HELP SECTION

a) USING THE VAI "HIDDEN FEATURE"

One of the "hidden" features of the Legacy II 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 II is designed to respond to this.

b) FEEDBACK FROM THE LEAD CHANNEL

The Legacy II 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 poping or a bad ringing in the Lead Drive channel. Note: Low noise tubes can be 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 drives the Clean and Boost channels. V4 drives the effect loop send and return. If the power amp section is not working, check V4 and V5 by inserting a signal into the rear EFFECTS RETURN jack. If the power amp still does not work, read about the EL34 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 twards 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.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT! FOR YOUR PROTECTION, PLEASE READ THE FOLLOWING:

WATER AND MOISTURE: Appliance should not be used near water (near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

POWER SOURCES: The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

GROUNDING OR POLARIZATION: Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

POWER CORD PROTECTION: Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

SERVICING: The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

FUSING: If your unit is equipped with a fuse receptacle, replace only with the same type fuse. Refer to replacement text on the unit for correct fuse type.

SAFETY INSTRUCTIONS (EUROPEAN)

The conductors in the AC power cord are colored in accordance with the following code.

GREEN & YELLOW—Earth BLUE—Neutral BROWN—Live

U.K. MAIN PLUG WARNING: A molded main plug that has been cut off from the cord is unsafe. NEVER UNDER ANY CIRCUMSTANCES SHOULD YOU INSERT A DAMAGED OR CUT MAIN PLUG INTO A POWER SOCKET.

LIMITED WARRANTY

Your Carvin product is guaranteed against failure for ONE YEAR unless otherwise stated. Tubes are guaranteed for 90 days. Carvin will service and supply all parts at no charge to the customer providing the unit is under warranty. Shipping costs are the responsibility of the customer. CARVIN DOES NOT PAY FOR PARTS OR SERVICING OTHER THAN OUR OWN. A COPY OF THE ORIGINAL INVOICE IS REQUIRED TO VERIFY YOUR WARRANTY. The CARVIN LIMITED WARRANTY covers all manufacture's defects. The warranty does not cover: speaker or driver failure due to an open or rubbing voice coil, or failure caused by any influence from misuse, dropped, dents, scratches, chemicals, paint, dust, wind, smoke, fire, water, liquid, moisture, salty or corrosive environment, and normal wear and tear. This warranty is in lieu of all other warranties, expressed or implied. No representative or person is authorized to represent or assume for Carvin any liability in connection with the sale or servicing of Carvin products. CARVIN SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

SERVICE

In the USA go to www.carvinservice.com

Outside the USA, contact your dealer or go to www.carvinworldservice.com for your nearest service center. Include a written description of the problem with serial number and date of purchase.

HELP SECTION

1) AMP WILL NOT TURN ON
   Check the power to the amp. Check for tripped circuit breakers, unplugged extension cords or power-strip switches that may be turned off. Check the fuse. If a dark brownish color or no wire can be seen within the glass tube, then replace. The amp may be perfectly fine but occasionally a fuse may blow because of high AC voltage surges. After the fuse has been replaced with the proper Slow Blow value and if the fuse fails again, the amp will require servicing.
2) NO OUTPUT with POWER LIGHT ON
   Tubes damaged in shipping will be the primary reason for your amp to not function properly. Please give us a call to help guide you through this simple repair.
3) KEEP YOUR AMP LOOKING NEW
   Use a damp cloth to wipe the controls on the front & rear chassis panels. Wipe the black vinyl covering with a damp cloth.

"The Legacy 2 is a dream amp. It's simple, versatile and the sound is creamy and warm. Finally there is an amplifier that has a Master Volume control that can raise or lower the overall sound coming out of the speakers without changing its saturation or tone. Although the sound has retained the integrity of the original Legacy, there is now an added channel that acts as a boost on the clean channel giving it a bit more hair. No need to keep dreaming, it's here."

Steve Vai

Congratulations on your purchase of the Legacy II all tube signature amplifier. Steve Vai worked very closely with Carvin Engineering to develop the sound and look of the Legacy II amplifiers. Steve also called on custom amp builder Benjamin Fargen for input on some specific component changes to refine the Legacy II tone. 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, BOOST, AND LEAD CHANNELS

The equalization of the CLEAN, BOOST and LEAD channels 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 by enhancing only the very highest harmonics in the 10kHz range. The BOOST channel adds warmth and harmonics to the clean sound for more textured playing. The PRESENCE control on the lead channel allows for super-smooth sounds or turned the other way, it can add bite to your leads.

DYNAMIC EL34 POWER

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 II it's dynamic highs.

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

Serial No._____ Invoice Date_____

76-32200A 0309

RECEIVING INSPECTION—read before getting started

INSPECT YOUR AMP FOR DAMAGE which may have occurred during shipping. If damage is found, please notify the shipping company and **Carvinservice.com** (**Carvinworldservice.com** outside the USA) 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 VL2100/VL2212 SPECIFICATIONS:

RMS Power (switched):	25, 50 or 100 watts
Output Impedance:	4, 8 or 16 ohm switch
Input Impedance:	220,000 ohms
Tone Controls:	BASS: 80Hz MID: 600-700Hz TREBLE: 11kHz
Channels:	3 - switchable from front panel, remote FS33L footswitch, or MIDI
MIDI functions:	Channel switching, 100 patch locations, 5 pin MIDI IN and THRU
Sensitivity:	Ch.1: 30mV for full output, Ch.2: 15mV, Ch.3: 15mV for clipping
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 6A slow-blow fuse, 5x20mm
230v Model:	230VAC, 300VA 3A slow-blow fuse, 5x20mm
Cabinet construction:	Multi-ply hardwood
Size/Weight:	VL2100 head: 24.25W x 10.5H x 9.5"D, 40lbs. VL2212 combo: 30W x 14D x 28"H, 79lbs.
Speakers (VL2212 only):	Two Celestion™ Vintage 30 (8 ohms total impedance) tuned, vented enclosure with removable back
Warranty:	One Year
Country of mfg.:	Made in USA
Options:	**FS33L** LED footswitch **CV3200** cover (head), CV3212 cover (combo) **C412T2 / C412B2** matching 4x12" Vintage 30 speaker cabinets

CARVIN

LEGACY II - VL2100 / VL2212 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 II amp, a 120 or 230 AC grounded power outlet, your instrument and a standard guitar cord; if you have the VL2100 head you will also need a speaker cabinet and speaker cable. Be sure the rear panel Impedance switch is set correctly. With the amp turned off, plug 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 FS33L footswitch, plug it into the rear foot switch jack for switching the channels.

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 your're ready to go.

FRONT PANEL

1. GUITAR INPUT

A standard 1/4" input jack feeds all 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 SWITCHES

Choose the desired channel with switch 1, 2, or 3. The LED's next to the volume controls will let you see which channel is functioning. Use channel 1 for pristine clean playing without breakup. Channel 2 will add warmth to the clean sound and will break up when played hard. Use channel 3 for overdrive/sustain. Channel changes can also be made with the remote FS33L foot switch, or by MIDI control.

CLEAN CHANNEL 1

Channel 1 gives you crisp, clean playing with high headroom and no breakup. Thanks to special mud-cutting circuits that work between the frequencies of 500 and 700 Hz, your guitar tones will be full and vibrant.

3. CLEAN CHANNEL INDICATOR

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

4. CLEAN VOLUME

This control sets the CLEAN channel 1 volume, but will also affect the BOOST channel 2 volume. The MASTER control also affects the output.

5. 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. These controls will also affect Channel 2.

6. 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 dual coil neck pickups. This will switch also affect Channel 2.

BOOST CHANNEL 2

The BOOST channel 2 adds another tube stage to the CLEAN channel, adding warmth, "sponginess" and allows break up - as Steve puts it - "more hair". All of the CLEAN channel 1 settings affect the BOOST channel and the BOOST channel settings control the second tube stage.

7. BOOST CHANNEL INDICATOR

The yellow LED will illuminate when the BOOST channel is selected.

8. BOOST VOLUME

The channel 2 VOLUME sets the output level for BOOST channel 2, however it is also based on the CLEAN VOLUME 1 settting. The BOOST DRIVE will also affect the volume. The MASTER control also affects the output.

9. BOOST DRIVE

Turning up the BOOST DRIVE increases warmth, adds harmonics and gives a "spongier" feel to your sound.

10. BOOST TONE CONTROL

The TONE control adjusts the balance of highs and lows. Turning this control up will result in a brighter tone. Turning it down will produce a darker tone.

11. BOOST PRESENCE

The CH 2 PRESENCE switch will bring back some of the brightness lost when turning up the DRIVE control and adds a smooth glassy character to your tone.

LEAD CHANNEL 3

12. LEAD CHANNEL INDICATOR

The red LED will illuminate when the LEAD channel 3 is selected.

13. LEAD VOLUME

Set the volume of the LEAD channel 3 with this control. The MASTER control also affects the output.

14. 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 can be 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 DRIVE until the crisp highs come back. See Vai's "hidden feature".

USING VAI's "HIDDEN FEATURE"

One of the "hidden" features of the Legacy series amplifiers 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 their attack when picking or strumming and the Legacy II is designed to respond to this.

15. LEAD—BASS, MID & TREBLE

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

16. LEAD PRESENCE

Channel 3 features it's own LEAD PRESENCE control for added clarity. Its frequency range is set at the mid range of the tonal spectrum. Careful adjustment with the TREBLE control will make this feature very useful.

MASTER SECTION

17. MASTER

Set the MASTER control for overall volume of the amp. Unlike other amps, the MASTER control is *before* the EFFECTS LOOP and affects the SEND, not the RETURN. This allows volume control of multiple amps from a single knob.

18. 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.

19. 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.

REAR PANEL

20. 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.

21. SPEAKER IMPEDANCE SWITCH

The IMPEDANCE SWITCH offers the selection of 4, 8 or 16 ohms to match your speaker system(s). The correct setting for use with one C412 cabinet is 16. For use with two C412 cabinets, the correct setting would be 8 ohms. The impedance of the Legacy II VL2212 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.

22. RMS POWER SWITCH

The 3-position RMS POWER switch reduces the 100watt output of the amp down to 50 or 25watts while still using all four output tubes. Lower settings will allow the great sound and *feel* of the tubes being overdriven but at lower volume levels. For maximum output power and headroom set the switch to 100watts. For early power tube saturation move this switch to 50 or 25 watts. The volume reductions will only be 3dB and 6dB respectively. So don't expect huge volume changes.

23. 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.

We recommend re-biasing when changing 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.

24. VOICED LINE OUT

The LINE OUT 1/4" jack is "CABINET VOICED" to prevent excessive bass or highs going to your mixer. This aids in the sound quality. 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.

25. FS33L FOOTSWITCH JACK *(NOT a MIDI JACK)*

Connect only the Carvin FS33L to this jack. Other devices will not work and may cause damage. The FS33L will allow you to remotley choose channel 1, 2, or 3 and includes LED indicators for each channel.

26. MIDI IN/MIDI THRU

Connect any standard MIDI controller to the MIDI IN jack with a 5-pin MIDI cable. Connect other MIDI compatible devices to the MIDI THRU if used.
(See MIDI PROGRAMMING FEATURES at the end of this page.)

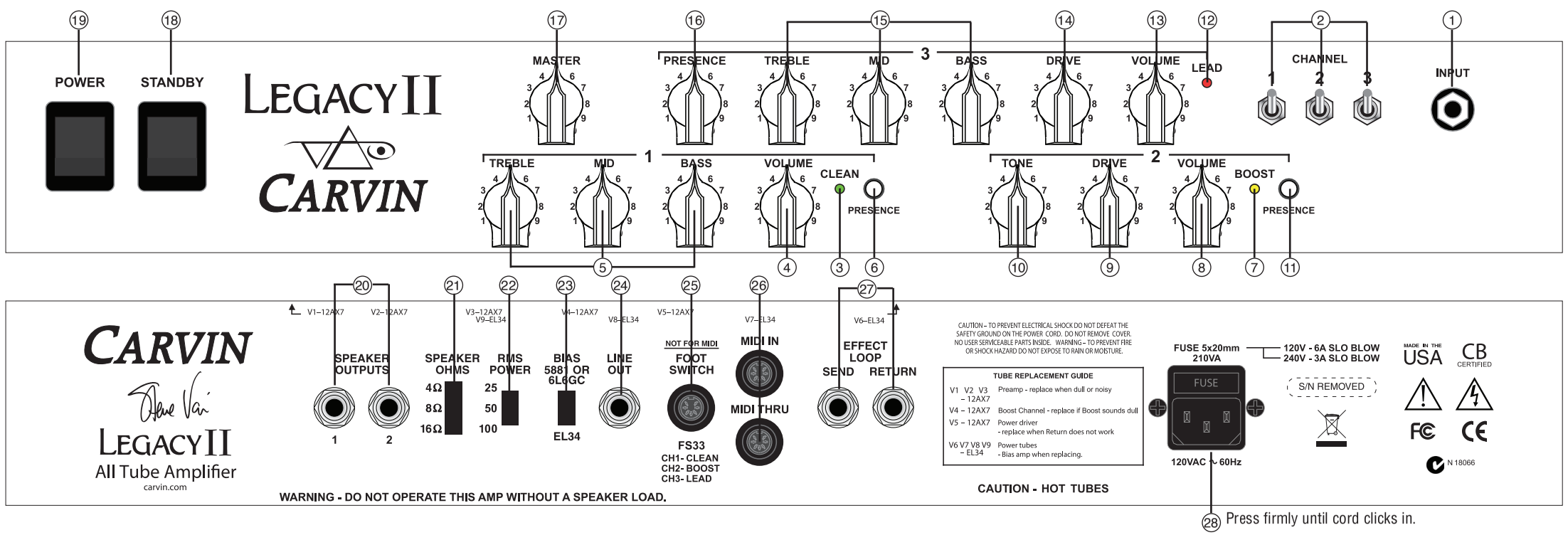
27. EFFECTS LOOP

Unlike other amps, the MASTER control is *before* the EFFECTS LOOP and affects the SEND, not the RETURN. This allows volume control of multiple amps from a single knob.

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 a few dB with some effects units. However, the amp has plenty of gain to overcome any loss.

28. AC POWER & FUSE

The detachable AC POWER CORD supplied is designed to operate with one type of voltage (the 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.



MIDI PROGRAMMING

The Legacy II will save the CHANNEL selection (1, 2, or 3) in a MIDI program patch (1 thru 100) and will recall the setting when the MIDI patch change is received.
Volume, Drive and Tone settings will not be saved.

To SAVE a MIDI program patch:

1) Hold down the channel SELECT switch for the channel setting you wish to save (1,2 or 3).
2) Now press the other two SELECT switches and release *all three* at the same time. The LED for the channel you picked will be flashing.
3) From your MIDI controller, select (send) the MIDI patch number you wish to save. The LED will flash once to confirm. Normal operation is resumed.

To change the MIDI receive channel:

1) Press and release all 3 channel SELECT switches on the front panel. One of the amp channel LED's willl be flashing.
2) Choose MIDI channel 1, 2, or 3 by pressing the 1,2 or 3 SELECT switch. The LED will flash once to confirm. Normal operation is resumed.