

Variax

Pilot's Handbook

Before using your Variax you should read these Important Safety Instructions. Keep these instructions in a safe place.

1. Obey all warnings in this Pilot's Handbook.
2. Do not place near heat sources, such as radiators, heat registers, or appliances which produce heat.
3. Guard against objects or liquids.
4. Power the XPS Footswitch only with the included PX-2 Power Supply or equivalent.
5. Connect the PX-2 Power Supply only to AC power outlets rated 100-120V or 230V 47-63Hz (depending on the voltage range of the included power supply).
6. Do not step on power cords. Do not place items on top of power cords so that they are pinched or leaned on.
7. Unplug your Variax and XPS Footswitch when not in use for extended periods of time.
8. Do not perform service operations beyond those described in the Variax Pilot's Handbook. Repairs and service operations beyond the scope of those in the Pilot's Handbook should be performed only by qualified service personnel.
9. Prolonged listening at high volume levels may cause irreparable hearing loss and/or damage. Always be sure to practice "safe listening."

Your Variax should include these accessories:

Gigbag, XPS Footswitch, PX-2 Power Supply, TRS Cable, 1.5mm Allen wrench, 4mm Allen wrench

WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

CAUTION: No user-serviceable parts inside. Refer servicing to qualified service personnel.

CAUTION: This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Please Note:

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Welcome to Variax

Thanks for buying a Variax and joining us in our quest to apply the miracle of modern technology to the pursuit of great guitar tone. You now own detailed models of some of the most distinctive electric and acoustic guitars of all time—all wrapped up in a single comfortable and highly-playable instrument with a style all its own.

How does it work?

How do we get all of these sounds in a guitar that doesn't even have any visible pickups? We use piezo bridge pickups to capture each individual string's vibrations, and process the signals through software algorithms that capture the physical and electronic properties of the guitars that we've modeled.

This process dynamically alters Variax's own natural string vibrations to match the modeled instrument's unique tonal characteristics. That means there's no delay caused by having to detect a pitch and turn it into a MIDI note, and there's also no issue with tracking bends, hammer-on's, pull-off's, slides or any other techniques that are a part of your style. Plus, since Variax delivers its uncannily accurate sounds without the use of traditional magnetic pickups, it isn't susceptible to hum from fluorescent lights or computer monitors.

How did we manage to capture the tonal souls of all these classic guitars and spirit them into your Variax? We're glad you asked....

The Dream...

A couple of years before Variax was born, we turned our attention from the PODs, amps, and effects that we had been developing to take a fresh look at the guitar itself. Like all guitarists, we were intimately familiar with the unique pleasures that come from various instruments, and the great tonal variety that the world of electric and acoustic guitars has to offer. We wondered—could it be possible to capture a complete range of this tone in one single instrument? It was a daunting task, but then so was the idea of squeezing a whole collection of amps and effects into one little kidney bean shaped metal box. So we figured, why not give it a go?

What, we asked ourselves, might this marvel do? Well, for one thing, how about giving you access to an unprecedented number of certified classic sounds? How about letting you change from the sound of a 50's solidbody to the sound of a 60's electric 12-string as easily as using a pickup selector switch? How about the round, smoky tone of a hollowbody

archtop or the full-bodied resonance of a dreadnought acoustic? How about the raspy growl of a resonator, or the buzzing drone of a sitar?

The Journey

We knew our sounds would have to be amazingly accurate to meet the needs of discriminating guitarists, so we began an intensive research project into guitar physics. Like Frankenstein's lab, our own R&D facility became the site of round-the-clock investigations of the mysterious secrets of guitars' life force. We systematically examined every factor that contributes to each guitar's tone, and developed ways to measure the complex interactions of vibrating strings, resonant bodies, and magnetic pickups. Equally important, we developed ways to capture these interactions mathematically so we could get the same sounds from our own guitar-in-the-making.

As we refined our measuring and modeling techniques, we perfected a new, powerful hardware platform that could deliver our astoundingly accurate sounds. With the ability to switch sounds in the fraction of a second that it takes to slap a pickup selector switch to the next position. With less noise than a standard humbucker. That could be powered in a variety of ways. And, most importantly, that performs so flawlessly that you can forget it's even there.

Of course, a guitar that delivers such a vast array of tones really needs a look all it's own, so we started developing the look and feel of a guitar that could be used in any musical endeavor. We combined our innovative guitar modeling technology with a deceptively simple control layout and a comfortable, balanced body inspired by the best aspects of many of the guitars we had chosen to model.

With the body and brain of the Variax completed, it was time for us to create the soul. We auditioned a drool-inducing array of vintage instruments to find the ones with the most distinctive voices and personalities. We applied our painstaking measuring techniques to these specimens, and refined our models while constantly referring back to the originals for accuracy. When each model reached the point of not only sounding like the original, but also being as much fun to play, it was done.

The result of our labors? Variax. An entire guitar collection in a single instrument.

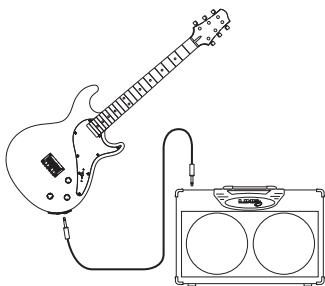
Basic Operations

Connections

You may have already noticed that the Variax has two output connectors: a familiar 1/4-inch jack and a second “mystery” jack protected by a rubber cap. This “mystery” connector will be the way you will add future upgrades and additional capabilities to your Variax, but all of the operations described in this manual will use the 1/4-inch output.

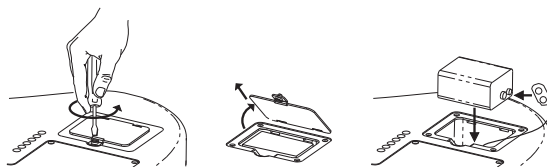
Guitar Cable to Amp

The simplest way to use the Variax is to connect it directly to your amplifier (or stompboxes) with a standard mono guitar cable.



Battery Power

Of course, the electronics of the Variax will need power, so you'll have to install six AA cells in the on-board battery compartment. If you use fresh alkalines, you should get approximately 12 hours of continuous operation.

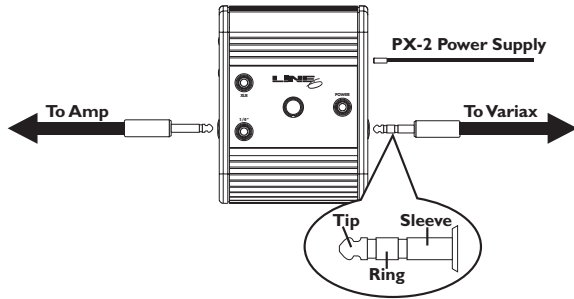


The battery will only be used when a mono cable is connected – the standard cable you'd use for a guitar. For longest battery life, always unplug your Variax when not in use.

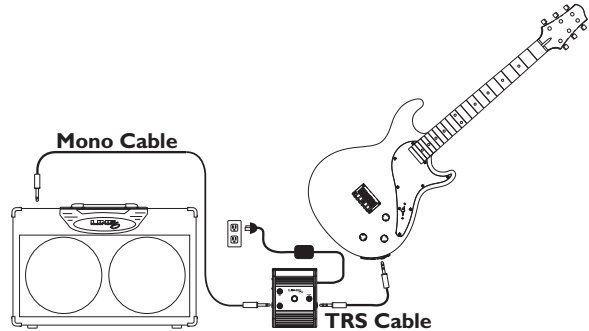
NOTE: If you find yourself at a gig with no AA cells, you can unclip the plastic battery holder from the connector and substitute an ordinary 9V battery. This is only an “emergency” alternative, though, as the battery will only last 1 to 2 hours

XPS Footswitch Power

We realize that constantly changing batteries can be a real drag, so we included a more convenient option—the unobtrusive yet capable XPS Footswitch.



Powering your Variax with the XPS Footswitch is easy. Use the included TRS cable (meaning “tip-ring-sleeve” or also simply known as a “stereo” cable) to connect the Variax to the **INPUT** jack of the XPS Footswitch. Connect the PX-2 power supply to the XPS Footswitch **POWER** jack, and use a standard mono guitar cable to connect the XPS Footswitch’s **1/4" OUTPUT** to your amp or effects.



NOTE: If you have batteries installed in your Variax, they will be bypassed when using your XPS Footswitch. If the guitar is connected to the XPS and the XPS power is disconnected, any batteries installed in the Variax will be drained.

Cable Specifications

If you happen to lose the Custom Cable supplied with your Variax, you can obtain a replacement from Line 6 Customer Service (see page 24 of the Pilot's Handbook for contact information). You can also simply use any high-quality TRS cable up to 18 feet.

XPS Footswitch Direct Out

But wait—there's more: Not content to merely provide power to the Variax, the eager to please XPS Footswitch also functions as a combination A/B switch and direct box.

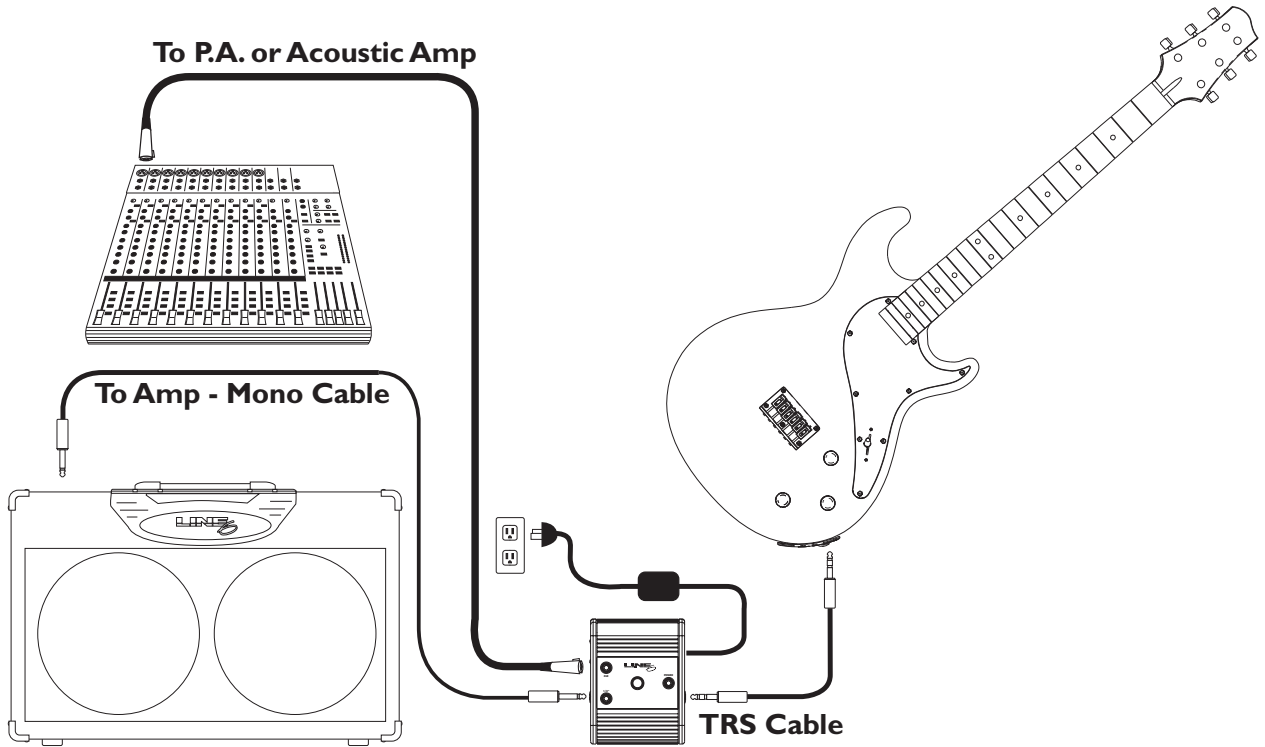
Why, you ask? Well, the detailed acoustic models of the Variax may lack something when played through an electric guitar amplifier, because these guitar amps don't have the extended high frequency range of, say, an acoustic guitar amp with a tweeter, or a PA system. To insure that you get that all-important high end shimmer from your acoustic sounds, here's the drill:

Connect your guitar cable from the XPS **1/4" OUTPUT** jack to your amp and/or stompboxes. Connect the (balanced, +4 dBu compatible) **XLR OUTPUT** of your XPS to your PA system or acoustic amplifier with a standard mic cable.

When the **1/4"** indicator light is lit on your XPS Footswitch, you've got your guitar routed to your standard amp. Jump on the switch to light the **XLR** indicator light, and your signal will now be routed to the **XLR OUTPUT**, bathing you in the tonal glory of full frequency range sound!

XLR Hum and A/B Switching

The XLR output of the XPS is designed to connect to the balanced inputs that are typical on good quality mixers and recording systems. Connecting the XLR output to a device with an un-balanced input may cause hum on that device when the XPS 1/4-inch output is selected. You may be able to use an XLR to 1/4-inch in-line transformer (the kind that does impedance matching as well as adapting the connectors) to eliminate the hum. Better yet, if you find that you want to be able to send your Variax's output to two separate, un-balanced devices with 1/4-inch inputs (like guitar amps, say) we recommend the use of an ordinary A/B switch connected to the 1/4-inch output of the XPS.



Controls

Let's start simple, and work up to the fancy stuff:

The **Volume Knob**, appropriately enough, controls the volume. You may notice that the taper (how fast you go from minimum to medium to maximum), as well as the volume control's effect on tone, will be slightly different for various models. For electric-based models, volume response and tone interaction duplicate the experience of the modeled instrument—maximizing model authenticity. For acoustic models, the Volume is simply a level control.

The **Tone Knob** controls—you guessed it!—the tone. As with the Volume, the response of this control varies to match the modeled electric instruments. If you've spent much time recording *acoustic* instruments, you've probably discovered the kind of tonal variations possible by simply altering microphone position. For the ACOUSTIC and RESO models, the tone control gives you the same kind of variations.

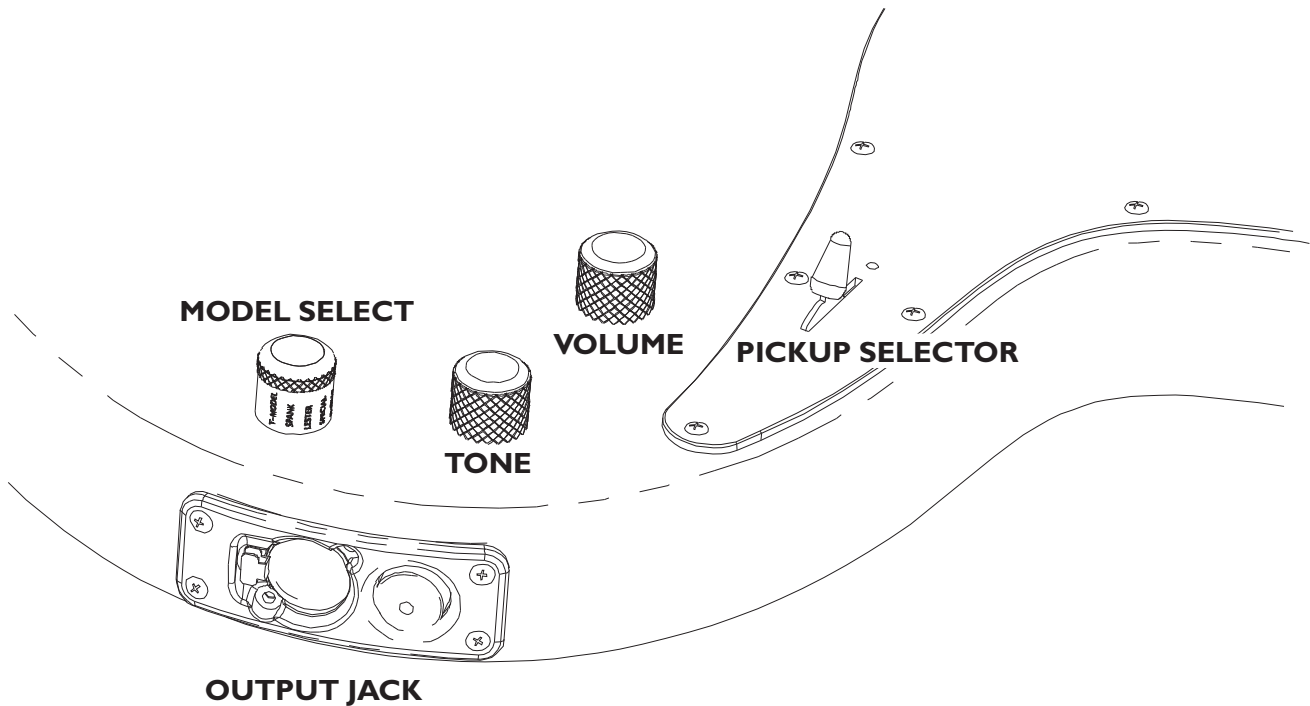
When you get to the **Model Select Knob**, things start to get really interesting. Ten of its positions each offer 5 distinct sounds (representing one, two or even five different guitars), accessed by the Pickup

Selector. For specifics on the models and variations available, see “**The Guitars of Variax**”.

The other two positions of the **Model Select Knob**—Custom 1 and Custom 2 save and recall your own custom setups. For the secrets of the Custom positions, see “**Build a Custom Guitar**”.

The **Pickup Selector** will work exactly as you expect it to on the electric models. In a three pickup model, like SPANK, all five positions will duplicate those on the modeled instrument. In more common two pickup models, positions 1, 3, and 5 will give you the characteristic sounds for those instruments—bridge pickup only, both pickups, and neck pickup only. The “in-between” positions (2 and 4) usually offer sounds from related guitars. After all, who can have enough variety?

When it comes to the acoustic models, the **Pickup Selector** offers 5 distinct instrument sounds, all a switch-flick away! The individual model descriptions in “**The Guitars of Variax**” section get down and dirty with the details.

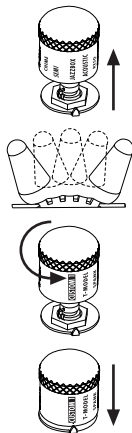


Build a Custom Guitar

To really take advantage of the range and versatility of the Variax, especially when performing, you need immediate access to your essential sounds. Use the custom banks of Variax's model knob to get your ten favorite tones ready for recall with a well-timed flick of your pinky.

You've got **CUSTOM 1** at the beginning of the Model Select rotation, and **CUSTOM 2** at the end. Each of these can store a different set of five of your favorite sounds. You could, for instance, put acoustic sounds in **CUSTOM 1**, and electric sounds in **CUSTOM 2**. Or load one up for your disco band, and the other for your polka gig.

Let's say you found a sound that you know you'll be coming back to again and again. Here's what you do:



1. Pull up on the **Model Select Knob** to start the Save process
2. Flick the **Pickup Selector** to the position you want to save your sound to. (Moving the Pickup Selector while you're saving won't change the sound, only the save location.)
3. Rotate the **Model Select Knob** to the custom bank of your choice (**CUSTOM 1** or **CUSTOM 2**).
4. Press the **Model Select** knob down.

That's all there is to it. You've saved your sound to the current position of the **Pickup Selector** in the Custom Bank you've chosen. Now that you've got it all down, you can repeat these steps for the remaining nine positions. (Or not, if you like the ones we've already saved there for you.) And if your tastes change, you can Save over any of those ten custom variations as often as you like.

When you save a particular sound to one of the CUSTOM banks, the tone knob's position is also saved by default. You'll find that when you select a stored sound, it will sound as if the tone control was in the position it was in when you first saved the sound. The actual position of the tone control will be ignored, until you adjust it.

If you don't want to save the position of the tone control to your CUSTOM banks, just rotate the tone control after you've pulled up the Model Select

Knob (it won't change the sound during this special Save mode) and before you press it back down. When you select then this sound later, the actual position of the tone control will be used instead of a saved value. You can use both methods if you wish, sometimes choosing to save the tone, sometimes not, even in the same CUSTOM bank.

Contents Of Custom Knob Positions

Here's what's in the custom slots when a Variax ships from the factory:

Knob/Pickup Sel	Model is based on...	Which is also at...
CUSTOM 1 / 1	1995 Gibson J-200	ACOUSTIC / 5
CUSTOM 1 / 2	Gibson Mastertone Banjo	RESO / 4
CUSTOM 1 / 3	1966 Guild F212	ACOUSTIC / 4
CUSTOM 1 / 4	Coral Sitar	RESO / 2
CUSTOM 1 / 5	1935 Dobro Model 32	RESO / 1
CUSTOM 2 / 1	1958 Gibson Les Paul Standard, bridge pickup	LESTER / 1
CUSTOM 2 / 2	1956 Gretsch Silverjet, bridge pickup	R-BILLY / 2
CUSTOM 2 / 3	1968 Rickenbacker 360, bridge and neck pickups	CHIME / 3
CUSTOM 2 / 4	1959 Fender Stratocaster, middle and neck pickups	SPANK / 4
CUSTOM 2 / 5	1967 Epiphone Casino, neck pickup	SEMI / 4

THE GUITARS OF VARIAX

General Notes About the Models

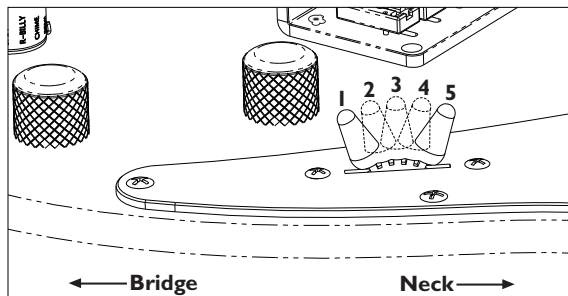
Each Variax model has five different variations available—one at each position of the **Pickup Selector Switch**. These five variations may all be based on the same guitar, two or three similar guitars, or, for the **ACOUSTIC** and **RESO** models, each variation may be based on an entirely different instrument.

For electric models, the **Volume** and **Tone** controls work like the ones found on the instruments we modeled. Rolling off the volume, for instance, will typically result in a darker sound. The output level of each model is based on the modeled instrument. Models with humbucking pickups, for example, will tend to be louder than those with single-coils.

For acoustic models, the **Volume** control acts as a simple level control. Since acoustic guitars don't have tone controls, we got to have some fun with Variax's **Tone** control with the acoustic models. Give it a spin to explore a varying range of tonal flavor for each model. To preserve the full range of the acoustic and resonator guitars, use the XLR output of the XPS Footswitch to send the signal directly to your mixer or acoustic amp.

Pickup Position Numbering

We've numbered the pickup positions in the manual starting with "bridge" (the position toward the bridge) as 1. Moving the pickup selector from there, you go through positions 2, 3 and 4 on your way to the "neck" position (the position toward the neck) which we label as number 5.



T-MODEL



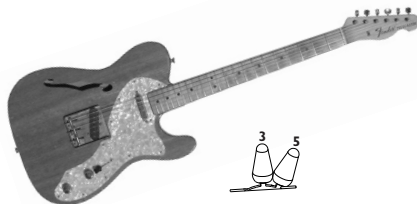
Based on 1960 Fender Telecaster Custom

Leo Fender's Telecaster, originally known as the Broadcaster, was the first commercially successful solidbody electric guitar and has been in continuous production for over fifty years. A brilliant example of functional, efficient design, the Telecaster has been the guitar of choice for guitarists like Jeff Beck, Roy Buchanan, James Burton, Albert Collins, Danny Gatton, and Keith Richards.

Note: The neck pickup position of this model, like the original, has a very "deep" sound and the tone control is bypassed.

Position 1: Bridge

Position 4: Neck



Based on 1968 Fender Telecaster Thinline

Faced with the difficulty of obtaining lightweight ash, Fender introduced the Thinline model in 1967. The chambered body reduced the weight to about half that of a typical Tele of the time, while the traditional electronics were retained to deliver a variation of the trademark Tele sound.

Position 3: Bridge+Neck

Position 5: Neck



Based on modified 1968 Fender Telecaster

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 on a humbucking pickup).

SPANK



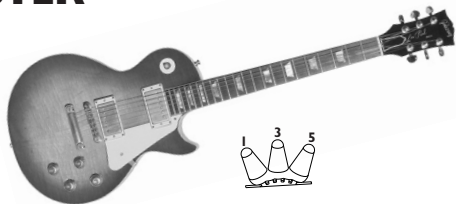
Based on 1959 Fender Stratocaster

The curvaceous Stratocaster is further evidence of the genius of Leo Fender. Considered a radical departure at its introduction in 1954, the Strat soon eclipsed the popularity of its older sibling and became one of the most visible instruments in the formative years of rock and roll. The Stratocaster influenced electric guitar design more than any other single instrument and its distinctive comfort-contoured body, bolt-on neck, and versatile electronics have become industry standard features.

Our model takes one slight liberty; unlike the modeled instrument, the tone control works on the Bridge pickup, too. We trust that Leo won't mind.

- Position 1:** Bridge
- Position 2:** Bridge+Middle
- Position 3:** Middle
- Position 4:** Neck+Middle
- Position 5:** Neck

LESTER



Based on 1958 Gibson Les Paul Standard

Gibson's first solidbody electric design was a collaboration with popular guitarist and recording pioneer Les Paul. Unlike the easy-to-manufacture Fender designs, the Les Paul retains the carved top and set neck construction of their hollowbody models. The original series was a commercial failure, however, and was discontinued in 1961. Influential musicians like Mike Bloomfield and Eric Clapton discovered the sweet sustain of a Les Paul through an overdriven amp. The resulting resurgence of popular interest led to its reintroduction in 1968.

We've modeled a 1958 version that features the coveted "P.A.F." pickups.

Position 1: Bridge

Position 3: Bridge+Neck

Position 5: Neck



Based on 1952 Gibson Les Paul "Goldtop"

The "Goldtop", nicknamed for its metallic gold finish, was the first model of the Les Paul series. Our version features a P-90 pickup in the bridge position.



Based on 1961 Gibson Les Paul Custom

In addition to its sophisticated ornamentation, this particular incarnation of the Les Paul Custom offers three P.A.F.'s. We've modeled the combination of bridge and middle pickups that set this Paul apart.

SPECIAL



Based on 1956 Gibson Les Paul Junior

The Les Paul Junior was 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. The meaty tone, light weight, and uncompromised playability made the Junior a favorite of Mountain's Leslie West.

Based on 1955 Gibson Les Paul Special

The Special was added to the Les Paul line in 1955 as an intermediate step between the utilitarian Junior and more luxurious Standard. The greater tonal options made possible by the second P-90 helped make the Special a favorite of reggae legend Bob Marley. Our model is based on the original single cutaway version.

Position 3: Bridge+Neck

Position 5: Neck

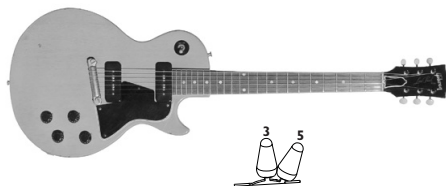


Based on 1976 Gibson Firebird V

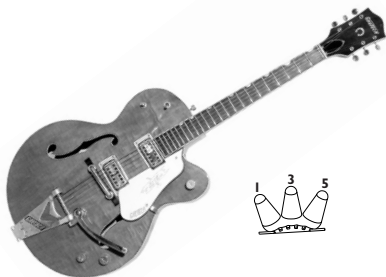
The Firebird, introduced in 1963, was created with the help of Detroit automobile designer Ray Dietrich. Neck-through construction and Epiphone-style mini-humbuckers gave the Firebird a unique combination of good sustain and a biting, trebly sound—characteristics which made it a favorite of blues slide guitar legend Johnny Winter.

Position 2: Bridge

Position 4: Neck



R-BILLY



Based on 1959 Gretsch 6120

The 6120 was the first of several models that Gretsch developed with country guitar whiz Chet Atkins. The 6120 is usually associated with the “twangy” sounds of players like Duane Eddy, Eddie Cochran, and Brian Setzer, but Pete Townshend found his 6120 perfect for the crushing power chords of “Who’s Next.” This particular specimen is equipped with Filter’tron hum-canceling pickups designed by Ray Butts.

Position 1: Bridge

Position 3: Bridge+Neck

Position 5: Neck



Based on 1956 Gretsch Silver Jet

Gretsch introduced a series of so-called Solid Body guitars in 1955 that included the Jet Fire Bird with a red top, the Duo-Jet with a black top, and the Silver Jet with — you guessed it — a silver top. Though called a solidbody by Gretsch, the Jet series actually has internal hollow chambers that contribute to its light weight and resonant tone. The black version (the Duo-Jet) was the favorite instrument of Cliff Gallup, original lead guitarist for Gene Vincent’s Blue Caps. The guitar we modeled had DeArmond pickups and a Melita bridge.

Position 2: Bridge

Position 4: Neck

CHIME



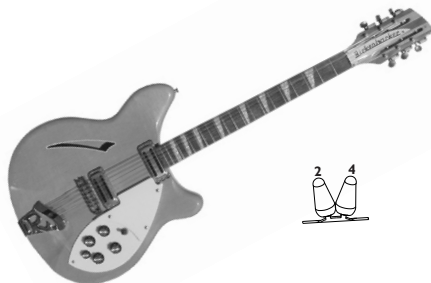
Based on 1968 Rickenbacker 360

Though overshadowed by the success of the 12 string, the 6 string versions of Rickenbacker's stylish models continue to be popular with players looking for something a bit out of the ordinary, like Ed O'Brien of Radiohead.

Position 1: Bridge

Position 3: Bridge+Neck

Position 5: Neck



Based on 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. Our Ricky has the original "toaster" pickups.

Position 2: Bridge

Position 4: Neck

SEMI



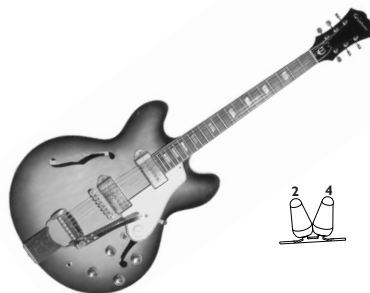
Based on 1961 Gibson ES-335

The Semi-hollow Gibsons were conceived as a blend of the tone and sustain of a solidbody with the balance and aesthetics of a hollowbody. The “woody” tone of these guitars made them popular with Jazz artists like Larry Carlton and Blues greats like B. B. and Albert King. Our model is based on a 1961 dot neck, with P.A.F.’s and a stop tailpiece.

Position 1: Bridge

Position 3: Bridge+Neck

Position 5: Neck



Based on 1967 Epiphone Casino

Gibson acquired former rival Epiphone in 1957 and began producing Epiphone guitars in its Kalamazoo factory. Some of the models developed for Epiphone were variations on then-current Gibson models. The Casino, for example, was essentially a Gibson ES-330. John Lennon was particularly fond of the Casino, and continued to record with it long after the breakup of the Beatles.

Position 2: Bridge

Position 4: Neck

JAZZBOX



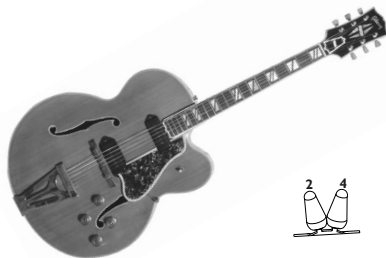
Based on 1957 Gibson ES-175

Gibson added a sharp “Venetian” cutaway and a slightly fancier fingerboard to the budget ES-125 model to create the ES-175 in 1949. 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.

Position 1: Bridge

Position 3: Bridge+Neck

Position 5: Neck



Based on 1953 Gibson Super 400

By the end of the 1940's, changing musical styles found premium archtops like the L-5 and Super 400 to be lacking in volume. By simply adding the pickups and controls developed for its early electric guitars, Gibson created the electric version of the Super 400 in 1951. Our model is based on the early version with P-90's. Check out Scotty Moore (and Elvis) playing a Super 400 in the '68 Comeback Special.

Position 2: Bridge

Position 4: Neck

ACOUSTIC



Based on 1959 Martin D-28

The D-28 is generally considered the definitive Martin flat-top. The Dreadnought (or “D”) body combined with rosewood back and sides produces a full sound ideal for flatpicking.



Based on 1970 Martin D12-28

In 1970, Martin added 6 more strings to the successful D-28 to capitalize on then-current folk music trends.



Based on 1967 Martin O-18

The smaller “parlor” sized body with mahogany back and sides has a balanced tone ideal for fingerstyle playing.



Based on 1966 Guild F212

Guild’s Jumbo-bodied 12-strings offered players the elusive combination of volume and clarity. We’ve modeled one of the simpler models in the line, the F212 with mahogany back and rims.



Based on 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 favorite of Elvis Presley.

RESO



Based on 1935 Dobro Model 32

Though most Dobros were wood-body instruments, a few were made from other materials. This model is based on an unusual specimen with an all-aluminum body that emphasizes midrange.



Inspired by the Coral Sitar

Designed in conjunction with session guitarist and electronics experimenter Vinnie Bell, the Coral Sitar offered guitarists the ability to get the buzz and drone of a sitar without having to learn a new instrument. On this model, the tone control changes the level of the drone strings.



Based on 1965 Danelectro 3021

Danelectro managed to make great sounding guitars from Masonite and lipstick tubes. Our model is based on a 3021 (Jimmy Page's favorite Dano) with both pickups active.



Inspired by the Gibson Mastertone Banjo

The Mastertone series was introduced in 1925 and quickly became the definitive Bluegrass banjo, due in no small measure to a long-standing association with virtuoso Earl Scruggs.



Based on 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. The Tricone has a smoother sound than later, single-cone resonators and was the primary instrument of Sol Hoopii, influential Hawaiian steel guitarist.

Care and Maintenance

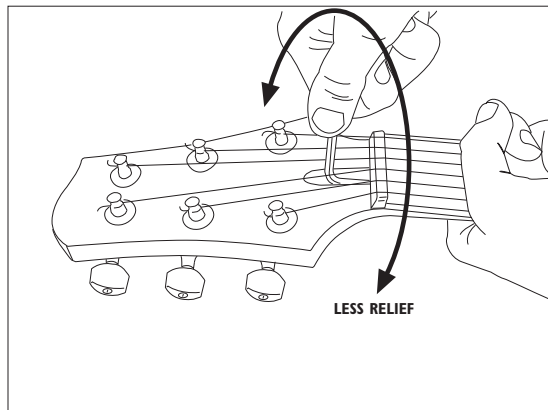
Only a few simple measures are required to keep your Variax looking and performing like new.

- After playing, wipe down the guitar and strings with a clean, soft cloth.
- Change strings when they become discolored or the guitar begins to sound dull.
- Occasionally clean the fingerboard surface with lemon oil and the painted surfaces with guitar or furniture polish.

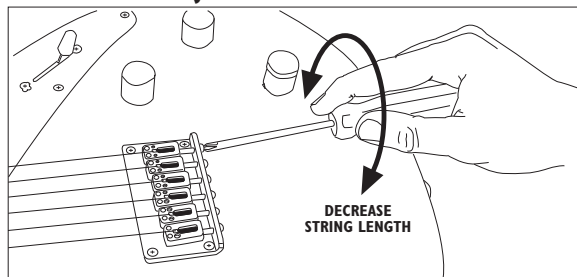
Neck Relief Adjustment

Depending on where you live, seasonal temperature and humidity variations may make it necessary to adjust the neck relief of the Variax. If you find that your Variax suddenly starts buzzing or is generally difficult to play, it may be time for this kind of adjustment. To check the neck relief, press the high E string to the first fret with your left hand, and press the same string to the last fret with your right hand. While holding the string at both points, check the point where the E string passes over the 10th fret. If the string is touching the fret, or if there is more space under the string than the thickness of a thin pick, it's time to adjust the neck.

If you are familiar with this kind of adjustment, remove the truss rod cover and use the supplied Allen wrench to adjust the truss rod. If the string was touching at the 10th fret (too little relief), turn the rod counterclockwise. If the gap was too great (too much relief), turn the rod clockwise. In both cases, make small adjustments and check the relief as you go. Never force the rod to turn—excessive tightening can damage your Variax. If you are unfamiliar or uncomfortable with this kind of adjustment, ask your local guitar shop to refer you to a qualified guitar tech.



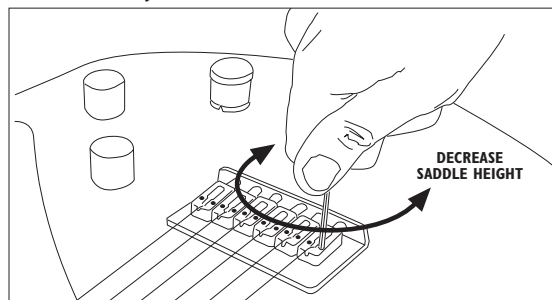
Intonation Adjustment



Intonation is adjusted by changing the position of the bridge saddles, which changes the length of the vibrating strings. The saddle position of each Variax is adjusted before it leaves the factory, but changing string brand, gauge, or action can change the intonation. To adjust the intonation, you will need an accurate tuner and a screwdriver. For each string, tune the open string as close as possible to correct pitch, then fret that string at the 12th fret and check the pitch. (Make this adjustment while holding the guitar in playing position.) If the fretted note is sharp, the string length is too short—turn the adjust screw clockwise. If the fretted note is flat, the string length is too long. Turn the adjust screw counterclockwise. Make small adjustments and retune and check the pitch as you go.

Important Note: Never attempt to remove the bridge saddles. If any of the wires attached to the piezo elements are broken or damaged, the Variax will not function properly.

Action Adjustment



The Variax leaves the factory adjusted for playability across a wide range of playing styles. The bridge saddle height can be adjusted to optimize playability for a particular style. If you are familiar with this kind of adjustment, use the supplied Allen wrench to raise or lower the bridge saddle screws as shown. As with neck adjustment, if you are unfamiliar with this kind of adjustment, ask your local guitar shop to refer you to a qualified guitar tech.

Customer Service

Before contacting the Line 6 Customer Service team, please take the time to look through this publication to see if it can answer your questions. Additional helpful information is on the Support page of the Line 6 web site (www.line6.com), including the searchable FAQTRAQ system which is often the fastest and easiest way to get answers.

If you need to talk to an actual human on the Line 6 Customer Service team by phone, it will generally help to take some notes for yourself before you call, to insure that you remember everything you want to ask about. In the USA or Canada, you can contact Line 6 at (818) 575-3600, 8AM to 5PM Monday through Friday (Pacific Time). Outside the USA and Canada, please contact your distributor directly to arrange service. The list of Line 6 distributors is available on the Internet at www.line6.com.

To obtain factory service:

If a member of the Line 6 Customer Service Team determines that your Variax needs to be sent to Line 6 for service, you will be given a return authorization (RA) number. Products returned without an RA number will be returned to you at your sole expense. Pack the product in its original shipping carton and attach a description of the problem along with your name and a phone number where Line 6 can contact you if necessary. Ship the product insured and freight prepaid to:

Line 6 Customer Service
6033 De Soto Avenue
Woodland Hills, CA 91367

Line 6 Warranty Policy

Line 6, Inc. (hereinafter "Line 6") warrants that your new Line 6 instrument shall be free of defects in workmanship and materials for the lifetime of the product and that the electronics contained within the instrument (printed circuit boards, piezo saddles, potentiometers, etc.) shall be free from defects in workmanship and materials for a period of one (1) year from the original date of purchase. In addition, the accessories (carrying case, power supply, and footswitch) shall be free of defects in workmanship and materials for a period of one (1) year from the original purchase date. This warranty is extended to the original retail purchaser only and may not be transferred or assigned to subsequent owners. In order to validate your warranty, and as a condition precedent to warranty coverage hereunder, a copy of the original sales receipt must accompany all warranty requests. This warranty policy is valid only when a new Line 6 instrument is purchased from an Authorized Line 6 dealer. This warranty is subject to the following exceptions and/or limitations:

This warranty does NOT cover:

1. Any instrument that has been altered or modified so that the serial number, name, identification numbers or logos have been tampered with or are missing.
2. Instruments or accessories not purchased from an Authorized Line 6 dealer.
3. Standard maintenance and adjustment of the instrument, electronics and action. Standard adjustments and maintenance are the sole responsibility of the owner.
4. Any defects in the instrument or accessories that are caused by or are the result of a lack of maintenance or adjustment.
5. Any instrument or accessory that has been repaired, altered or modified by a repair facility that is not authorized by Line 6, or any repairs, alterations, or modifications, regardless of the origin, that Line 6 has not approved.
6. Any damages to the instrument or accessory that is a result of abuse, accident or misuse, as determined by Line 6 in its sole discretion.
7. Any issues regarding the tonal aspects of the instrument. Tone is a product of perception and therefore cannot be warranted. Issues regarding the authenticity or interpretation of the models used also cannot be warranted.
8. Damages (due to shipping or otherwise) to the instrument or accessories that relate to improper storage or transportation.
9. Any failures to either the instrument or accessories that are a result of exposure to extreme conditions (including, without limitation, humidity, sunlight, bodily fluids, unapproved cleaning solutions or solvents, temperature and/or adhesives).
10. Any failures to either the instrument or accessories that are a result of normal "wear and tear" (including, without limitation, strings, fret wear, finish damage, potentiometers and connectors, pick guard, bridge, machine heads, finger board and carrying case).

If you feel that you have a warranty issue, please contact Line 6 or your authorized Line 6 dealer or distributor. Line 6 may issue a Return or Repair authorization as needed. No instrument or accessory will be accepted at the Line 6 facility for repair without (i) prior receipt of your original sales receipt, (ii) proper authorization by Line 6 or an authorized Line 6 dealer or distributor, and (iii) a Return Authorization number. Line 6 will refuse shipment of any instrument that is received without the foregoing three (3) prerequisites. Line 6 will repair or replace your instrument at its sole discretion. Parts that are replaced under this warranty are warranted for ninety (90) days or the remainder of the warranty period, whichever is longer. Line 6 reserves the right to use reconditioned parts and assemblies as warranty replacements for authorized repairs. All shipping charges to any repair facility are the sole responsibility of the owner of the instrument or accessory. Line 6 reserves the right to update any unit returned for repair, and reserves the right to change or improve the design of the product at any time without notice. This is your sole warranty. Line 6 does not authorize any third party, including any dealer or sales representative, to assume any liability on behalf of Line 6 or to make any warranty for Line 6.

DISCLAIMER AND LIMITATION OF WARRANTY: THE FOREGOING WARRANTY IS THE ONLY WARRANTY GIVEN BY LINE 6 AND IS IN LIEU OF ALL OTHER WARRANTIES. ALL IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE, EXCEEDING THE SPECIFIC PROVISIONS OF THIS WARRANTY ARE HEREBY DISCLAIMED AND EXCLUDED FROM THIS WARRANTY. UPON EXPIRATION OF THE APPLICABLE EXPRESSED WARRANTY PERIOD (1 YEAR), LINE 6 SHALL HAVE NO FURTHER WARRANTY OBLIGATION OF ANY KIND, EXPRESS OR IMPLIED. LINE 6 SHALL IN NO EVENT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES SUFFERED BY THE PURCHASER, OR ANY THIRD PARTY, INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS OR BUSINESS, OR DAMAGES RESULTING FROM USE OR PERFORMANCE OF THE INSTRUMENT, WHETHER IN CONTRACT OR IN TORT. LINE 6 SHALL NOT BE LIABLE FOR ANY EXPENSES, CLAIMS, OR SUITS ARISING OUT OF OR RELATING TO ANY OF THE FOREGOING. Some states do not allow the exclusion or limitation of implied warranties so some of the above limitation and exclusions may not apply to you. This warranty only applies to products sold and used in the United States of America and Canada. Line 6 shall not be liable for damages or loss resulting from the negligent or intentional acts of the shipper or his contract affiliates. You should contact the shipper for proper claims procedures in the event of damage or loss resulting from shipment.