

Congratulations on your purchase of the **V3** all tube amplifier. Carvin has been building tube guitar amplifiers since 1949. They have been used by top professionals like Frank Zappa, Steve Vai, Craig Chaguico, Allan Holdsworth, and other great musicians. You will discover that these amplifiers represent a significant sound improvement over conventional amplifiers. Spend time with your new **V3** and get to know its many sounds.

TECHNICAL DESIGN OF THE V3

The **V3** design criteria was to build a high peformance 3-channel guitar amplifier with an all-tube signal path. The V3 has the ability to produce ultra-high gain and bass heavy sounds with the flexibility to cover all playing styles. The V3 utilizes new ideas built upon proven tube amplifier technology with an extensive set of features.

FLEXIBLE GAIN STRUCTURES

Each channel of the V3 offers three different gain modes that change the way the amp reacts to your playing. Different preamp frequencies are enhanced, giving each setting a different character. Unlike other 3-channel amps, the V3 allows you to setup both overdrive channels alike, then change settings to achieve mild or drastic differences between the two channels.

MASTER EQUALIZATION

The V3 incorporates three master equalization controls: DEEP, MID CUT, and BRIGHT. These controls affect the power amp output and allow you to finalize your sound in a way not available on most amps.

TONE CONTROLS and EQX

The passive BASS, MID, TREBLE tone controls offer a wide range of tone settings. The greater range of these controls comes from the use of high impedance 1 meg sealed controls (many guitar amps use only 250k controls). The EQX switch on each channel takes it one step further, offering a second range of tones to control by shifting the frequencies affected by the tone controls. The PRESENCE control is designed to adjust the "edge" on your sound. It's range allows for super-smooth warm sounds at lower settings or turn it up to cut through.

TWO "SMART" EFFECT LOOPS

The **V3** features two switching effect loops, one series and one parallel. We called them "Smart" loops because they recall their settings when you switch between channels 1-3. For example, you can set the loops off for channel 1, Loop 1 for only Channel 2, and both loops on for channel 3, or any combination. The TAIL switch activates the long tailed loop feature, switching off only the "send" and leaving reverbs and delays to decay naturally the way it's done in the recording studio.

GIVE YOURSELF A BOOST!

A switchable volume boost is available by footswitch or MIDI. Set the amount of boost with the BOOST control. When turned on, it will boost your amp's output by up to 9dB for solos or any time you need to stand out in the mix.

MIDI MEMORY

Set the Channel (1-3), Loops 1&2 (ON/OFF) and Boost (ON/OFF). Put the V3 in "learn" mode and it will assign your settings to the MIDI patch number you choose from your controller.

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 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.

EL34 POWER TUBES

Your amp is equipped with EL34 power tubes because of their powerful output and responsive tone. The characteristics of these power tubes respond to the wide dynamic range of guitar playing. These tubes react to the touch. If you play soft the tubes remain clean and if you increase your attack they respond accordingly.

HIGH IMPEDANCE GUITAR INPUT

Carvin has long known about the effects of miss-loading a guitar pickup, which can cause high frequency loss. The V3 guards against this loss with its ultra high input impedance. We also considered the capacitance of the average shielded guitar cable which can reduce the high frequency response of your guitar pickups. Unlike other amplifiers, we purposely avoided adding capacitance in the preamp to control high frequency oscillations. Instead, we controlled oscillations through careful component layout and lead placement allowing its shimmering highs to be reproduced.

MODEL V3 AMP SPECIFICATIONS:

50 or 100 watts Output Impedance: 4. 8 or 16ohm switch Input Impedance: 220,000 ohms

Channel Tone Controls: BASS, MID, TREBLE, PRESENCE, EQX

Ch 1 Sensitivity: 1mV for clipping Ch 2 Sensitivity: 1mV for clipping Ch 3 Sensitivity: 16mV for full output Channels: 3—switching

MIDI functions: channel, effect loops and Boost switching,

Voiced Line Out: Preamp Tubes: Power Amn Tubes: **USA Model:**

Export Model:

Cabinet Size: Cabinet: Net Weight: Warranty: Country of Mfa: Options:

100 available patch locations, 5-pin jack 1.5 VAC @ 100 watts RMS

5-12AX7's (dual stage) 4-FI 34 (nower pentode) 120VAC 300VA 6A Circuit breaker 230VAC, 300VA 3A Circuit Breaker 24.25W x 10.5H x 9.5"D 7-ply poplar wood

35 lbs One Year Made in USA -CV3200 cover

-F\$44 footswitch - CH1-3, BOOST -FS22 footswitch - effect loops -412VT or 412VB

(matching 4x12 speaker cabinets)



12340 World Trade Drive, San Diego, CA 92128 (800) 854-2235 www.carvin.com

For your records, you may wish to record the following informatio

Invoice Date 76-33100A 1005

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 V3 amp, a 120 (or 230) AC grounded power outlet, your instrument, a standard guitar cord, a speaker cord and speaker cabinet

Plug in your speaker and set the "SPEAKER OHMS" switch to match your speaker. If you have the FS44 footswitch, plug it into the rear 5-pin "FS44" footswitch jack. If you also have the FS22 footswitch, plug it into the rear 1/4 inch "FS22" footswitch jack. Turn all volume controls off. With the amp turned off, you may now plug it into the proper AC voltage.

Now, plug in your guitar and turn the POWER switch ON. Wait 60 seconds or more for the tubes to warm up, then turn on the STANDBY switch. The amp will be ready to play in a few seconds. Gradually raise the channel volume and master volume controls and re-adjust the tone controls to your liking. Please call if you feel your amp is malfunctioning. Occasionally tubes are damaged in shipping.

FRONT PANEL

1. POWER SWITCH

The POWER switch is to be utilized as the master ON/OFF switch. As the amp is turned on, the large BLUE jewel lamp LED near the input jack will illuminate as your ON indicator.

2. STANDBY SWITCH

After turning the POWER switch ON, wait 60 seconds or more for the tubes to warm up - then turn on the STANDBY switch. When turning the amp OFF, shut off the STANDBY switch first, then shut off the POWER 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.

MASTER SECTION

These controls affect all output from the amp.

3. MASTER VOLUME

Controls output of all 3 channels and effects. Once your channel levels are set up and balanced to each other you may not want to change them. Use the MASTER to change your overall volume level for the amp.

4. BOOST CONTROL AND LED

Add up to 9 dB of volume boost via the FS44 footswitch (labeled EFFECT on the FS44) or MIDI preset. The GREEN LED will light when the BOOST function is ON. (to switch the BOOST without a footswitch, see MIDI PROGRAMMING)

5. BRIGHT

Boosts high frequencies starting at 5kHz for added clarity. Simulate closed or open back cabinets.

6. MID CUT

The MID CUT removes midrange frequencies sometimes referred to as "muddy". The MID CUT is a progressive control that varies both the level and frequency of the cut. At low settings, the MID CUT starts mildly cutting frequencies in the 900Hz range. At Maximum setting "10" a deep cut is produced with the frequency centered around 450Hz.

7. DEEP

Turning up the DEEP control adds low frequencies at the sub-harmonic range. If your speakers sound unfocused or muddy, try reducing the DEEP control in small steps. This can tighten up your sound and give your amp a more solid feel. You may want to reset the MASTER volume after adjusting the DEEP control.

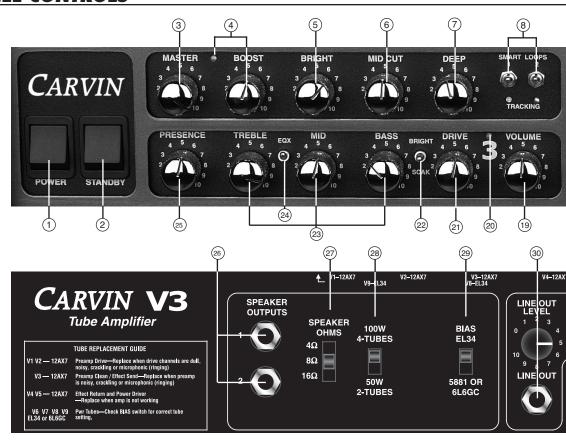
8. SMART LOOPS AND LEDS

The V3 remembers your effects loop settings for each channel. Just assign a loop(s) to the currrent channel, Smart Loop™ permanently saves it until you change it. LOOP 1 is a series loop, and LOOP 2 is a parallel loop. The LEDs will also light during MIDI programming.

CHANNEL SELECTION AND INPUT

9. CHANNEL SELECT SWITCHES Press and release switch

1, 2 or 3 to select the channel to be used. The LEDs next to the channel's volume control indicate which channel is functioning. The FS44 footswitch may also be used to select the channel. These switches are also used to set up MIDI presets (see MIDI IN/THRU).



10. GUITAR INPUT

A standard 1/4" input jack feeds all channels through the SELECT switches. 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 pickups.

11. BLUE JEWEL LIGHT

Indicates the POWER is ON.

CHANNELS 1 & 2 OVERDRIVE

The V3 features extensive tone and drive shaping for each channel. Unlike most 3-channel amplifiers, the V3 allows you to set both overdrive channels to start with the same sound, then change the controls to get mild or *drastic* differences between the two channels.

12. PRESENCE

Each channel features a PRESENCE control for added clarity. It's frequency range is from the mid to high range of the tonal spectrum. Careful adjustment with the TREBLE control will make this feature very useful.

13. TREBLE, MID, BASS CONTROLS

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 sound you want. Try adjusting the PRESENCE control also when adjusting the treble.

14. EQX

Toggle between standard EQ and Expanded EQ. This switch opens a wider frequency range for the TREBLE and BASS, providing a second set of frequencies to work with.

15. DRIVE MODE 3-POSITION SWITCH

The switch labeled INTENSE/THICK is a 3-position switch that changes the gain structure of the channel. This provides three choices of distortion styles:

- -"INTENSE" (up) the most gain and sustain, with excellent picking articulation. The low-end is deep and percussive. Mids and highs smoothly blend and still cut through. Turning up the Drive adds more sustain and saturation.
- -"CLASSIC"(center)-rich overdrive with a dynamic response. Turning up the DRIVE knob adds sustain and harmonics.
- -'THICK' (down) designed with a massive low-end, textured mids and blistering highs. Turning up the DRIVE knob adds sustain to the highs and fuller low-end harmonics.

16. DRIVE CONTROL

For mild tube saturation, set the DRIVE control below "4". For more harmonics and dynamic playing, set the control between 4 & 6. For full blown overdrive, set the control between 6 and 10 (your guitar volume should be turned all the way up).

-Because the V3 has been "Hot Rodded" with so much gain in the DRIVE control, you may encounter feedback. If feedback is a problem, reduce the DRIVE or move the guitar to the side or away from the speaker(s).

17. LED CHANNEL INDICATORS

The blue LED will illuminate when channel 1 is selected. The red LED will illuminate when channel 2 is selected.

18. CHANNEL VOLUME

Set the volume of the channel to be used. The level of signal coming out of the EFFECT SENDS will also change. To change the volume of all channels without upsetting the balance between the 3 channels, use the MASTER volume control.

CHANNEL 3 CLEAN 19. CLEAN VOLUME

Switch to Channel 3 for"clean" playing. Adjust the DRIVE and VOLUME controls together to set the level for this channel.

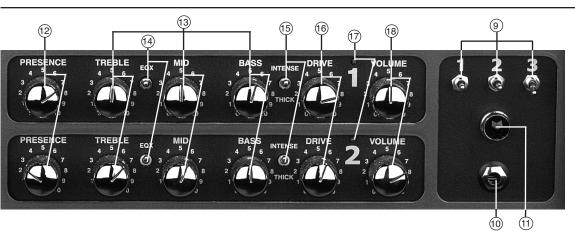
20. LED CHANNEL 3 INDICATOR

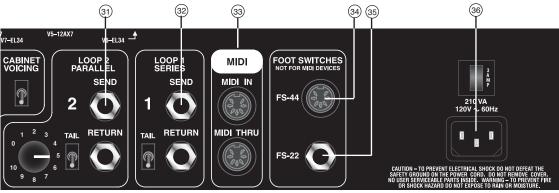
The Yellow LED will illuminate when CHANNEL 3 is selected.

21. CLEAN DRIVE

For the cleanest sounds with the most headroom, set the DRIVE control below "5". As the DRIVE is turned up, tube dynamics and harmonics are introduced to your sound. Different sounds can be achieved by setting the DRIVE MODE switch.

- **22. DRIVE MODE 3-POSITION SWITCH** The switch labeled BRIGHT/SOAK is a 3-position switch that changes the gain structure of the channel. This provides three choices of drive styles:
- -"BRIGHT" adds high end to the preamp, inviting high frequencies to chime and sustain as the DRIVE is turned up.
- -(CENTER) A classic, open clean sound with lots of headroom. Turning up the DRIVE adds harmonics and mild compression.
- -"SOAK" boosts all preamp frequencies. As the DRIVE is turned up, a vintage snarl is available when played hard.





23. CLEAN TREBLE, MID, BASS

You can start at 5 on the dial for each of the tone controls. However, these settings do not represent a normalized (flat) sound. You need to set them where they sound best! If your sound is too bright, you may want to reduce the PRESENCE control.

24. CLEAN EQX SWITCH

Toggle between standard EQ and Expanded EQ. This switch opens a wider frequency range for the TREBLE, MID and BASS. Provides a second set of tones to work with.

25. CLEAN PRESENCE

For added clarity, the CH 3 PRESENCE controls only the highest guitar harmonics in the 5-10k Hz range. Careful adjustment with the TREBLE control makes this feature even more useful.

REAR PANEL

26. SPEAKER OUTPUT 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 the speaker jacks are wired in parallel. Select the IMPEDANCE SWITCH for the correct impedance.

27. SPEAKER IMPEDANCE SWITCH

The IMPEDANCE SWITCH offers the selection of 4 ohm, 8 ohm or 16 ohm to match your speaker system. The correct setting for two 16 ohm speakers or cabinets would be 8 ohms. The correct setting for two 8 ohm speakers or cabinets would be 4 ohms. Select the proper impedance.

28. 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 operation. For early power amp clipping at lower levels, move this switch to the 2 TUBE operation. The volume reduction will only be 3 dB.

29. 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 set to the proper position or excessive heat will damage your tubes. The internal bias trim control P27can 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.

30. LINE OUT / LEVEL / CABINET VOICING

The LINE OUT 1/4" jack is for connecting to power amps or mixers. The LEVEL control adjusts the output to prevent overloading amp or mixer inputs. The CABINET VOICING switch will simulate the frequency response of a guitar cabinet, and prevent excessive bass or treble going to your mixer. This greatly aids in sound quality because you do not have to make extreme adjustments to your mixer EQ. The output level is more than adequate to drive any professional mixer or power amp.

31. EFFECTS LOOP 2 PARALLEL- SEND/RETURN/TAIL

Effects LOOP2 is configured in *parallel*. This means that the original signal is left alone and effects from your processor will be added into it. This provides the lowest possible noise from an effects processor without degrading your tone. To use the EFFECTS LOOP2, 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. Set your processor so that no direct signal is heard at the output (MIX=100%). Adjust the effect level from your processor. If the processor has no adjustment, or is noisy, adjust the effect level with the LOOP2 RETURN knob. If your processor has a "Direct signal ON/OFF" setting, it is usually better to turn it OFF, so you can set the processor's mix or effect level internally by preset. The TAIL switch keeps the RETURN active after the loop is turned off, allowing reverbs and delays to decay naturally, instead of being abruptly cut off.

32. EFFECT LOOP1 SERIES - SEND/RETURN/TAIL

Effect Loop 1 is a *series* loop. This means it sends all signals through your processor. To use LOOP1, 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. Adjust the processor MIX setting to your liking. You may need to re-adjust your processor levels so that your volume will be the same if LOOP1 is ON or OFF. If your processor has a "Direct signal ON/OFF" setting, it is usually better to turn it ON for LOOP1. The TAIL switch keeps the RETURN active after the loop is turned off, allowing reverbs and delays to decay naturally, instead of being abruptly cut off.

33. MIDI IN / THRU

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

34. FS44 FOOTSWITCH

Use only the Carvin FS44. Buttons labeled "1", "2", "3" will choose your amp channel 1, 2, or 3. The FS44 button labeled "EFFECT" will turn on/off the BOOST function. DO NOT use MIDI devices in this iack. Other footswitches will not work.

35. FS22 FOOTSWITCH

The switches on the FS22 footswitch control the EFFECT LOOPS remotely. They work the same as the SMART LOOPS switches on the front panel of the V3. Most foot pedals with 2 switches, a stereo cord and plug will work. However, Carvin's FS22 is recommended because no rewiring will be necessary.

36. AC POWER & CIRCUIT BREAKER

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. 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 circuit breaker is located above the AC power cord receptacle. If the breaker activates, unplug the amp and check the AC power connection, your speaker connection and all tubes. If no problem is found and the breaker still activates, your amp may need service.

MIDI

MIDI PROGRAMMING FEATURES:

The V3 will save the following settings in a MIDI program patch (1 thru 100):

- a.) The channel selection 1, 2, or 3.
- b.) The LOOP1 and LOOP2 on/off settings.
- c.) The BOOST on/off setting.

Volume, tone, and drive mode settings will not be saved.

TO ENTER MIDI / PROGRAM MODE:

- 1.) Hold down the channel SELECT switch for the channel setting you wish to save (1,2,or 3).
- 2.) While holding down the first switch in step 1, press the other two SELECT switches, and release *all three* at the same time. The LOOP1 LED will be flashing.
- From your MIDI controller, select (send) the MIDI patch number you wish to save. The LOOP2 LED will flash once to confirm. Normal operation is resumed.

To turn the **BOOST** on before saving the patch, (perform steps 1 and 2 above) then press and release the LOOP 1 switch. The green BOOST LED will come on. Then perform steps 1-3 to save patch.

TO CHANGE THE MIDI RECEIVE CHANNEL:

- 1.) Press and release all 3 channel SELECT switches on the front panel. The LOOP1 LED will be flashing.
- 2.) Choose MIDI channel 1, 2, or 3 by pressing the SELECT switch 1, 2, or 3. The LOOP2 LED will flash once to confirm. Normal operation is resumed.

HELP SECTION

A) FEEDBACK FROM THE LEAD CHANNEL

The V3 may feedback when the VOLUME, DRIVE, TREBLE and PRES-ENCE are turned all the way up. Like other high-gain tube amps, this is normal. To help control feedback and noise, reduce the DRIVE control, or move the guitar to the side or away from the speakers. Sometimes replacing V1 or V2 (12AX7A) can help reduce feedback.

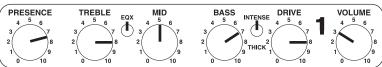
B) TUBE REPLACEMENT GUIDE

It is not uncommon for tubes to malfunction during shipping. If your amp is not working properly, please call or refer to the following replacement guide.

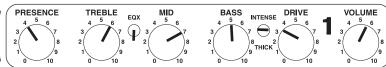
- 1) The 12AX7A preamp tubes are the smaller of the two kinds of tubes, and are located in the following order on your chassis:V1, V2, V3, V4, V5. To start with, V1 is located by the output transformer, which is behind the guitar input. Replace the tubes if your amp does not work or sounds muddy or dull. V1 is the input tube and affects all channels. V2 is the main drive tube for channels 1&2. Replacing V3 will correct problems with channel 3 and the effect sends. Replace V4 or V5 if no output is heard when putting a signal through (activated) effect returns.
- If there is no output after replacing the preamp tubes, or if the circuit breaker activates, try replacing the EL34 output tubes. The amp should be rebaised after replacing the output tubes.
- If the AC breaker should trip and turn the amp off, replace the power tubes. Most likely one of these tubes might have a short.

QUICK REFERENCE SETTINGS

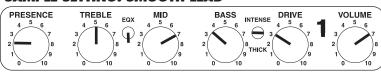
SAMPLE SETTING: CUTTING LEAD



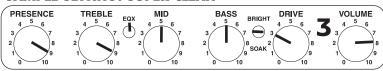
SAMPLE SETTING: CLASSIC ROCK RHYTHM



SAMPLE SETTING: SMOOTH LEAD



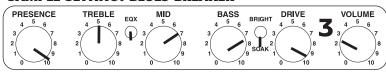
SAMPLE SETTING: SUPER CLEAN



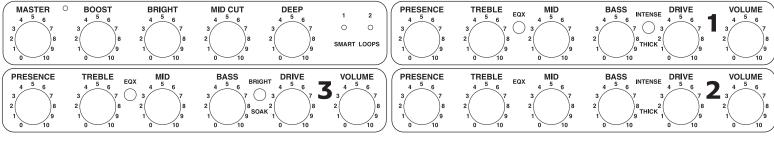
SAMPLE SETTING: MODERN HEAVY



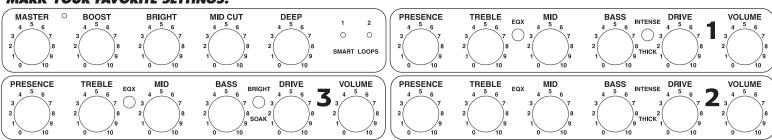
SAMPLE SETTING: BLUES BREAKER

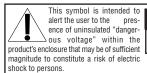


MARK YOUR FAVORITE SETTINGS:



MARK YOUR FAVORITE SETTINGS:





CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

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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 unit.

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 unit 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. Vacuum 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. Carvin assumes no responsibility for horn drivers or speakers damaged by this unit. This warranty does not cover, and no liability is assumed, for damage due to: natural disasters, accidents, abuse, loss of parts, lack of reasonable care, incorrect use, or failure to follow instructions. 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.

When RETURNING merchandise to the factory, you must call for a return authorization number. If your unit is out of warranty, you will be charged the current FLAT RATE for parts and labor to bring your unit up to factory specifications.

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.
- 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.

