

VTX™Series

TO PREVENT ELECTRICAL SHOCK OR FIRE HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. BEFORE USING THIS APPLIANCE, READ BACK COVER FOR FURTHER WARNINGS.



Congratulations! You are the owner of the most advanced tube-type amplification system available in today's marketplace. The new Peavey Heritage" VTX represents many years of manufacturing and production experience combined with the most up-todate developments in tube-type technology and state-of-the-art electronics.

We have included many new and unique features and design innovations to make the Heritage[™] a truly exceptional amp and one that should delight any "serious" performing musician. The overall operation of the Heritage[™] is fairly straightforward, yet complex enough that it should be studied and practiced just as any musical instrument would be.

We recommend that you thoroughly read and understand this operating guide so that you may enjoy to the fullest the benefits and capabilities of this advanced system. The first step in realizing the potential of the Heritage[®] VTX is a basic understanding of how signal flows through the system from the guitar to the loudspeaker. We have included a basic block diagram of the signal flow through the Heritage[®] for this purpose.



SIGNAL FLOW

The signal flow chart indicates that the HeritageTM is basically a two-channel system (lead and normal channels) with two main electronic sections (preamp and power amp). When signal is introduced through either the high or low gain input jacks, it travels into the preamp section where it is amplified and processed in both lead and normal channels. In the lead channel, pull bright, SATURATIONTM or thick effects may be added to the signal, or they may be bypassed. In the normal channel, the pull bright effect is the only optional feature. Signal from both channels enters the AUTOMIXTM channel switching circuitry which is controlled by a remote footswitch. Either channel or both may be selected. Signal from the selected channel(s) now travels through other effects (reverb and phaser if desired) and into the power amplifier. NOTE: If the footswitch is not plugged in, both channels are operable. The power amplifier then delivers an amplified signal to drive the ScorpionTM loudspeakers.

You might wonder why it is so important to know about signal flow. Notice on the chart that the signal **MUST** flow through the sections containing the phaser and reverb. This tells you that these features are available on **BOTH** lead and normal channels. Now, notice that SATURATION^{III} and THICK are post (after) the lead channel pre gain and pre (before) the post gain. These two features may only be operated through the lead channel.

Please study the flow chart. Since each control interacts and therefore has an effect on other controls, a complete understanding of signal flow will lead to maximum utilization of the Heritage's" advanced features and capabilities. We have also included several charts to give you some basic control settings with which to begin. Slight modifications to these settings may be necessary to suit your own individual tastes and performing requirements.

Following is an explanation of each control's purpose and operation. Experimentation with each control will aid in an overall understanding of your new Heritage".



INPUTS (A) (B)

The Heritage" VTX provides two input jacks, each having different sensitivities and a unique arrangement allowing the gain of both jacks to be equalized when instruments are plugged into both jacks simultaneously.

The high gain jack (A) has considerably more sensitivity and input impedance than the low gain jack (B) and is the input normally used with most instruments, especially when maximum distortion and overdrive are desired.

The low gain jack (B) exhibits approximately 6 dB less gain and is intended primarily for use with instruments which have extremely high output pickups. "Hot" pickups will sometimes prematurely overload the high gain input jack causing an unpleasant tonality and harsh overdrive characteristics.

You should experiment with both input jacks to determine which will best suit your own individual playing style and your instrument's output characteristics.

The difference between the two jacks may be seen by plugging into the high gain jack and setting the gain of the amp to an appropriate level. Now plug the instrument into the low gain jack being sure to leave both amp and instrument gain at the same settings. The overall system gain will now be lower and you will notice a decrease in volume.

LEAD CHANNEL

GAIN BLOCK"

The lead channel of the Heritage[™] has been designed utilizing Peavey's new GAIN BLOCK[™] signal processing front end circuitry. The three interacting controls provide total control of the amp's gain structure (dynamics), harmonic content, overload texture, and output level.

Each of the three controls must be understood and experimented with in order to utilize the potential of this specialized circuitry. Note in the SIGNAL FLOW BLOCK DIAGRAM where each of these controls falls into the flow pattern. The setting of each control will interact and have an effect on the action of the other controls.

PRE GAIN/PULL BRIGHT (C)

The lead channel pre gain control is similar to a conventional volume control in that it is the first level setting device in the system. Operation of this control is conventional even though the associated circuitry is quite different from older, totally passive units. Please be aware that this control exhibits the professional logarithmic (audio) taper, having approximately one-fourth of the gain achieved at the 12 o'clock position with the remainder being obtained as the control is rotated clockwise. This logarithmic action significantly increases the amount of "control latitude" available. Rotating the control clockwise increases the gain of the Heritage" preamp section and thus raises the volume level of the system.

The pre gain control also features an integral pull switch which adds a significant boost (8 dB) to the high frequencies when activated. This high frequency boost gives a nice "edge" to clean playing styles. However, experience has proven that this high boost tends to detract somewhat from the smooth overload characteristics when playing in the distortion mode. The pull bright switch should therefore be in its off (pushed in) position when the smoothest distortion characteristics are desired.

SATURATION" (D)

This control is the element for setting the operating point of our new (patent applied for) and unique SATURATION[™] circuitry. SATURATION[™] is a very sophisticated circuit that synthesizes the action of vacuum tubes (valves) when they are overdriven. The SATURATION[™] effect operates within the preamp section and exhibits more effect as the control is rotated clockwise.

The SATURATION* control must be balanced with appropriate settings of the pre and post gain controls to obtain optimum results. The pre gain control must be set high enough to provide adequate drive voltage to the SATURATION" circuitry while the SATURATION control is varied to achieve the desired overload characteristics. The post gain control is then set to achieve the desired output level and harmonic texture.

NOTE

IT SHOULD BE REMEMBERED THAT THE SATURATION" EFFECT TAKES PLACE WITHIN THE PREAMP SECTION. WHEN THE PRE AND POST GAIN CONTROLS ARE OPERATED AT OR NEAR MAXIMUM SETTINGS, AND THE AMP APPROACHES MAXIMUM OUTPUT, THE SATURATION" CIRCUIT WILL HAVE CORRESPONDINGLY LITTLE EFFECT ON THE TOTAL SOUND OF THE AMP AS THE NORMAL OVERLOAD CHARACTERISTICS OF THE TUBE POWER AMP SECTION COME INTO EFFECT.

POST GAIN (E)

The post gain control sets the input sensitivity and thus the output level of the Heritage" power amp section. The action of this control is similar to a master volume control and can be used to control the overload dynamics of the preamp section by decreasing the sensitivity of the power amp. Rotating the control clockwise increases the sensitivity of the power amp and the overall volume level of the system.

For clean playing styles, this control should be operated near or at its maximum setting. When distortion is desired, the setting of the control becomes even more important. For optimum SATURATION[™] effects and the smoothest distortion characteristics, the control should be set at "5" or lower. Settings higher than "5" may create an overload situation within the tube type power amp section adding additional harmonics and different overload textures. Experimentation with this control will determine which setting will best suit your individual playing style.

EQUALIZATION

Each channel of the Heritage^{**} features entirely separate and independent equalization circuitry for maximum system flexibility. The lead channel features unique 4-band equalization circuitry which will provide almost unlimited tonal variations. The low, mid and high bands are of the passive type preferred by many rock guitarists with the fourth and being an "active" presence control.

The presence control effects an extremely high band of frequencies and is placed at a very precise point within the frequency spectrum to either smooth out or give an edge to overall tonality as required by playing style, a particular guitar, and/or playing technique. LOW EQ (F)

The low frequency control determines the low frequency response of the lead channel. Rotating the control clockwise increases low end (bass) response.

NOTE TO AVOID PREMATURELY OVERDRIVING THE POWER AMP, CARE SHOULD BE TAKEN NOT TO OVERBOOST THE LOW END. WITH GUITAR SIGNALS, EXTREME BASS BOOST DOES NOT ADD SIGNIFICANTLY TO THE PROJECTION CAPABILITIES OF THE AMP, BUT DOES CONSUME A DISPROPORTIONATE AMOUNT OF THE AVAILABLE POWER, USUALLY AT THE EXPENSE OF THE MID AND HIGH FREQUENCIES.

MID FREQUENCY EQ CONTROL (G)

The mid EQ control determines the level of the vital midrange frequencies. Our research indicates that the midrange is often the most important (and overlooked) range of frequencies. This midband is what actually makes guitars and amps sound the way they do. The extremes of highs and lows sometime have minimal effect on the overall tonal color, while those frequencies we call the midrange really make the vital difference between merely a good and a great sound. The middle frequency EQ control will enable tremendous tonal variation and is designed to interact slightly with both the low EQ and the high EQ controls. This interaction or overlapping action enables endless subtle tonal "shadings" to be achieved.

The action of the middle control is conventional with increasing midrange response as the control is rotated clockwise. This control is very effective in determing the overall "color" of the sound when using the SATURATION"/overload features of the amp. Generally, a much "thicker" and "fatter" sound is obtainable when more mid boost is used for hard rock. For clean country/jazz playing, more mid cut is usually better....In any case, this EQ works and should be used to fine tune the overall low and high EQ to produce the desired tonal color.

HIGH FREQUENCY EQ/PULL THICK CONTROL (H)

This control element determines the amount of high frequency boost in the lead channel. The action of this control is conventional with an increasing amount of high boost obtained as the control is rotated clockwise. This high EQ circuit is extremely effective and should provide more than enough tonal variation for achieving almost any amount of "top end" required.

When playing hard rock, it is usually not a good idea to use maximum high end boost since excessive highs tend to make the smooth overload characteristics of the amp somewhat more strident and hard than is usually desirable.

PULL THICK

Incorporated into the high equalization control is a "PULL THICK" switch which drastically alters the tonality of the entire equalization system. This pull switch adds significant amounts of upper mid frequencies and has the overall tendency to create a full "thick" midrange tonality. The pull thick control when used in conjunction with SATURATION" will produce today's "rock" sound. The thick effect may be obtained only in the lead channel.

NOTE

THE PULL THICK FEATURE IS BYPASSED WHEN THE NORMAL CHANNEL IS SELECTED BY THE AUTOMIX" FOOT-SWITCH. WHEN THE PULL SWITCH IS ACTIVATED, THE HIGH FREQUENCIES MAY BECOME LESS PRONOUNCED BECAUSE OF THE FULLNESS ADDED BY THE BOOSTED MIDDLE FREQUENCIES. IN ADDITION, NORMAL TONE CONTROL ACTION (ESPECIALLY THE MIDDLE CONTROL) IS LESS PRONOUNCED AND EFFECTIVE.

PRESENCE EQ CONTROL (I)

To allow total control, we have included an active type presence circuit allowing true boost and cut capabilities. This control is located POST the regular EQ controls and is provided for precisely tailoring the extreme highs. The presence control is capable of making the output signal extremely "mellow" but still "lively" as well as adding tremendous "bite" in the boost positions. It is recommended that when utilizing the SATURATION" effect, the final edge or presence of the signal be adjusted with this control. Experience has proven that extreme boosts of the presence frequencies tend to cancel out some of the mellowness of the amp's overload characteristics. Again, experimentation is the key to achieving optimum results.

NORMAL CHANNEL

GAIN BLOCK

The function and operation of the normal channel gain block is identical to the lead channel gain block with the exception of the SATURATION" control. SATURATION" is not available in the normal channel.

The most common use for this section is to produce clean, undistorted sounds. However, many distortion "textures" may be produced by increasing the pre gain and decreasing the post gain. This is especially useful when the AUTOMIX™ footswitch is used to select or combine the lead and normal channels.

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PRE GAIN/PULL BRIGHT (J)

The action and operation of this control is identical to its counterpart in the lead channel.

POST GAIN (K)

The action and operation of this control is identical to its counterpart in the lead channel.

EQUALIZATION

The normal channel equalization circuitry is entirely active, featuring three bands (low, mid, high) with Peavey's unique PARAMID™ middle frequency control. The cut or boost capability of each control is approximately 15 dB.

Notice that the markings of the active controls differ from those of the passive EQ controls in the lead channel. The 12 o'clock (O) setting indicates a "flat" response with no cut or boost.

LOW EQ (L)

The low frequency control determines the low frequency response of the normal channel. Rotating the control clockwise increases low end (bass) response.

MID FREQUENCY EQ CONTROL

This unique circuitry allows boost or cut in the important middle frequencies.

However, we have given an additional element of control in this region by allowing the player to place the boost or cut at almost any point in the mid frequency region. (The "Q" or bandwidth is preset and is not adjustable.) Note that these two control functions are housed in one "concentric" potentionmeter.

PARAMID" CONTROL (M)

The PARAMID[™] control (small inner knob) is active and will boost or cut the selected frequency a maximum of 15 dB. Clockwise rotation from the "0" (flat) setting will increase response. Counterclockwise rotation will decrease the midrange response.

SHIFT CONTROL (N)

The shift control (outer ring) allows the player to "tune" to a specific center frequency. The selected frequency band may then be boosted or cut with the PARAMID" control. The shift control is "tunable" from 150 Hz to 1.5 KHz.

HIGH EQ (0)

This high EQ control determines the high frequency response in the normal channel. Clockwise rotation boosts the highs, counterclockwise rotation cuts the highs.

PHASE SHIFTER (P) (Q)

The Heritage's" phase shifter is an entirely new design and one that we feel is the best available today, either built into an amp or available as an accessory unit.

The depth control (P) sets the amount or "intensity" of phasing effect desired with clockwise rotation of the control increasing the intensity.

The range control (Q) determines the speed of the phasing effect from a very slow, barely perceptible rate to an extremely fast rate which is very similar to a rotating speaker. Rotating the range control clockwise increases the phasing rate.

The range control also features an integral pull switch which is called "pull set". This unique feature allows the player to stop the "sweep" of the phase circuit at any point in its travel through the frequency spectrum. When the switch is pulled to its "out" position, the automatic phase sweep is stopped. The phaser may now be set at any frequency point in its sweep by manually rotating the pull set/range control. You will find a whole new spectrum of effects with this feature, especially when the depth control is operated at its higher settings. The phaser is remotely selectable from the AUTOMIX[™] footswitch.

MASTER REVERB CONTROL (R)

This control determines how much delayed signal (reverb) is blended back into the main output signal. This control is conventional in operation and should present no difficulty. Please remember that the reverb function may be remotely controlled by use of the AUTOMIX" footswitch plugged into the remote switch socket on the rear of the chassis.

AUTOMIX" LED INDICATORS (W)

These red LED's (light emitting diode) give a visual indication of which channel has been selected by the AUTOMIX** feature.

OPERATIONAL STATUS LED (Green) (S)

The green LED indicates when the amplifier is operational (green on) or is in the standby mode (green off)

PILOT LED (Red) (T)

The red pilot LED (light emitting diode) indicates when the on/off switch has been placed in its "on" position and power is being supplied to the amplifier. This LED has a virtually infinite life span and should never need replacing throughout the life of the unit

HI POWER/STANDBY/LO POWER SWITCH (U)

The Heritage" is equipped with a three-position switch which yields full power, one-fourth power and "standby" in the center position. Please notice that "loudness" differences are not audible as the power switch is changed from hi to lo unless the amp is operated at or near full power. The gain/sensitivity remains the same for both settings and only total output power is varied with the power switch

ON/OFF SWITCH (V)

The on/off switch is a simple, two-position switch which should present no operational problems



FUSE (1)

The Heritage's'" fuse is located within the cap of the fuseholder at the extreme left of the rear panel. If the fuse should fail, IT MUST BE REPLACED WITH THE SAME TYPE AND VALUE IN ORDER TO AVOID DAMAGE TO THE EQUIPMENT AND TO PREVENT VOIDING THE WARRANTY. If your Heritage'' repeatedly blows fuses, it should be taken to a qualified service center for repair.

WARNING

THE FUSE SHOULD ONLY BE REPLACED WHEN THE HERITAGE'" HAS BEEN DISCONNECTED FROM ITS POWER SOURCE

LINE CORD (2)

For your safety, we have incorporated a three-wire (mains) cable on the bottom of the chassis with proper grounding facilities. It is not advisable to remove the ground pin under any circumstances. If it is necessary to use the amp without proper grounding facilities, suitable grounding adaptors should be used. Much less noise and greatly reduced shock hazard exist when the unit is operated with the properly grounded receptacles.

GROUND LIFT SWITCH (3)

This switch is the three-position type with the center (0) position completely removing the internal grounding capacitor from the circuit. This position is normally recommended for situations where the AC power receptacle is known to contain a properly grounded third wire. If properly grounced AC mains supply is not available, a suitable ground lift adaptor should be used. The (+ and -) positions are used to ground the amplifier properly when only two-wire services are available. One of these positions will yield the lowest amount of residual hum or "popping" when the instrument is touched.

NOTE

THE GROUND LIFT SWITCH IS NOT OPERATIONAL ON 220 VOLT AND 240 VOLT EXPORT MODELS

SPEAKER JACKS (4)

A special output transformer allows the Heritage** to deliver its full 130 watt RMS output into either a four ohm or a two ohm speaker load. The internal speaker load from the factory is four ohms and should be plugged into the four ohm jack

When a four ohm extension cabinet is employed in addition to the internal four ohm load, it should be plugged into the two ohm jack. The two ohm jack is a switching jack which activates the two ohm tap on the output transformer allowing full power output into both speaker systems.

When it is desired to use an extension cabinet with an impedance greater than four ohms, it should also be plugged into the two ohm jack. Power output will be **slightly** decreased in this mismatched configuration.

CAUTION

WE DO NOT RECOMMEND OPERATING THE HERITAGE" INTO LESS THAN A TWO OHM TOTAL LOAD. NO VACUUM TUBE AMP SHOULD EVER BE OPERATED WITHOUT A LOAD (SPEAKER) ON THE OUTPUT JACKS.

AUTOMIX"

AUTOMIX'* is Peavey's unique control system which allows channel selection and effects activation (phase shifter and reverb) via a remote footswitch. NOTE — STANDARD USE OF THE AUTOMIX'* CIRCUITRY IS TO SELECT BETWEEN THE DISTORTION MODE IN THE LEAD CHANNEL AND A CLEAN SOUND IN THE NORMAL CHANNEL.

AUTOMIX[™] REMOTE SWITCH SOCKET (5)

The remote switch socket is the standard "DIN" type and serves as the amp connection for the AUTOMIX" remote footswitch. Please note that the DIN plug has an indentation that must be mated with the matching indentation in the footswitch receptacle on the rear panel. This keying action allows the footswitch to be connected only in the proper manner. If the plug is forced or undue pressure is exerted on the shell or pins, damage could result to the plug or the socket. As with any precision device, reasonable care should be exercised.

PREAMP OUT (7)/POWER AMP IN (6)

To allow "in line" patching of various accessories, we have included a system of preamp out/power amp in jacks on the rear panel. The preamp out is the straight preamp signal which is the sum of the outputs of the two channels plus reverb. The output level is approximately 1 volt RMS and is relatively low (600 ohms) impedance. The preamp out signal is connected through a switching contact to the power amp input jack, and normally the preamp out is internally connected to the power amp's input. This circuit allows basically two modes of operation. When signal is taken from the preamp output, signal is also delivered to the internal power amplifier. If access to the internal power amplifier is needed or if some accessory device such as a noise gate, delay line, effects device, etc., is to be patched "in line," then the **preamp output** signal must be connected to the **auxiliary unit's input**, while the **auxiliary unit's output** must be connected to the **power amp input** with shielded cables, thereby placing the auxiliary unit in series or "in line" with the normal signal path. Additional booster amp/speaker combinations should be patched using the preamp output. With this unique patching facility, many interesting effects can be accomplished.

Please note that the power amp input has a sensitivity of 1 volt RMS at an input impedance of 20K ohms. Any device capable of interface with this impedance and/or level should function satisfactorily.

LINE OUTPUT (8)

The line output jack is extremely useful for "direct" connection to mixing consoles in both recording and sound reinforcement applications. This line out has been frequency compensated to match the rolloff characteristics of the amp's internal speaker system. Thus, what is heard at the amp is what is delivered to the mixing console.

SCORPION" LOUDSPEAKERS

The Heritage" VTX was developed utilizing the latest advances in design technology and state-of-the-art electronics. We therefore felt it was appropriate that its internal speaker system be just as technologically advanced.

The two I2" Scorpion™ transducers employ many of the same innovative design features as our world famous Black Widow® speakers.

A field replaceable cone/basket assembly, rigid case aluminum frame, and massive magnetic assembly are but a few of the features that make the Scorpion[™] ideal for the performer who insists on reliability and performance.

The Scorpion" features high efficiency, high power handling and specially tailored response characteristics. Its unique field replaceable basket assembly makes the reconing process a thing of the past.





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Due to our efforts for constant improvement, features and specifications listed herein are subject to change without notice.