, Treble, Middle, Bass, and Volume controls. The LEAD and RHYTHM channels also feature a variable BOOST control to adjust the amount of gain boost available. A fixed amount of boost is provided for the CLEAN channel to kick in a bit of crunch for a "dirty/clean" rhythm or solo style. Gain Stacking™ and DEEP switches are provided for the RHYTHM and LEAD channels. Gain Stacking™ is a unique feature that allows you to pre-determine the number of actual tube gain stages used in the selected channel. Most high-gain tube preamp designs can produce lots of overdrive, but sound noisy, thin and brittle at medium or low gain settings. This is because there are too many tube gain stages "in circuit" at all times. Gain Stacking™ solves this problem by letting the user decide how many stages of gain are needed to produce the desired result. Medium-clean to crunch and classic solo gain levels only require 3 stages of tube gain. Hot solos, heavy crunch and full shred sounds require 4 stages. With Gain Stacking™, the user selects the "Normal" setting for 3 stages of gain, or "Hi Gain" setting for 4 stages of gain. Exactly what you need when you need it.

The DEEP switches on the RHYTHM and LEAD channels provide a user selected balance of low mids and highs for a fuller fatter tone especially at low gain settings. Great for medium crunch rhythm tracks and low gain solo parts where you require a more pronounced power amplifier distortion sound with less front-end gain.

TONE CONTROLS

VHT amplifiers are well known for their "tone controls that really work" and this legacy is carried on here. The passive tone control circuitry in the GP3 is interactive in nature and separate tone circuits and controls are provided for each channel. This is important to note as many "multi-channel" tube amp designs often share tone controls. Even some that appear to have separate tone controls in reality have only one tone circuit that switches between 2 or 3 sets of tone knobs. Our

truly independent circuitry provides much more tonal range and flexibility as well as cleaner signal paths, no signal bleed between channels and lower noise.

GRAPHIC EQUALIZER

This is probably one of the most unusual GRAPHIC EQ designs ever created. Not just some randomly selected frequency bands; the frequency, resonance and slope of each band have been carefully chosen and tuned to enhance specific properties of guitar body, neck and hardware resonance points and harmonics. The frequency selections of 100Hz, 250Hz, 630Hz, 1.2 KHz, 2.3 KHz and 5KHz are designed to zero in on your guitars personality and bring out, or suppress the specific overtones you are trying to manipulate while maintaining a transparent and natural tonal character. Each band is capable of 12dB cut and boost, much more than conventional designs. Therefore, to prevent overload and excessive noise, it is important to USE SPARINGLY. You will observe dramatic changes in sound settings by moving each band only one or two demarcation points above or below the centerline. Because of the careful design and implementation of this feature, it is recommended that you avoid the impulse to use a full “V” graphic control pattern. With a little experimentation you will become very adept at using the GRAPHIC EQUALIZER to maximum effect with very conservative movement of the slide controls.

DYNAMICS CONTROL

Ever wonder why a rack system never sounds like a real guitar amplifier? Most likely this is the very first thing you discovered and, in many cases, this may have been the reason you scrapped the whole rack idea altogether. A guitar amplifier responds to your playing style in varying degrees depending on your guitar, pick-ups, playing style, pick attack, volume, amount of gain or overdrive used, audience size, relationship with the bartender and a host of other variables. In the process the amplifier produces varying degrees of distortion, harmonics, overload, and power amp compression, which enhances or complicates your playing experience. As has been repeatedly demonstrated, none of these amplifier/player-feedback relationships are obtainable, let alone controllable from a conventional preamp. Even the most sophisticated modeling products cannot reproduce these analog specific tonal artifacts. With the Valvulator™ GP3, not only can you duplicate this behavior, you can control it in real time!

The DYNAMICS control allows you to adjust the amount of output dynamics and output overload behavior FOR ANY VOLUME LEVEL OR AMOUNT OF GAIN! An LED indicator tracks this dynamic behavior and intensity, letting you know how quickly or slowly the GP3 is responding to your playing attack. To set the optimum Dynamics level for your style, start with this control set fully counterclockwise. Set each channels gain, tone, volume and boost level to your desired settings. Then adjust the Dynamics control SLOWLY clockwise until you reach your desired level of amplifier response.

Keep in mind that the amount of DYNAMIC response you set will depend entirely on your playing environment. Playing at home with a low volume setting is a much different playing environment than a live performance situation where much greater volumes and emotional levels become significant to your playing style and attack. Remember, the harder you play, the more the GP3 will respond, and like any true blue tube guitar amplifier, the GP3 will get sweeter and fatter as it gets warmed up. All of these factors will affect your DYNAMIC setting. After a while you may find yourself forgetting all about the tone and gain controls as you become tuned in to the emotional depth of your playing and your ability to “dial in” the amount of feel you will get back from your GP3.

OUTPUT STAGE/MASTER VOLUME

This is the overall output stage and volume control section for all channels. It can be used simply for system output level control or to set the amount of desired “power amp” distortion behavior. Separate preamp and power amp systems are potentially powerful and flexible tools, but until now, something has always been missing. To make a rack system breathe and respond like a guitar amplifier, it has to behave like a guitar amplifier.

The output stage is the “icing on the cake” so to speak and as you become more familiar with the operation of the GP3, you will undoubtedly, as we have, spend progressively more time tweaking this feature to suit your sonic objectives.

Think of this as the heart of the GP3, responding to the signal received from the individual channels, and infusing that signal with a living breathing essence, the intensity of which you will control. Start with the RHYTHM CHANNEL VOLUME set at about 10 o'clock and the MASTER VOLUME set at about 2 o'clock. Set the tone controls and gain to taste. Set the DYNAMICS control to about 8 o'clock. Now just play awhile and get used to the sound and feel. Then set the RHYTHM CHANNEL VOLUME to 2 o'clock and the MASTER VOLUME to 11 o'clock or as close to your previous playing volume as possible. You may notice not so much of a tonal difference, however you will instantly become aware of the effect that the output stage and dynamic response is having on your playing technique. This is the essence of the player/amplifier feedback experience. Also note that you have not yet even begun to explore the range of effect produced by the DYNAMICS CONTROL. As you experiment with various ratios of CHANNEL VOLUME, MASTER VOLUME and DYNAMICS, you will become very proficient at fine-tuning the output stage to emulate the output behavior of say, a 100 watt amp versus a 15 watt amp.

GLOBAL FUNCTIONS

On the far right of the front panel are seven manual and MIDI controllable global function keys. These can be operated in real time on the front panel and are then stored in the GP3 memory until you change the settings. They can also be activated by a remote switching system using the individual rear panel jacks provided, or from an optional MIDI footswitch controller. In addition, each of these keys has a secondary function which you will use to program MIDI, clear user memory contents, temporarily disable the output signal (MUTE) and select MIDI controller number maps. These secondary functions are indicated in **(bold text parentheses)**.

BRITE (Factory Preset Bank) – Adds a crisp top end voicing to the Clean channel. In Rhythm or Lead channel mode this key controls the Edge function, an exclusive VHT feature, which enhances upper harmonic sustain and saturation. **(Selects the factory MIDI preset bank)**.

The Edge function on the RHYTHM and LEAD channels is another VHT innovation that has been a valuable feature on all of our amp designs since our first guitar amp was built in 1988. Edge is a type of tailored gain boost that only acts on the upper registers and harmonics of the guitar signal. With the global BRITE function key engaged on the RHYTHM or LEAD channels, the guitar becomes more touch-sensitive and notes sustain longer while at the same time the lower strings remain tight and well defined. This means the player can get more sparkle and zing out the guitar strings without making the bass notes sound muddy. Like all VHT tone shaping functions this is a subtle and effective feature to help you fine-tune your sound.

FAT (User Bank 1) – A midrange shift that gives the engaged channel more punch or bark

depending on the gain setting and assigns operation of this mode to any selected channel. (**Selects user defined MIDI preset Bank 1**).

BOOST (User Bank 2) – Fixed gain boost on the CLEAN channel, variable gain boost on the RHYTHM and LEAD channels. Assigns operation of this mode to selected channel. (**Selects user defined MIDI preset Bank 2**).

F/X (User Bank 3) – Activates the low level input stage effects loop and assigns operation of the loop to any selected channel. (**Selects user defined MIDI preset Bank 3**).

EQ (Controller Number Map Select) – Activates the 6-band graphic EQ and assigns operation of the EQ to any selected channel. (**Selects between 2 factory defined banks of controller numbers, LED OFF = Controller numbers 20 thru 30, LED ON = Controller numbers 102 thru 112**).

REMOTE (MIDI LEARN) – Activates either of 2 rear panel isolated switching jacks for remote switching of amps, preamps or accessories and assigns operation of the switch function to any selected channel. The REMOTE jacks on the rear panel are labeled REMOTE 1, which is only activated when the CLEAN channel is engaged, and REMOTE 2, which is activated whenever the RHYTHM, or LEAD channel is engaged. When REMOTE 1 is activated, the CLEAN channel LED will flash. When REMOTE 2 is activated, the RHYTHM or LEAD channel LED or both will flash depending on which of these channels' REMOTE function has been selected. (**Activates MIDI LEARN function**).

CHANNEL (MUTE) – Selects CLEAN, RHYTHM or LEAD channel. (**Simultaneously mutes all three channels when held down for 2 seconds**).

(WARM-UP SEQUENCE OVERRIDE) – This function is accessed right after power up. In the event that the GP3 has already been operating and power is temporarily interrupted, it is not necessary to wait for the complete warm-up sequence to resume operation. You can manually override the WARM-UP SEQUENCE by tapping the CHANNEL button once during warm-up. This will reduce the WARM-UP SEQUENCE interval from 15 seconds to 3 seconds.

(MEMORY CLEAR) – This function is accessed on power up. To clear ALL memory contents, hold down BRITE and REMOTE functions and engage the power switch.

MIDI/MIDI LEARN

Setting up MIDI patches is a snap with the GP3. There are 4 banks of MIDI presets available, FACTORY, USER 1, USER 2 AND USER 3, (refer to the GLOBAL FUNCTIONS section above) which are selected as follows: Press the REMOTE key for 2 seconds. The CHANNEL LEDs will turn off and one of the 4 MIDI Preset Bank LED indicators will flash. Your GP3 comes from the factory preset to the Factory ROM bank. There are 127 combinations of channels and global functions recorded here, configured as Programs 0-126. See MIDI PROGRAM CHART in Appendix I for details. To access the Factory Program Bank, first confirm that the rear panel SELECT/OMNI switch is set to OMNI. Connect the MIDI OUT from your MIDI controller to the MIDI IN on the back of the GP3. Next, power up the GP3 and your controller, then select a MIDI program number on your MIDI Controller.

NOTE: All four PROGRAM BANKS include a factory MUTE setting on MIDI program 0. Program 0 is NOT a user programmable/erasable location.

To write a patch to one of the USER PROGRAM BANKS, first confirm that the rear panel SELECT/OMNI switch is set to OMNI Connect the MIDI OUT from your MIDI controller to the MIDI IN on the back of the GP3. Next, power up the GP3 and the controller.

Now you are ready to write a patch.

1. Select a program bank/preset (1-127) on your MIDI controller, which you will use to recall your new patch setting.
2. On the GP3, select the desired channel, and any of the 6 global functions, BRITE, FAT, BOOST, F/X, EQ, REMOTE, that you want activated on this channel.
3. Access the MIDI LEARN feature by holding down the REMOTE button for 2 seconds. The channel and global function LEDs will go out and then one of the following will flash on and off: BRITE (Factory Preset Bank), FAT (User Preset Bank 1), BOOST (User Preset Bank 2), or F/X (User Preset Bank 3).
4. Select User Bank 1, 2 or 3 in which to store your patch. **The Factory Preset Bank will not store user patch information.**
5. Send the program number from the MIDI controller to the GP3 by pressing the previously selected preset on your MIDI controller. The patch is now stored and the GP3 has automatically exited LEARN MODE.
6. Repeat this procedure for each patch you want to create.

NOTE: Your existing program parameters remain unaffected until you change them, even if you enter MIDI LEARN mode live “on the fly”. This means that if you are playing a live performance and you decide to add BOOST to your existing MIDI program setting, you can during a performance, simply press the BOOST key, enter MIDI LEARN and hit your existing MIDI program footswitch button to add that parameter to your existing MIDI patch with NO INTERRUPTION IN THE SOUND. Conversely, you can add any parameter “on the fly” for that specific performance without saving it, and your normal setting will come up next time you select that patch.

MIDI CONTROLLER NUMBERS

Each of the GLOBAL functions, as well as the MUTE function, are assigned a MIDI CONTROLLER NUMBER. There are eleven CONTROLLER NUMBER functions. The controller numbers are stored in the GP3 memory in 2 banks. CONTROLLER BANK 1 is numbered 20-30. CONTROLLER BANK 2 is numbered 101-112. See Appendix II for Controller number assignment information. The GP3 is shipped from the factory preset to CONTROLLER BANK 1. To change the setting to CONTROLLER BANK 2, press and hold the REMOTE key for 2 seconds. All of the front panel LED indicators will go out except for the MIDI PROGRAM BANK number indicator. Press the EQ key once. The EQ LED indicator will flash on and off, indicating that you have entered CONTROLLER BANK 2. Press the REMOTE key to exit.

APPENDIX I

MIDI FACTORY PROGRAM MAP							
PROGRAM	FUNCTION/COMBINATION						
0	MUTE						
1	CLEAN						
2	CLEAN	BRITE					
3	CLEAN	FAT					
4	CLEAN	BOOST					
5	CLEAN	LOOP					
6	CLEAN	EQ					
7	CLEAN	REMOTE					
8	CLEAN	BRITE	FAT				
9	CLEAN	BRITE	BOOST				
10	CLEAN	BRITE	LOOP				
11	CLEAN	BRITE	EQ				
12	CLEAN	FAT	BOOST				
13	CLEAN	FAT	LOOP				
14	CLEAN	FAT	EQ				
15	CLEAN	BOOST	LOOP				
16	CLEAN	BOOST	EQ				
17	CLEAN	BOOST	REMOTE				
18	CLEAN	LOOP	EQ				
19	CLEAN	LOOP	REMOTE				
20	CLEAN	BRITE	FAT	BOOST			
21	CLEAN	BRITE	FAT	LOOP			
22	CLEAN	BRITE	FAT	EQ			
23	CLEAN	BRITE	BOOST	LOOP			
24	CLEAN	BRITE	BOOST	EQ			
25	CLEAN	BRITE	LOOP	EQ			
26	CLEAN	FAT	BOOST	LOOP			
27	CLEAN	FAT	BOOST	EQ			
28	CLEAN	FAT	LOOP	EQ			
29	CLEAN	BOOST	LOOP	EQ			
30	CLEAN	BOOST	LOOP	REMOTE			
31	CLEAN	BOOST	EQ	REMOTE			
32	CLEAN	BRITE	FAT	BOOST	LOOP		
33	CLEAN	BRITE	FAT	BOOST	EQ		
34	CLEAN	BRITE	FAT	LOOP	EQ		
35	CLEAN	BRITE	BOOST	LOOP	EQ		
36	CLEAN	FAT	BOOST	LOOP	EQ		
37	CLEAN	FAT	BOOST	LOOP	REMOTE		
38	CLEAN	FAT	BOOST	EQ	REMOTE		
39	CLEAN	BRITE	FAT	BOOST	LOOP	EQ	
40	CLEAN	BRITE	FAT	BOOST	LOOP	REMOTE	
41	CLEAN	BRITE	FAT	BOOST	EQ	REMOTE	
42	CLEAN	BRITE	FAT	BOOST	LOOP	EQ	REMOTE

43	RHYTHM						
44	RHYTHM	BRITE					
45	RHYTHM	FAT					
46	RHYTHM	BOOST					
47	RHYTHM	LOOP					
48	RHYTHM	EQ					
49	RHYTHM	REMOTE					
50	RHYTHM	BRITE	FAT				
51	RHYTHM	BRITE	BOOST				
52	RHYTHM	BRITE	LOOP				
53	RHYTHM	BRITE	EQ				
54	RHYTHM	FAT	BOOST				
55	RHYTHM	FAT	LOOP				
56	RHYTHM	FAT	EQ				
57	RHYTHM	BOOST	LOOP				
58	RHYTHM	BOOST	EQ				
59	RHYTHM	BOOST	REMOTE				
60	RHYTHM	LOOP	EQ				
61	RHYTHM	LOOP	REMOTE				
62	RHYTHM	BRITE	FAT	BOOST			
63	RHYTHM	BRITE	FAT	LOOP			
64	RHYTHM	BRITE	FAT	EQ			
65	RHYTHM	BRITE	BOOST	LOOP			
66	RHYTHM	BRITE	BOOST	EQ			
67	RHYTHM	BRITE	LOOP	EQ			
68	RHYTHM	FAT	BOOST	LOOP			
69	RHYTHM	FAT	BOOST	EQ			
70	RHYTHM	FAT	LOOP	EQ			
71	RHYTHM	BOOST	LOOP	EQ			
72	RHYTHM	BOOST	LOOP	REMOTE			
73	RHYTHM	BOOST	EQ	REMOTE			
74	RHYTHM	BRITE	FAT	BOOST	LOOP		
75	RHYTHM	BRITE	FAT	BOOST	EQ		
76	RHYTHM	BRITE	FAT	LOOP	EQ		
77	RHYTHM	BRITE	BOOST	LOOP	EQ		
78	RHYTHM	FAT	BOOST	LOOP	EQ		
79	RHYTHM	FAT	BOOST	LOOP	REMOTE		
80	RHYTHM	FAT	BOOST	EQ	REMOTE		
82	RHYTHM	BRITE	FAT	BOOST	LOOP	REMOTE	
83	RHYTHM	BRITE	FAT	BOOST	EQ	REMOTE	
84	RHYTHM	BRITE	FAT	BOOST	LOOP	EQ	REMOTE
85	LEAD						
86	LEAD	BRITE					
87	LEAD	FAT					
88	LEAD	BOOST					
89	LEAD	LOOP					
90	LEAD	EQ					

91	LEAD	REMOTE					
92	LEAD	BRITE	FAT				
93	LEAD	BRITE	BOOST				
94	LEAD	BRITE	LOOP				
95	LEAD	BRITE	EQ				
96	LEAD	FAT	BOOST				
97	LEAD	FAT	LOOP				
98	LEAD	FAT	EQ				
99	LEAD	BOOST	LOOP				
100	LEAD	BOOST	EQ				
101	LEAD	BOOST	REMOTE				
102	LEAD	LOOP	EQ				
103	LEAD	LOOP	EMOTE				
104	LEAD	BRITE	FAT	BOOST			
105	LEAD	BRITE	FAT	LOOP			
106	LEAD	BRITE	FAT	EQ			
107	LEAD	BRITE	BOOST	LOOP			
108	LEAD	BRITE	BOOST	EQ			
109	LEAD	BRITE	LOOP	EQ			
110	LEAD	FAT	BOOST	LOOP			
111	LEAD	FAT	BOOST	EQ			
112	LEAD	FAT	LOOP	EQ			
113	LEAD	BOOST	LOOP	EQ			
114	LEAD	BOOST	LOOP	REMOTE			
115	LEAD	BOOST	EQ	REMOTE			
116	LEAD	BRITE	FAT	BOOST	LOOP		
117	LEAD	BRITE	FAT	BOOST	EQ		
118	LEAD	BRITE	FAT	LOOP	EQ		
119	LEAD	BRITE	BOOST	LOOP	EQ		
120	LEAD	FAT	BOOST	LOOP	EQ		
121	LEAD	FAT	BOOST	LOOP	REMOTE		
122	LEAD	FAT	BOOST	EQ	REMOTE		
123	LEAD	BRITE	FAT	BOOST	LOOP	EQ	
124	LEAD	BRITE	FAT	BOOST	LOOP	REMOTE	
125	LEAD	BRITE	FAT	BOOST	EQ	REMOTE	
126	LEAD	BRITE	FAT	BOOST	LOOP	EQ	REMOTE

APPENDIX II

MIDI CONTROLLER NUMBER MAP				
BANK 1	BANK 2	FUNCTION	VALUE	
20	102	0	Clean	< 63 = OFF, > 64 = ON
21	103	1	Rhythm	< 63 = OFF, > 64 = ON
22	104	2	Lead	< 63 = OFF, > 64 = ON
23	105	3	Remote	< 63 = OFF, > 64 = ON
24	106	4	EQ	< 63 = OFF, > 64 = ON
25	107	5	Br/Edge	< 63 = OFF, > 64 = ON
26	108	6	Fat/Shift	< 63 = OFF, > 64 = ON
27	109	7	Boost	< 63 = OFF, > 64 = ON
28	110	8	FX	< 63 = OFF, > 64 = ON
29	111	9	Mute	< 63 = OFF, > 64 = ON
30	112	10	Dynamics	0-127

TUBE FUNCTION AND LOCATION CHART

Each 12AX7 has two sections/functions. Section A (Plate Pin 1) is shown first, Section B (Plate Pin 6) is second. Factory recommended tubes are listed under each location. Numbering sequence is LEFT to RIGHT looking at the FRONT of the unit.

V1 12AX7WB Sovtek	Valvulator unity gain buffer stage (effects loop driver).
V2 12AX7WB Sovtek	Input Gain Stage 1 and signal splitter/driver for all 3 channels. Both triodes operating in parallel.
V3 12AX7 China	Gain Stage 2 for Rhythm channel. Gain Stage 2 for Lead channel.
V4 12AX7 China	Gain Stage 3 for Lead and Rhythm channels. Tone Control Driver for Lead and Rhythm channels.
V5 12AX7 China	Gain Stage 2 for Clean Channel Gain Stacking Stage (Stage 4) for Lead and Rhythm Channels Gain Stacking Stage active when Gain Toggle is set to Hi Gain.
V6 12AX7 China	Low output dual single-ended power amplifier stage. Both triodes operating in parallel.

REAR PANEL FEATURES

AUX OUT - Low impedance unity-gain guitar level output. Use for tuners, amplifiers or additional preamps. -20dB (standard ¼" phone jack).

AUX INPUT - Rear panel guitar input. Front panel Input defeats this jack. Use for connecting wireless or patch panel guitar signal in a rack system (standard ¼" phone jack).

F/X SEND - Low level pre-gain, pre-EQ output for pedals and routing to other amplifiers, preamps, switchers and accessories. -20dB (standard ¼" phone jack).

F/X RETURN - Low level input for effects return, input from guitar, patch panel or from wireless receiver output if pedal loop is not required. -20dB (standard ¼" phone jack). Use the global F/X key on the front panel, MIDI or rear panel F/X switching jack to activate this function.

RECORDING OUT - Unbalanced, low impedance, frequency compensated cabinet simulator output for recording direct to console or to send cabinet simulator signal to "front of house".

AMP OUT - Unbalanced, full range low impedance output for use in live performance or recording through a power amp and speakers.

BALANCED OUT SELECT - Patch AMP OUT or REC OUT signal to the XLR output.

BALANCED OUTPUT - Balanced, low impedance output for recording direct to console or live performance direct to front of house, monitor mix or in-ear monitor.

REMOTE 1 - Relay controlled switching jack for remote control of external amps, preamps and effects. Assignable to CLEAN channel function and can be configured for "normally open" or "normally closed" operation (stereo ¼" phone jack, ring, tip, sleeve). This jack is independently isolated from system ground.

REMOTE 2 - Relay controlled switching jack for remote control of external amps, preamps and effects. Assignable to RHYTHM or LEAD channel function and can be configured for "normally open" or "normally closed" operation (stereo ¼" phone jack, ring, tip, sleeve). This jack is independently isolated from system ground.

BRITE/EDGE - Remote switching jack for activation of BRITE on CLEAN channel, EDGE on RHYTHM or LEAD channel (standard ¼" phone jack).

BOOST - Remote switching jack for activation of BOOST mode (standard ¼" phone jack).

SHIFT - Remote switching jack for activation of FAT mode (standard ¼" phone jack).

LOOP - Remote switching jack for activation of F/X LOOP (standard ¼" phone jack).

EQUALIZER - Remote switching jack for activation of Graphic EQ (standard ¼" phone jack).

RHYTHM/LEAD - Remote switching jack for activation of Lead and Rhythm channel (standard ¼" stereo phone jack). RHYTHM = Ring to ground, LEAD = Tip to ground.

OMNI/SELECT - Set to receive MIDI information on all MIDI channels, or selected channel.

MIDI CHANNEL SELECT - In **SELECT** mode above, select desired MIDI channel.

MIDI THRU - Standard MIDI controller thru.

MIDI OUT - Standard MIDI controller output.

MIDI IN/FOOTSWITCH - Standard MIDI controller input. Optional footswitch control of all MIDI functions.

PHANTOM POWER IN - In a rack system you will connect your MIDI controllers AC adapter here to send power to the controller via the MIDI cable. Check your MIDI controllers instruction manual to confirm that this feature is available on your unit.

POWER - On/Off switch. Rear panel mounted for low noise operation.

MAINS - 117VAC, 50-60Hz, 38Watts.

GENERAL SPECIFICATIONS

TUBE COMPLEMENT: 3-12AX7WB (V1, V2, V5), 3 12AX7AC (V3, V4, V6).

SIZE: 19"W X 3-1/2" H X 9" D.

WEIGHT: 15 pounds.

VHT AMPLIFICATION VALVULATOR™ GP3

LIMITED WARRANTY

Subject to the obligations and exclusions found below, this VHT Amplification product is warranted against manufacturing defects in materials and workmanship for the period of one (1) year from the date of purchase, with the exception of the tubes and fuses, which carry a 90-day warranty.

The warranty period commences on the date of purchase by the original user. Performance under this warranty must be obtained at one of the following: a VHT Authorized Service Station, by returning the unit to the VHT factory with prior authorization, or (in countries outside of the United States) by a representative VHT distributor.

A list of VHT Authorized Service Stations can be obtained from: VHT Amplification, 1201 South Flower Street., Burbank, CA 91502 USA, Attn: Warranty Service. Telephone (818) 846-4000, Fax (818) 846-4040.

Obligations

1. This warranty will be honored only on the presentation of the original proof of purchase.
2. Transportation of the product to and from an authorized VHT service outlet is the responsibility of the user. Units sent directly to the VHT factory for warranty repairs must be authorized by VHT and shipped prepaid.

Exclusions

1. This warranty shall not cover adjustment of customer-operated controls as explained in the appropriate model's instruction manual, or products that have been altered or have missing or defaced serial numbers.
2. This warranty shall not apply to the appearance of accessory items including, but not limited to, cabinets, cabinet parts, or knobs.
3. This warranty does not apply to uncrating, setup, installation, or the removal and reinstallation of products for repair.
4. This warranty shall not apply to repairs or replacements necessitated by any cause beyond the control of VHT including, but not limited to, any malfunction, defects, or failure caused by or resulting from unauthorized service or parts, damaged or broken tubes, incorrect line voltage, improper maintenance, modification or repair by the user, abuse, misuse, neglect, accident, fire, flood, or other Acts of God.
5. Responsibility for the repair of any VHT product sold outside of U.S. boundaries is borne by the VHT representative in that particular country or territory. Also, the warranty term and conditions may be different from those stated above. Please contact the VHT distributor or dealer in your country for more information.

The foregoing is in lieu of all other expressed warranties, and VHT does not authorize any party to assume for it any other obligation or liability. In no event shall VHT be liable for special or consequential damages arising from the use of this product, or for any delay in the performance of this warranty due to causes beyond our control. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of consequential damages, so the above limitations on implied warranty and consequential damages may not apply to you. This warranty gives you specific legal rights. You may have other rights that vary from state to state.