



*When I considered having a signature series amp built, there were several important issues that needed to be addressed. First, it had to sound superior to any other amp I'd ever come across and it had to be built to withstand the abuse that a world tour could give it. It also had to be something affordable for most musicians and not just a few privileged ones! It had to have the appearance of class and integrity that reflects the sound. I'm thrilled to say The Legacy is all that I dreamed it could be.*

Congratulations on your purchase of the Legacy all tube signature amplifier. Steve Vai worked very closely with Carvin Engineering to develop the sound and look of the Legacy Amplifiers. Exhaustive listening tests of various tube and electronic circuitry were performed by Vai. He also tested dozens of prototype enclosures loaded with various vintage and prototype speakers. His choice of EL34 tubes and Celestion™ Vintage 30 speakers provide the finishing touches on a truly original amp.

**CLEAN AND OVERDRIVE CHANNELS**

The equalization of the clean and overdrive channel is designed to offer clarity to your instrument. You will also take notice of the clean channels PRESENCE which adds acoustic voicing to your instrument. This switch boosts only the guitars very

highest harmonics which are in the 10k Hz range instead of the normal 3K Hz of a bright switch. The PRESENCE control on the lead channel is designed to adjust the "edge" on your sound. It's dynamic range allows for super-smooth sounds or turned the other way, it can add bite to your leads.

**DYNAMIC EL34 POWER TUBES**

Your amp is equipped with EL34 power tubes because of their smooth distortion, responsive sound and reliability. The compression characteristics of these "high-output" power tubes respond to the dynamic range of lead guitar playing. These tubes react even to the most subtle touch—if you play soft, the tubes remain clean and if you increase your attack they respond accordingly.

**TONE CONTROLS**

The T-Bridge passive BASS, MID and TREBLE tone controls offer a wide range of tone settings. Take full advantage by setting them where they sound best. Your sound may not be at center 5 on the dial. These controls will not affect or color your sound when set at extreme settings, nor do they interact with each other. The greater range of these controls comes from the high impedance 1 meg sealed pots (most guitar amps use 250k pots). The frequency of the bass control is set at 80 Hz while the mid control is set at 650 Hz. The treble control is set at a very high 11k Hz giving the Legacy its dynamic highs.

**REVERB**

The FS22 footswitch for the long tailed REVERB system in the Legacy switches only the reverb "send" leaving the tail of the reverb to decay naturally, the way it's done in the studio. A special pre filter eliminates the spring "boing" normally heard in other systems giving it a "lush" sound. The all tube reverb system offers vibrant clarity with full depth reminiscent of the sixties tube amps. Guitar Player magazine rated this system as one of the best they have heard.

**RECEIVING INSPECTION—read before getting started**

INSPECT YOUR AMP FOR ANY DAMAGE which may have occurred during shipping. If any damage is found, please notify the shipping company and CARVIN immediately.

SAVE THE CARTON & ALL PACKING MATERIALS. In the event you have to re-ship your unit, always use the original carton and packing material. This will provide the best possible protection during shipment. CARVIN and the shipping company are not liable for any damage caused by improper packing.

SAVE YOUR INVOICE. It will be required for warranty service if needed in the future. SHIPMENT SHORTAGE. If you find items missing, they may have been shipped separately. Please allow several days for the rest of your order to arrive before inquiring.

RECORD THE SERIAL NUMBER on the enclosed warranty card or below on this manual for your records. Keep your portion of the card and return the portion with your name and comments to us.

**MODEL VL100 HEAD SPECS:**

RMS Power: 50 or 100 watts  
 Output Impedance: 4, 8 & 16Ω  
 Input Impedance: 470,000 ohms  
 Tone Controls: BASS: 80Hz  
 (Both Channels) MID: 600-700Hz  
 TREBLE: 11k Hz  
 Ch 1 Sensitivity: 16mV for clipping  
 Ch 2 Sensitivity: 30mV for full output  
 Channels: 2—switching  
 Voiced Line Out: 1.5 VAC @ 100 watts RMS  
 Preamp Tubes: 5—12AX7's (dual stage)  
 Power Amp Tubes: 4—EL34's (power pentode)  
 USA Model: 120VAC, 300VA  
 Export Model: 230VAC, 300VA  
 Cabinet Size: 24.25W x 10.5H x 9.5"D  
 Cabinet: 7-ply poplar wood  
 Net Weight: 40 lbs  
 Warranty: One Year  
 Options: CV3200 cover, FS22 footswitch

**MODEL VL212 COMBO SPECS:**

Speakers: Two Vintage 30 Celestion™ Speakers  
 RMS Power: 50 or 100 watts  
 Output Impedance: 4, 8 & 16Ω  
 Input Impedance: 470,000 ohms  
 Tone Controls: BASS: 80Hz  
 (Both Channels) MID: 600-700Hz  
 TREBLE: 11k Hz  
 Ch 1 Sensitivity: 16mV for clipping  
 Ch 2 Sensitivity: 30mV for full output  
 Channels: 2—switching  
 Voiced Line Out: 1.5 VAC @ 100 watts RMS  
 Preamp Tubes: 5—12AX7's (dual stage)  
 Power Amp Tubes: 4—EL34's (power pentode)  
 USA Model: 120VAC, 300VA  
 Export Model: 230VAC, 300VA  
 Cabinet Size: 26W x 10.25D x 19.5"H  
 Cabinet: 7-ply poplar wood  
 Net Weight: 62 lbs  
 Warranty: One Year  
 Options: CV3212 cover, FS22 footswitch

For your records, you may wish to record the following information.

Serial No. \_\_\_\_\_ Invoice Date \_\_\_\_\_

# VL100 / VL212 FRONT & REAR PANEL CONTROLS

## GETTING STARTED QUICKLY

If you are like most players, you probably want to plug in your new amp and get started playing it right away. You can read the rest of the manual later to learn the finer points of operating your amp. In order to get started you will need your Legacy amp, a 120 or 230 AC grounded power outlet, your instrument and a standard guitar cord. With the amp turned off, plug it into the proper AC voltage.

Now turn all the volume and drive controls off and set tone controls at their mid center position. If you have purchased the FS22 footswitch, plug it into the rear foot switch jack for switching the channels and reverb. Note: The channel SELECT button must be in the OUT position (CH 1) for the FS22 to function.

Now, turn the power switch and standby switch ON. Allow 60 seconds for the tubes to warm up. Gradually raise the volume controls and re-adjust the tone controls and you're ready to go. Please call if you feel your amp is malfunctioning. Occasionally tubes are damaged in shipping.

## FRONT PANEL

### 1. GUITAR INPUT

A standard 1/4" input jack feeds both channels through using the SELECT switch. Use a professional quality guitar cord no longer than 25 feet. Typical cable capacitance should be under 50pf—the longer the cord, the greater the capacitance (you can measure this with a capacitance meter). A long cable with high capacitance will reduce the overall treble response from your guitar pickups.

### 2. CHANNEL SELECT

Set the channel SELECT switch to the desired channel. The LED's next to the volume controls will let you see what channel is functioning. Use channel 2 for clean playing. Use channel 1 for overdrive/sustain. For the FS22 foot switch to function, set the channel SELECT to the "OUT" channel 1 position.

## LEAD CHANNEL 1

### 3. LEAD CHANNEL INDICATOR

The red LED will illuminate when the LEAD channel is selected.

### 4. LEAD VOLUME

The volume of the lead channel is to be used as a master level control. For partial clean output, set the VOLUME control to 10 and turn the DRIVE nearly off—under 1. By reducing the guitar volume, you can use this channel as an alternate clean channel.

### 5. LEAD DRIVE

For mild tube saturation, set the DRIVE control between 1 & 2. For some of the best saturation, set the control around 3 & 6. For full blown overdrive, set the control between 8 and 10. Drive settings above 8 are subject to over saturation depending on the output of the guitar pickups used. High-output pickups can over saturate causing sluggish distortion. Play your guitar with it's volume at 10 and decrease the amount of drive until the crisp highs come back.

### 6. LEAD—BASS, MID & TREBLE

To start off with, set the BASS, MID & TREBLE controls at their center (5) position. These controls are to be set according to the type of pickups used (dual or single coil). It's normal to decrease the BASS at higher playing levels. Try the PRESENCE control also when adjusting the treble.

### 7. LEAD PRESENCE

Channel 1 features it's own LEAD PRESENCE control for added clarity. It's frequency range is set at the mid range of the tonal spectrum. Careful adjustment with the TREBLE control will make this feature very useful.

## CLEAN CHANNEL 2

### 8. CLEAN CHANNEL INDICATOR

The red LED will illuminate when the CLEAN channel is selected.

### 9. CLEAN VOLUME

Channel switching from the Lead channel into Channel 2 gives you crisp, clean playing. Thanks to special mud-cutting circuits that work between the frequencies of 500 and 700 Hz, your guitar tones will be full and vibrant.

### 10. CLEAN PRESENCE

For added clarity, the CH 2 PRESENCE switch increases only the highest guitar harmonics in the 8-10k Hz range which is ideal for brightening up middy single coil neck pickups. A normal bright switch works only in the 3k Hz range leaving your sound somewhat flat. Single or dual coil pickups will determine the need for this switch.

### 11. CLEAN—BASS, MID & TREBLE CONTROLS

You can start at 5 on the dial for each of the tone controls. However, these settings do not represent a normalize (flat) sound. You need to set them where they sound best! Most musicians like to reduce the MID'S between 1 and 4 for deeper bass and crisper highs. If your sound is too bright with single coil pickups, you may want to keep the PRESENCE switch off.

## MASTER SECTION

### 12. MASTER REVERB

Set the REVERB control for the desired amount (this works in both channels).

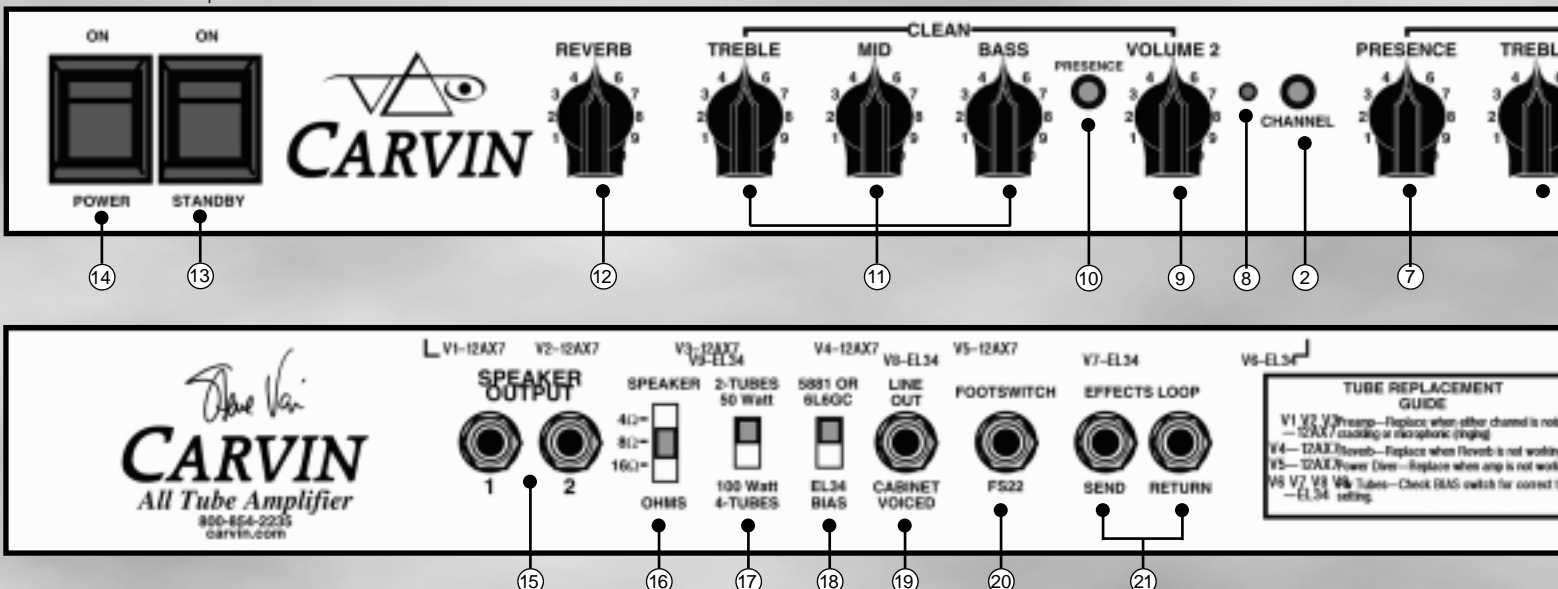
### 13. STANDBY SWITCH

Use the STANDBY SWITCH If you are taking a break. This turns the high voltage off, increasing the life of your power tubes while keeping the power and preamp tube filaments on for immediate use.

### 14. POWER SWITCH & INDICATOR

The power switch is to be utilized as the master ON/OFF switch. As the amp is turned on, the RED portion of the power switch will illuminate as your ON indicator.

VL100 Head as shown  
VL212 Combo front & rear panels reversed



## REAR PANEL

### 15. SPEAKER JACKS

Two 1/4" SPEAKER JACKS are featured to operate several speaker systems at the same time. Calculate the total speaker impedance based on parallel wiring as both speaker jacks are wired in parallel. Select the IMPEDANCE SWITCH for the correct impedance.

### 16. SPEAKER IMPEDANCE SWITCH

The IMPEDANCE SWITCH offers the selection of 4, 8 or 16 ohms to match your speaker system. The correct setting for use with one C412 cabinet is 16Ω. For use with two C412 cabinets, the correct setting would be 8 ohms. The impedance of the Legacy VL212 combo amp is 8 ohms. In the case of adding another 8 ohm system such as the C212E 8 ohm extension cabinet, move the switch to 4 ohms.

### 17. 4 TUBE 100 WATT OR 2 TUBE 50 WATT OPERATION

For maximum output power, be sure the power tube selector switch is selected for 4 TUBE 100 watt operation. For lower overall levels and early power amp clipping, move this switch to the 2 TUBE 50 watt operation. The volume reduction will only be 3 dB.

### 18. POWER TUBE BIAS SWITCH

If you desire to change from EL34 to 5881 (6L6GC) power tubes, you may do so by selecting the external BIAS switch to the 5881 (6L6GC) position on the rear panel. Be sure that this switch is selected to the proper position or excessive heat will damage your tubes.

The internal P11 bias trim control can be set by a qualified technician. To set the bias, measure the current across the terminals of the STAND BY switch (set this switch to the off position when the amp is on). Set the idle current to 100 mA for all tube types.

### 19. VOICED LINE OUT

The LINE OUT 1/4" jack is "CABINET VOICED" to prevent excessive bass or highs going to your mixer. This greatly aids in sound quality because you do not have to move your mixer EQ setting to the extreme. The 1.5 VAC output (reference to 100 watts output at 8 ohms) is more than adequate to drive any professional mixer or power amp.

### 20. FS22 FOOTSWITCH

Most foot pedals with 2 switches, a stereo cord and plug will work. However, Carvin's FS22 is recommended because of the correct identification label on the foot switch. First, the channel SELECT switch on the front panel must be selected to the "OUT" channel 1 position before the footswitch will work. Now that you are connected correctly, the channels and reverb can be switched remotely. If a hum is heard in the speakers, the select switch is in the wrong position (this will not harm the amp).

### 21. EFFECTS LOOP

For the lowest possible noise from an effects processor, use the effects loop instead of plugging the guitar into the effects and then into the amp. To use the EFFECTS LOOP, plug the INPUT of your effects into the SEND jack and the OUTPUT of your effects into the RETURN jack. Use shielded cables, not speaker cables. It's possible to have a slight gain reduction of several dB with some effects units. However, the amp has plenty of gain to overcome any loss.

### 22. AC POWER & FUSE

The detachable AC POWER CORD supplied is designed to operate with one type of voltage (the European 230V export model uses a CEE-7 plug cord set). Check the rear power cord label for the proper voltage and fuse value. Make sure the cord is securely inserted

into the back of the unit. Plug the cord into a grounded "3" prong" power source. No attempt should ever be made to defeat or use the amp without the ground connected.

The Legacy features a circuit breaker that protects itself from damage that would otherwise be caused by power surges, or short circuits from damaged cables.

## HELP SECTION

### a) USING THE VAI "HIDDEN FEATURE"

One of the "hidden" features of the Legacy amp is using a technique that Steve Vai requested be part of the amp for his own use. While playing on the lead channel with a generous amount of DRIVE (around 6), back off the volume on your guitar. You will find the channel actually "cleaned up" with your guitar at a lower volume. This is a great feature for playing both rhythm and lead without switching channels. You will also find that the amp will be very responsive to your "attack". An advanced player knows how to vary his/her attack when picking or strumming, and the Legacy is designed to respond to this.

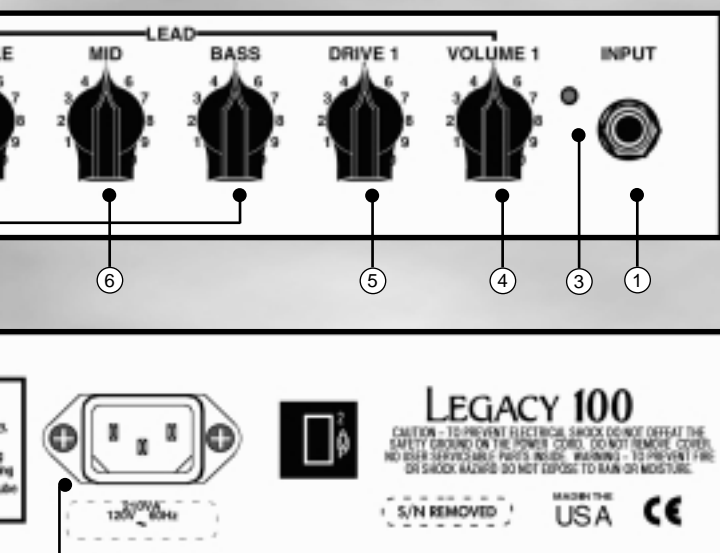
### b) FEEDBACK FROM THE LEAD CHANNEL

The Legacy will feedback when the LEAD volume, DRIVE, TREBLE and PRESENCE are turned all the way up. Like other highly modified tube amps, this is normal. To help reduce feedback and noise, keep the DRIVE control set around 5 to 7 on the dial. Some of the best lead saturation will be at around 5—not 10. Sometimes replacing V1 (12AX7A) can help reduce feedback.

### c) TUBE REPLACEMENT GUIDE

It is not uncommon for tubes to malfunction during shipping. If your amp is not working properly (popping noises, bad ringing, or power tube problems), please call for assistance or refer to the following tube replacement guide.

- 1) The 12AX7A preamp tubes V1 and V2 are the most critical tubes for noise problems with V1 being the most sensitive (try exchanging V1 and V2). Replace these tubes if you have popping or a bad ringing in the Lead Drive channel. Note: Low noise tubes are very hard to get and have to be tested for low noise. V3, V4, and V5 generally do not generate noise into the amp regardless of how noisy the tubes may be. V3 and V5 drives the Clean channel and power amp stage. V4 drives the Reverb system. If the reverb fails, check the cables before you replace V4. Sometimes the small lead wires inside the tank break. If the power amp section is not working, check V3 & V4 by inserting a signal into the rear EFFECTS RETURN jack. If the power amp still does not work, read about the power tubes V6 through V9. 12AX7 LOCATIONS: V1 is located next to the outside (left or right depending on the model). The other tubes following consecutively with V5 towards the middle of the chassis.
- 2) The EL34 power tubes are located in the following order on your chassis: V6, V7, V8, V9. Normally you'll want to replace these tubes as a set. Please call for our latest prices. Sometimes you can spot defective power tubes when they are glowing red-hot along with an audible hum in the speaker when the amp is idling. If this happens, shut the amp down immediately. Check the rear bias switch to be sure that it is selected for the proper tubes. After they have cooled down, remove by pushing the retainers on the base of the tubes down and rock the tubes in a circular motion while pulling them out. It is recommended to turn your amp upside down to replace tubes. All tubes are keyed in the same direction. Running defective power tubes could damage the amp. It is recommended that you have a spare set of power tubes along with several 12AX7A preamp tubes.



22 Press firmly until cord clicks in.



Visit the Carvin website for Steve Vai's amp settings, and sound samples. [www.carvin.com/vai](http://www.carvin.com/vai)

