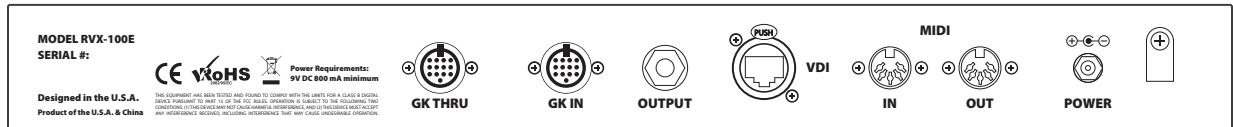
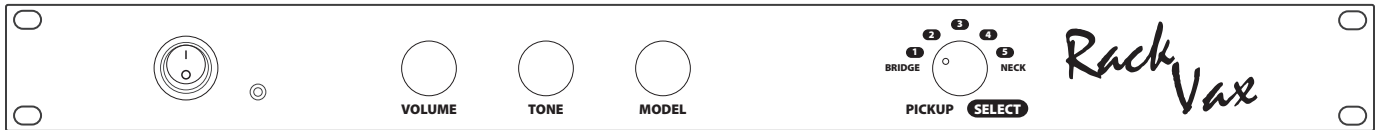


RackVax

Electric

RVX-100E



Product Manual

(Version 1.01)

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Introduction

Congratulations and thank you for your purchase of a RackVax Electric RVX-100E guitar modeling processor. You are on your way to discovering a wide range of amazing sounds from some of the most famous and revered guitars in the history of the instrument, as well as some fine selections drawn from instruments such as the banjo and sitar. With the help of this manual, you will soon be hearing these tones emanate from the guitar of your choice. Get ready to rack-and-roll!

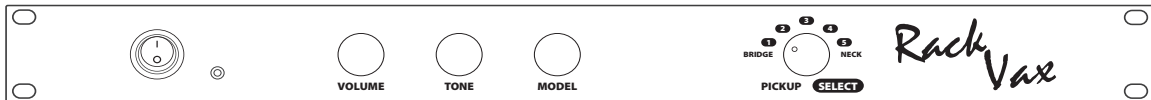
Precautions

- Use only the supplied AC power adapter.
- Unplug the unit when it is not in use.
- Do not expose the unit to excessive heat, moisture or direct sunlight.
- Never remove the chassis cover. There are no user serviceable parts inside.
- Refer all service and repairs to a RackVax-certified technician.

Features

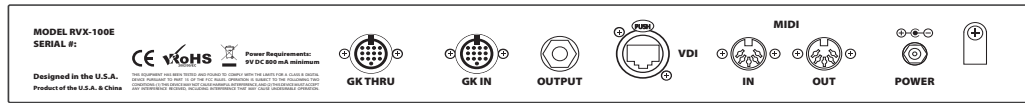
- Powered by included power adapter, Vetta II, PODxt Live, POD X3 Live, POD X3 Pro or POD HD500
- GK-compatible 13-pin input with $\pm 7V$ phantom power
- GK thru allows simultaneous connections to additional GK devices
- Full live control over volume, tone, pickup and model select and more via GK controls or with a MIDI foot controller
- Standard 1/4" analog guitar output jack
- Compatible with VDI (Variax Digital Interface) for POD® XT Live, POD X3 Live, POD X3 Pro, POD HD500, Vetta™ II, and Variax Workbench connectivity
- Analog bypass for your guitar signal
- MIDI in/out
- Over 25 unique instrument models
- Everything the original has, and more!

Front Panel





















1. **Power switch**—Powers the device on & off.
2. **Power LED**—When lit, indicates that the device is powered on.
3. **VOLUME**—Controls the volume of the selected instrument model. For electric models, the taper (how fast volume is increased from minimum to maximum) and the volume's effect on tone is accurately modeled for each individual instrument and will therefore be slightly different for each model. For acoustic models, the control is simply a level control for the virtual microphone.
4. **TONE**—Controls the tone of the selected instrument model. As with the volume knob, the response of the tone control varies to match the modeled electric instruments. For acoustic instruments, it simulates altering the microphone position.
5. **MODEL**—Controls the currently selected instrument or model bank available to the Pickup / Select knob. For specifics, see the **Instrument Models** section.
6. **PICKUP / SELECT**—For electric models, controls the pickup position and switches between different instruments. For acoustic models, it switches between the instruments available in the currently selected model bank. For details, see the **Instrument Models** section.













Back Panel

























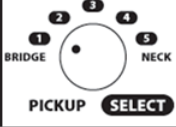








1. **GK THRU**—GK-compatible hex / DIN-13 thru which allows you to pass through the input from your guitar to other GK-compatible devices, enabling you to play other devices together with the RackVax simultaneously. May also be used to chain multiple RackVax units together for a dual (or triple, quadruple, and so on...) setup with multiple digital guitar models playable from a single guitar.
2. **GK IN**—GK-compatible hex / DIN-13 input. This is where you plug in your guitar with GK-compatible divided pickup.
3. **OUTPUT**—1/4" analog output for connection to guitar amps, stompboxes and other audio equipment using a standard guitar cable.
4. **VDI**—Variax Digital Interface jack for connection with compatible Line 6 devices, including POD XT Live, POD X3 Live, POD X3 Pro, POD HD500, Vetta II, and Variax Workbench Interface.
5. **MIDI IN**—MIDI connection for communication with compatible MIDI controllers such as footpedals and rackmount units. Also enables connection to Line 6 Monkey and Variax Workbench software using a computer and MIDI interface.
6. **MIDI OUT**—See above.
7. **POWER**—Input connection for the supplied power adapter.
8. **Power cord clip**—Used to secure and retain the power cord.

Instrument Models

	Instrument Description	 Model		 Pickup(s) Modeled
	Custom 1 Design your own guitar with the free Workbench software on your PC and put it here.	CUSTOM 1		
	1960 Fender Telecaster Custom Originally known as the Broadcaster, it was the first commercially successful solidbody electric guitar and has been the guitar of choice of Jeff Beck, Roy Buchanan, Albert Collins and Keith Richards.	T-MODEL		B N
	1968 Fender Telecaster (modified) Players looking for more versatility from the workhorse Tele discovered they could get a much more powerful sound by combining the two pickups in series (as in a humbucking pickup).	T-MODEL		B+N
	1968 Fender Telecaster Thinline Fender introduced the Thinline model in 1967. The chambered body reduced the weight to about half that of a typical Tele, while electronics were retained to deliver a variation of the Tele sound.	T-MODEL		B+N N
	1959 Fender Stratocaster The Stratocaster influenced electric guitar design more than any other single instrument and its distinctive contoured body and versatile electronics have become industry standard features. Unlike the original modeled instruments, the tone control on the Variax works on the bridge pickup too.	SPANK		B B+M M N+M N
	1958 Gibson Les Paul Standard The original series was a commercial failure and was discontinued in 1961. Later, musicians discovered the sweet sustain of a Les Paul through an over-driven amp. This is a 1958 version with two PAF pickups.	LESTER		B B+N N
	1952 Gibson Les Paul "Goldtop" So nicknamed for its metallic gold finish, it was the first model of the Les Paul series. This version features a P-90 pickup in the bridge position.	LESTER		B

	Instrument Description	 Model		 Pickup(s) Modeled
	1961 Gibson Les Paul Custom This popular incarnation of the Les Paul Custom (later known as SG) offers three PAFs. The Variax models the combination of bridge and middle pickups that set this Les Paul apart.	LESTER	4	B+M
	1956 Gibson Les Paul Junior Introduced in 1954 as the budget member of the Les Paul series, the body is a flat mahogany slab, and the electronics are simplified to include only a single P-90 in the bridge position.	SPECIAL	1	B
	1955 Gibson Les Paul Special An intermediate step between the Junior and the more luxurios standard. This Variax model is based on the original single cutaway version, with two P-90 pickups.	SPECIAL	3 5	B+N N
	1976 Gibson Firebird V Created with the help of Detroit automobile designer Ray Dietrich, the two Epiphone style minihumbuckers gave the Firebird a unique combination of sustain and a biting, trebly sound, which made it a favorite of Johnny Winter.	SPECIAL	2 4	B N
	1958 Gretsch 6120 The 6120 is usually associated with the “twangy” sounds of players like Duane Eddy, Eddie Cochran and Brian Setzer. This Variax model is based on a specimen equipped with hum-canceling pickups designed by Ray Butts.	R-BILLY	1 3 5	B B+N N
	1956 Gretsch Silver Jet The Jet series actually has internal hollow chambers that contribute to its resonant tone. The Variax model is based on a specimen with DeArmond pickups and a Melita bridge.	R-BILLY	2 4	B N
	1968 Rickenbacker 360 Though overshadowed by the success of the 12-strings, the 6-string version of Rickenbacker’s stylish model 360 continues to be popular among players looking for something out of the ordinary.	CHIME	1 3 5	B B+N N
	1966 Rickenbacker 360-12 Popularized by George Harrison in the Beatles and Roger McGuinn in the Byrds, the distinctive jangle of 12-string Rickenbackers was a significant part of the 60’s rock sound.	CHIME	2 4	B N

	Instrument Description	 Model		 Pickup(s) Modeled
	1961 Gibson ES-335 The “woody” tone of these guitars made them popular with Jazz artists like Larry Carlton and Blues greats like B.B. and Albert King. The Variax model is based on a 1961 dot neck, with two PAFs.	SEMI		B B+N N
	1967 Epiphone Casino Gibson acquired rival Epiphone in 1957 and some of the models developed under the Epiphone brand were variations of then-current Gibson models. The Casino was essentially a Gibson ES-330 and was one of John Lennon’s preferred guitars.	SEMI		B N
	1957 Gibson ES-175 With the addition of a second pickup in 1953, and humbucking pickups in 1957, the ES-175 quickly became a popular and enduring choice for electric jazz guitarists.	JAZZBOX		B B+N N
	1953 Gibson Super 400 By simply adding the pickups and controls developed for its early electric guitars, Gibson created the electric version of the Super 400 in 1951. The Variax model is based on the early version with P-90’s.	JAZZBOX		B N
	1959 Martin D-28 The D-28 is generally considered the definitive Martin flat-top and produces a full sound ideal for flat-picking.	ACOUSTIC		
	1970 Martin D12-28 In 1970, Martin added 6 more strings to the successful D-28 to capitalize on then-current folk music trends.	ACOUSTIC		
	1967 Martin O-18 The smaller sized body with mahogany back and sides has a balanced tone ideal for fingerstyle playing.	ACOUSTIC		
	1966 Guild F212 Guild’s Jumbo-bodied 12-strings offered players the elusive combination of volume and clarity. The Variax model is based on one of the simpler specimens of the line, the F212 with mahogany back and sides.	ACOUSTIC		

	Instrument Description	 Model		 Pickup(s) Modeled
	1995 Gibson J-200 Easily identified by its impressive size and ornamentation, the J-200 was often seen played by flashy country and western artists and was a later favourite of Elvis Presley.	ACOUSTIC	5	
	1935 Dobro Model 32 Though most dobros were wood-body instruments, a few were made from other materials. This model is based on a specimen with an all aluminum body that emphasizes midrange.	RESO	1	
	Coral Sitar The Coral Sitar offered guitarists the ability to get the buzz and drone of a sitar without having to learn a new instrument. In the Variax model, the tone control changes the level of the drone strings.	RESO	2	
	1965 Danelectro 3021 Danelectro managed to make great sounding guitars from masonite and lipstick tubes. The Variax model is based on a 3021 with both pickups active.	RESO	3	B+N
	Gibson Mastertone Banjo The Mastertone series was introduced in 1925 and quickly became the definitive Bluegrass banjo.	RESO	4	
	1928 National Tricone The first National guitar was the Tricone (or “Tri-Plate”) introduced in 1926. The Tricone used three 6-inch cones mechanically coupled to the bridge to amplify string vibrations.	RESO	5	
	Custom 2 Design your own guitar with the free Workbench software on your PC and put it here.	CUSTOM 2	1 2 3 4 5	

Please Note:

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SETUP

Power

RackVax requires power in order to function and it can be powered with the supplied power adapter or through the VDI connection.

Power Adapter

The simplest way to power RackVax is to use the supplied power adapter. Connect the barrel plug of the AC adapter to the **POWER** jack on the back of RackVax and plug the other end of the adapter into an AC power outlet. Turn the power switch on and the LED on the front of your RackVax will light up to indicate it is powered.

VDI Power

If you own a device compatible with VDI (Variax Digital Interface), you can power RackVax with it. Connect your compatible device (Line 6 POD XT Live, POD X3 Live, POD X3 Pro, POD HD500, Vetta II) to the **VDI** jack on the back of RackVax and your RackVax will be powered even without the use of the included AC-DC power adapter.

I/O

Input

In order to plug your guitar into RackVax, you will need a GK-compatible divided pickup with 13-pin output and a 13-pin GK cable. See our website at www.rackvax.com for more information.

With your gear and cable in hand, plug the 13-pin cable into the guitar or pickup's 13-pin output and connect the other end to the **GK IN** jack on the back of your RackVax.

Note:

RackVax provides $\pm 7V$ phantom power to your pickup when powered on.

Output

RackVax has both digital and analog output options and can output to any devices to which you normally connect your guitar.

Guitar Cable to Amp or Effects

You can plug RackVax into your amp, stompboxes or any other devices which accept a standard 1/4" analog guitar input. Simply connect the **OUTPUT** jack on the back of your RackVax into the input of your other devices using a standard guitar cable.

VDI

As with the original Variax, RackVax includes digital I/O capabilities via a connector called the Variax Digital Interface. VDI features pristine, noise-free digital audio signal transfer and enables bi-directional control with compatible devices. This special interface is compatible with the Line 6 POD XT Live, POD X3 Live, POD X3 Pro, POD HD500, Vetta

II and the Variax Workbench USB interface. A VDI cable or standard CAT 5 networking cable are required in order to make a connection with another VDI-capable device. For more information, see the manual of your VDI-compatible device.

MIDI

RackVax makes MIDI control possible for those with MIDI controllers, including foot pedals and rackmount MIDI units, by adding MIDI input and output jacks to the original Variax electronics. Additionally, RackVax can connect to the Line 6 Monkey and Variax Workbench software via your computer's MIDI interface.

MIDI IN

Connect the MIDI IN jack to the MIDI output of your other MIDI-capable devices.

MIDI OUT

Connect the MIDI OUT jack to the MIDI input of your other MIDI-capable devices.

CUSTOMIZATION

Build a Custom Guitar

There are two banks named **CUSTOM 1** and **CUSTOM 2** which are at the beginning and end of the **MODEL** knob, respectively. These positions can each be used to save five customized instrument models and all their settings. There are two ways to do this. One involves the Variax Workbench computer software and offers the most control, while the other is more primitive and can be accomplished using only the RackVax itself.

RackVax Save Procedure

If you've adjusted a model to your liking and would like to save it to one of the custom banks, here's how to do it:

1. Pull out the **MODEL** knob (gently) to start the save process.
2. Change the **PICKUP / SELECT** knob to the position where you'd like to save your sound. (Moving the knob during saving will only change the save location, not the sound.)
3. Rotate the **MODEL** knob to the custom bank of your choice (**CUSTOM 1** or **CUSTOM 2**).
4. Push the **MODEL** knob back in.

The current settings are now saved in the position you selected.

Variax Workbench

The Variax Workbench software is available as a free download from www.line6.com and is compatible with RackVax. It allows complete customization and saving of every instrument model bank within RackVax as well as the creation of your own unique instruments with the following features:

- Construct alternate tunings.
- Build a guitar from several instrument body types.
- Manipulate tone and volume control values.
- Choose pickup type, wiring, phase, position, and angle for electrics and alter microphone positioning for acoustics.

You will need a compatible VDI or computer MIDI interface to connect RackVax to your computer. Whichever method is used, the software experience is seamless.

Connect to Workbench with VDI

If you own a Line 6 device with Variax Digital Interface connectivity, simply connect RackVax to the device and the device to your computer via USB or MIDI, depending on the device in question.

Compatible devices:

- Line 6 POD XT Live, X3 Live, X3 Pro, HD500 (USB)
- Line 6 Variax Workbench Interface (USB)
- Line 6 Vetta II (MIDI)

Connect to Workbench via MIDI

You can directly connect RackVax to a computer MIDI interface using the **MIDI IN** and **MIDI OUT** jacks in order to establish connectivity with the Variax Workbench software.

See the instructions accompanying Variax Workbench for further information.

GK CONTROLS

Pickup & Model Select

Single-clicking the **Up (S2)** and **Down (S1)** buttons on the GK pickup changes the pickup of the active model (1-Bridge to 5-Neck), which is equivalent to the 5-way pickup switch, while double-clicking the same buttons changes the active Variax model bank (Custom 1, T-Model, Spank, Lester, etc.), the equivalent of the model knob.

Control Volume & Tone

Holding **Up (S2)** until the power LED blinks once causes the GK potentiometer knob to control the Tone parameter. Holding **Down (S1)** until the power LED blinks once causes the GK potentiometer to control the Volume parameter.

Switch Between Factory & User Patches

Holding both **Up (S2)** and **Down (S1)** until the power LED blinks causes the current patch to switch from a Factory patch to the equivalent User patch and vice-versa. If the LED blinks once, the patch was switched from User to Factory. If the LED blinks twice, the patch was switched from Factory to User.

Ignore GK Controls

Holding the **Down (S1)** button while powering the unit on causes the RackVax to ignore the GK control input. This is useful in situations where you might be using the GK THRU with another processor and wish to control it with the GK controls instead. The other processor will still receive the input from the GK controls even when RackVax is ignoring it.

Analog Bypass

Holding **Down (S1)** while single-clicking **Up (S2)** switches the audio source of the RackVax 1/4" analog output to the signal from your guitar output on GK pin 7, which is usually the output of the regular magnetic pickups on your guitar.

Turn Variax DSP Processing On & Off

Holding **Up (S2)** while single-clicking **Down (S1)** switches the audio source of the RackVax analog output to the Variax processed signal. Triggering this button sequence while the Variax processed signal is already active causes the raw output from your piezo or magnetic GK pickup to be present at both the RackVax 1/4" analog out and the VDI digital audio output. Triggering it one more time will switch back to the Variax processed signal.

Turn MIDI Thru On & Off

Holding **Down (S1)** while double-clicking **Up (S2)** switches the MIDI THRU functionality on. Holding **Up (S2)** while double-clicking **Down (S1)** switches the MIDI THRU off.

MIDI IMPLEMENTATION CHART

RackVax RVX-100E Version 1.0 Date: November 2010

	Function	Transmitted	Recognized	Remarks
MIDI Channels		1 - 16	1 - 16	Default = channel 1
Note Numbers		No	No	
Program Change	True #	Yes	Yes	USER Custom 1: 0 - 4 Custom 2: 55 - 59 T-Model: 60 - 64 Spank: 65 - 69 Lester: 70 - 74 Special: 75 - 79 R-Billy: 80 - 84 Chime: 85 - 89 Semi: 90 - 94 Jazzbox: 95 - 99 Acoustic: 100 - 104 Reso: 105 - 109 FACTORY T-Model: 5 - 9 Spank: 10 - 14 Lester: 15 - 19 Special: 20 - 24 R-Billy: 25 - 29 Chime: 30 - 34 Semi: 35 - 39 Jazzbox: 40 - 44 Acoustic: 45 - 49 Reso: 50 - 54 Variax patches ordered from neck - bridge SPECIAL 110: DSP Off 111: Analog Bypass 112: Mute 1/4" output
Bank Select		No	No	
System Exclusive		Yes	Yes	Used within Variax Workbench software

Control #	Function	Transmitted	Recognized	Remarks
7	Volume	Yes	Yes	0-127
79	Tone	Yes	Yes	0-127
46	Calibrate	No	Yes	See note on GK Vol. knob calibration procedure below
47	Control Vol/Tone	No	Yes	Volume: 0-63 Tone: 64-127
66	Factory / User Mode	No	Yes	User: 0-63 Factory: 64-127
107	MIDI Thru On/Off	No	Yes	MIDI Thru Off: 0-63 MIDI Thru On: 64-127
109	MIDI Channel Select	No	Yes	Set MIDI channel. 0-15 = MIDI channels 1-16
110	DSP On/Off	No	Yes	Off: 0-63 On: 64-127
111	Analog Bypass	No	Yes	Guitar: 0-63 Variax: 64-127
112	Mute Analog Output	No	Yes	On: 0-63 Off: 64-127

GK Volume Knob Calibration Procedure

If your GK Synth Volume knob is functioning improperly with RackVax, it may require calibration. Sending MIDI CC #46 will allow you to calibrate the GK potentiometer. The calibration procedure will initiate and cause the power LED to blink 5 times. During this time, you are expected to turn the GK potentiometer to the lowest setting and leave it. The LED will then pause briefly and begin to blink 5 more times. During this time, you are expected to turn the GK potentiometer to the highest possible setting and leave it. The calibration procedure is complete when the blinking stops.

Specifications

Nominal Output Impedance (Analog Out): 100 Ohm

Power Requirements: 9V DC, 800mA

Dimensions: 19" x 1.75" x 6" (1U rack)

Weight: 4.75 lbs

SUPPORT

Support is available on the RackVax website at www.rackvax.com. There is a searchable knowledgebase of answers to frequently asked questions and other helpful information, in addition to forums for asking questions. If you are unable to find the answer you are looking for after browsing our support resources, contact information is provided for you to ask our support department directly.



RACKVAX NON-TRANSFERABLE LIMITED WARRANTY

Customer Name: _____

Date of Purchase: _____

Purchased From: _____

Serial Number: _____

WARRANTY

RackVax, LLC warrants the product to be free from defects in material and workmanship for a period of (1) year from the original date of purchase. If the product fails within the warranty period, RackVax, LLC will repair or, at our discretion, replace the product at no cost to the original purchaser.

EXCLUSIONS

This warranty covers defects in manufacturing discovered while using this product as recommended by RackVax, LLC. This warranty does not cover loss or theft, nor does the coverage extend to damage caused by misuse, abuse, unauthorized modification, improper storage, lightning, or natural disasters.

LIMITS OF LIABILITY

In the case of malfunction, the purchaser's sole recourse shall be repair or replacement, as described in the preceding paragraphs. RackVax, LLC will not be held liable to any party for damages that result from the failure of this product. Damages excluded include, but are not limited to, the following: lost profits, lost savings, damage to other equipment, and incidental or consequential damages arising from the use, or inability to use this product. In no event will RackVax, LLC be liable for more than the amount of the purchase price, not to exceed the current retail price of the product. RackVax, LLC disclaims any other warranties, express or implied. By using the product, the user accepts all terms herein.

HOW TO OBTAIN SERVICE UNDER THIS WARRANTY

Contact RackVax through our website at www.rackvax.com for Return Authorization and information. Proof of original ownership may be required in the form of receipt from an authorized dealer.

RackVax

www.rackvax.com