Warranty and Service Information

You may use our specialized service department to repair your amp. Call us Toll-Free 800-854-2235 for your Service number so we will anticipate your shipment. Put the Service Number on the carton and be sure to include a full description of every problem when returning your unit. Pack the amp in its original carton using all its packing material and return it by UPS pre-paid. Units with physical damage, missing parts, or damage from improper service are not serviceable.

• CALL BEFORE RETURNING

If in doubt about a malfunction, please call our service department (toll-free) and we will help you determine if your unit is defective to avoid costly shipping.

• REPAIRS UNDER WARRANTY(1Year)

1. There is no charge for service under warranty. However, shipping is to be paid both ways by the customer.
2. Include a copy of the original invoice to verify your warranty along with a full description of the problem(s).
3. Allow approximately 10 days for servicing.
4. Include a check for return shipping charges (see the CARVIN catalog for current shipping rates).
5. Speaker Systems: If you require a loudspeaker repair, you should remove the defective component (speaker) to save shipping charges.
6. To avoid damage, ship only in the original carton.

• REPAIRS OUT OF WARRANTY

1. After your warranty has expired, call us for the current flat rate charge which includes parts (except tubes & reverb tank), labor and testing to bring your unit up to factory specifications.
2. The return shipping charge will be listed in the current CARVIN catalog.
3. You may include your check (after you have called for your service & shipping quote) to avoid COD charges.
4. Allow approximately 10 days for repair and testing, plus shipping time.
5. To avoid damage, ship only in the original carton (save your carton).

• SERVICING IN YOUR AREA

You may select your own service center or have your own qualified technician work on the unit at your own expense. This will not void the warranty unless damage was done because of improper servicing. Under the ONE YEAR WARRANTY, Carvin will ship parts pre-paid to you or your technician providing that the defective part(s) are first returned for our inspection. If you do not have a qualified service person, we ask that you do not involve yourself in servicing the unit.

LIMITED WARRANTY

Your Carvin Professional Series Product is guaranteed against failure for ONE YEAR. Carvin will service the unit and supply all parts at no charge to the customer providing the unit is under warranty.

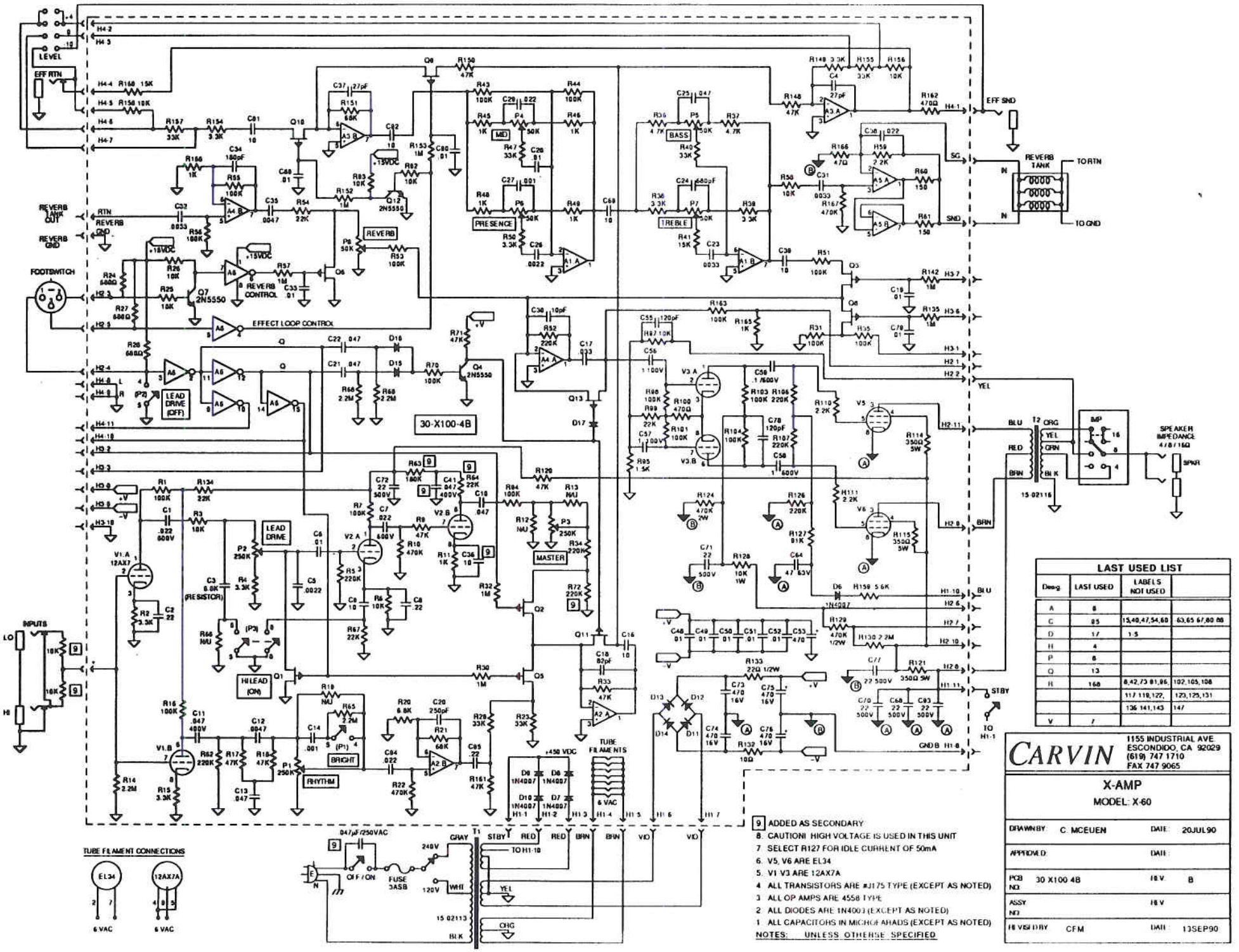
CARVIN WILL NOT PAY FOR PARTS OR SERVICING OTHER THAN OUR OWN.

This warranty is extended to the original purchaser only and is not transferable. THIS WARRANTY DOES NOT INCLUDE FAILURES CAUSED BY INCORRECT USE, INADEQUATE CARE OF THE UNIT, OR NATURAL DISASTERS. A COPY OF THE ORIGINAL INVOICE IS REQUIRED TO VERIFY YOUR WARRANTY.

Carvin takes no responsibility for any horn driver or speaker damaged by this unit. 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. No liability is assumed for damage due to accident, abuse, lack of reasonable care, loss of parts, or failure to follow Carvin's directions. CARVIN SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

In the interest of creating new products and improving existing ones, Carvin is continually researching the latest state of the art audio design methods, and modern packaging and production techniques. Thus, Carvin reserves the right to make changes in its products and specifications without notice or obligation.

Toll Free 800-854-2235
CARVIN
1155 Industrial Ave.
Escondido, CA 92029
(619) 747-1710 M-F 8 to 4:30



LAST USED LIST			
Desig	LAST USED	LABELS NOT USED	
A	8		
C	85	13,40,47,54,60	63,65 67,80 88
D	17	1-5	
H	4		
P	8		
Q	13		
R	168	8,42,73 81,96	102,105,108
		117 119,122,	123,125,131
		136 141,143	147
V	7		

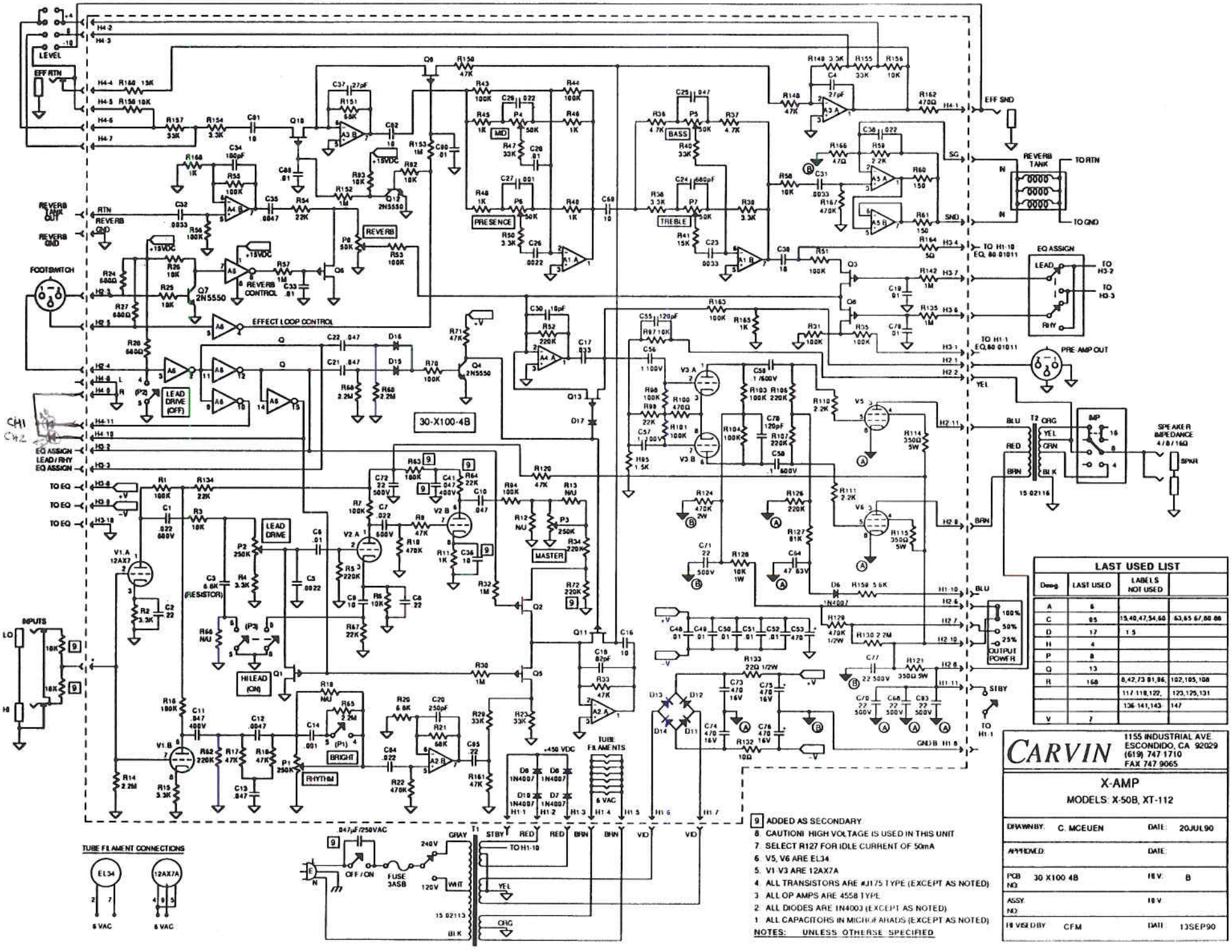
9 ADDED AS SECONDARY

8. CAUTION! HIGH VOLTAGE IS USED IN THIS UNIT
7. SELECT R127 FOR IDLE CURRENT OF 50mA
6. V5, V6 ARE EL34
5. V1 V3 ARE 12AX7A
4. ALL TRANSISTORS ARE #J175 TYPE (EXCEPT AS NOTED)
3. ALL OP AMPS ARE 4558 TYPE
2. ALL DIODES ARE 1N4003 (EXCEPT AS NOTED)
1. ALL CAPACITORS IN MICROFARADS (EXCEPT AS NOTED)

NOTES: UNLESS OTHERSE SPECIFIED

CARVIN
1155 INDUSTRIAL AVE
ESCONDIDO, CA 92029
(619) 747 1710
FAX 747 9065

X-AMP MODEL: X-60			
DRAWN BY	C. MCEUEN	DATE	20JUL90
APPROVED		DATE	
PCB NO.	30 X100 4B	REV	B
ASSY NO.		REV	
REVISED BY	CFM	DATE	13SEP90



LAST USED LIST			
Desig.	LAST USED	LABELS NOT USED	
A	6		
C	85	15,40,47,54,60	63,65 67,68 88
D	17	1-5	
H	4		
P	8		
Q	13		
R	150	8,42,73 81,86,	102,105,108
		117 118,122,	123,125,131
		136 141,143	147
V	7		

9 ADDED AS SECONDARY.

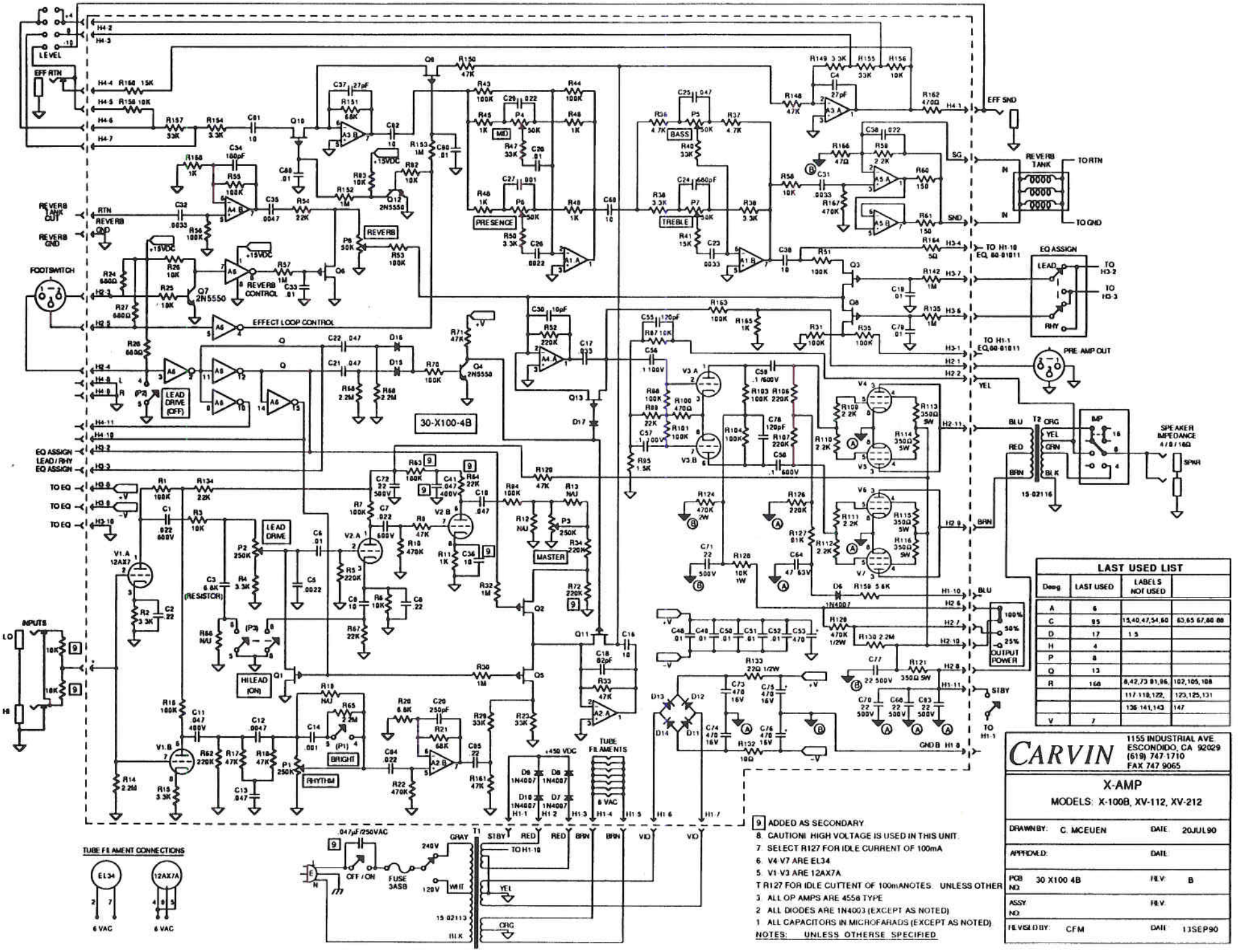
8. CAUTION! HIGH VOLTAGE IS USED IN THIS UNIT
7. SELECT R127 FOR IDLE CURRENT OF 50mA
6. V5, V6 ARE EL34
5. V1 V3 ARE 12AX7A
4. ALL TRANSISTORS ARE #J175 TYPE (EXCEPT AS NOTED)
3. ALL OP AMPS ARE 4558 TYPE
2. ALL DIODES ARE IN4003 (EXCEPT AS NOTED)
1. ALL CAPACITORS IN MICROFARADS (EXCEPT AS NOTED)

NOTES: UNLESS OTHERSE SPECIFIED

CARVIN
1155 INDUSTRIAL AVE
ESCONDIDO, CA 92029
(619) 747 1710
FAX 747 9065

X-AMP
MODELS: X-50B, XT-112

DRAWN BY:	C. MCEUEN	DATE:	20JUL90
APPROVED:		DATE:	
PCB NO:	30 X100 4B	REV:	B
ASSY. NO:		REV:	
REVISED BY:	CFM	DATE:	13SEP90



LAST USED LIST			
Deeg	LAST USED	LABELS NOT USED	
A	6		
C	85	15,40,47,54,60	63,65 67,80 88
D	17	1 5	
H	4		
P	8		
Q	13		
R	168	8,42,73 91,96,	102,105,108
		117 118,122,	123,125,131
		135 141,143	147
V	7		

9 ADDED AS SECONDARY
8 CAUTION! HIGH VOLTAGE IS USED IN THIS UNIT.
7 SELECT R127 FOR IDLE CURRENT OF 100mA
6 V4-V7 ARE EL34
5 V1-V3 ARE 12AX7A
T R127 FOR IDLE CUTTENT OF 100mANOTES. UNLESS OTHER
3 ALL OP AMPS ARE 4558 TYPE
2 ALL DIODES ARE 1N4003 (EXCEPT AS NOTED)
1 ALL CAPACITORS IN MICROFARADS (EXCEPT AS NOTED)
NOTES: UNLESS OTHERSE SPECIFIED

CARVIN
1155 INDUSTRIAL AVE.
ESCONDIDO, CA 92029
(619) 747-1710
FAX 747 9065

X-AMP
MODELS: X-100B, XV-112, XV-212

DRAWN BY:	C. MCEUEN	DATE	20JUL90
APPROVED:		DATE	
PCB NO:	30 X100 4B	REV:	B
ASSY NO:		REV:	
REVISED BY:	CFM	DATE	13SEP90

IN CASE OF TROUBLE

All X-Amps all fully tested with a 10 hr break-in period before they leave the factory. However, on those rare occasions when an X-Amp fails to operate properly, the problem is almost always with the vacuum tubes. Vibrations from shipping is usually the cause. The solution to fixing the problem could be as simple as replacing the defective tube. As the owner of a tube amp, it is to your advantage to learn the symptoms of a bad tube so that you can avoid the inconven- ience and expense of returning your amp to the factory for service. We think the trouble shooting hints provided below should prove helpful. However, if you're not sure your problem is a bad tube, then the best way to proceed is to replace all the tubes in the amp. For this reason we recommend carrying spare tubes.

12AX7A PRE AMP TUBES

The most critical 12AX7A tube for low noise and controlling acoustic tube feedback is V1. A poor V1 can also cause a rattling sound when certain notes are played. If this is the case, the tube will have to be replaced. Viewing the amp from the rear, V1 is the small tube at the far right. At CARVIN we select this tube for low microphonics. You may switch V2 or V3 into V1 for possible improvements. Some of the symptoms of a bad 12AX7A tube:

1. Premature feedback
2. Rattle sound at certain notes
3. Ringing
4. Popping
5. Week Lead Drive
6. Intermittent Channel

EL34 POWER TUBES

The symptoms listed here could indicate a bad EL34 power tube. There are a total of 4 tubes to be checked (2 tubes on the X-50B and X-60). These are the large tubes at the very back of the amp. Caution, these tubes normally run hot and may be hot to the touch. If in doubt, simply replace the tubes with new ones. Some of the symptoms of a bad EL34 tube:

1. Loud Hum
2. Popping
3. Early Distortion
4. Low Power Output
5. Glowing Red Hot

Note: The EL34's normally have a "bluish-red" glow.

CHECKING TUBES

Tubes need to be checked under load. Bad tubes will generate a lot of noise when plucked. We also recommend rotating a new tube in with the old tubes to help determine the bad tube. Caution, there is the possibility that several tubes may be bad.

FACTORY SERVICING / TUBE PROBLEMS

Typically over half the service calls on tube amps are bad tubes! Be sure to replace your tubes before your have your amp serviced. Shipping is expensive. We at CARVIN are be happy to help you through any problems you are having. Give us a call at 800-854-2235.

CHANNEL SWITCHING / FOOTSWITCH PROBLEMS

a) Verify that the channel switcing and reverb are working properly with the footswitch disconnected.

b) If the footswitch is not working, tighten the small set screw in the XLR connector on the footswitch cable. NOTE: this is a reversed—right-hand thread). The footswitch ground makes its contact through this screw.

c) If the channel switching at the amp is not working, replace the defective 4049 IC and check the R132, 22 ohms resistor.

EFFECTS LOOP PROBLEMS

a) Check the Effects Loop with nothing connected into the loop. If everything is OK, a noticeable drop in volume should occur when depressing the EFF 1 button to the on position on the footswitch.

b) With the effects loop turned on, connect a shielded phone cord to the "Return" jack. The signal should be off. Connect the other end to the "Send" jack. The signal should be there. Now, change the position of the effects loop "Level" switch . There should be no noticeable change in the volume level. Further, turn the effects loop on and off via the footswitch. Again, there should be no noticeable change in volume.

c) Set the "Level" switch (-10, 0 or +4) to the position that offers the lowest noise without distortion.

d) If the effects loop is not functioning, servicing will be required.

X-50B/X-100B Specifications

Input Impedance	2.2 Meg ohms
Maximum Input Level before clipping	Hi 1:1.5V rms, Lo 2: 3V rms
EQ Tone Controls—Bass	±15 dB shelving below 200 Hz
Mid	±9 dB peak/dip at 500 Hz
Treble	±15 dB peak/dip at 4K Hz
Presence	±15 dB shelving above 8K Hz
Graphic EQ Freq.	75, 150, 500, 1.5k & 3k Hz ±18dB
Hot Rod Gain	+20 dB with Master Volume pulled out
Effects Loop	-10, 0, or +4 dB adjustable
Line Output	+4 dBV 600Ω XLR
Power Output—X50B	50 watts rms (145 watts peak)
X100B	100 watts rms (250 watts peak)
Adjustable Power Output	25%, 50%, and full power
Output Impedance	4, 8, and 16 ohms
Output Tubes—X-50B	Two EL34's
X-100B	Four EL34's
Pre Amp Tubes	Three12AX7's
Power Requirements	120/240 VAC 50-60 Hz
Fuse	120V: 3.15 Amp. 240V: 2 Amp— slow-blow 5x20mm
Dimensions	29"W x 10"D x 11"H
Shipping Wt	X50B—46 lbs, X100B—49 lbs

XT112, XV112 & XV212 Specifications

Input Impedance	2.2 Meg ohms
Maximum Input Level before clipping	Hi 1:1.5V rms, Lo 2: 3V rms
EQ Tone Controls—Bass	±15 dB shelving below 200 Hz
Mid	±9 dB peak/dip at 500 Hz
Treble	±15 dB peak/dip at 4K Hz
Presence	±15 dB shelving above 8K Hz
Graphic EQ Freq.	75, 150, 500, 1.5k & 3k Hz ±18dB
Hot Rod Gain	+20 dB with Master Volume pulled out
Effects Loop	-10, 0, or +4 dB adjustable
Line Output	+4 dBV 600Ω XLR
Power Output—XT112	50 watts rms (145 watts peak)
XV112, XV212	100 watts rms (250 watts peak)
Speaker(s)	XT112/XV112: one Carvin BR12 XV212: two BR12's
Adjustable Power Output	25%, 50%, and full power
Output Impedance	4, 8, and 16 ohms
Output Tubes— XT112	Two EL34's
XV112	Four EL34's
Pre Amp Tubes	Three12AX7's
Power Requirements	120/240 VAC 50-60 Hz
Fuse	120V: 3.15 Amp. 240V: 2 Amp— slow-blow 5x20mm
Dimensions—XT112, XV112	22"W x 10.5"D x 21"H
Shipping Wt	XT112—59lbs, XV112—61lbs
Dimensions—XV212	26"W x 10.5"D x 21"H
Shipping Wt	XV212—71lbs

X60 Specifications

Input Impedance	2.2 Meg ohms
Maximum Input Level before clipping	Hi 1:1.5V rms, Lo 2: 3V rms
EQ Tone Controls—Bass	±15 dB shelving below 200 Hz
Mid	±9 dB peak/dip at 500 Hz
Treble	±15 dB peak/dip at 4K Hz
Presence	±15 dB shelving above 8K Hz
Hot Rod Gain	+20 dB with Master Volume pulled out
Effects Loop	0 dBV
Power Output	60 watts rms (155 watts peak)
Speaker	One Carvin BR12
Output Impedance	4, 8, and 16 ohms
Output Tubes	Output: Two EL34's Pre Amp: Three 12AX7's
Power Requirements	120/240 VAC 50-60 Hz
Fuse—120VAC	120V: 3.15 Amp. 240V: 2 Amp—slow-blow 5x20mm
Dimensions	18"W x 10.5"D x 18"H. Shiping Wt 45 lbs

X-Amp Design (technical description)

(Refer to schematic diagram)

Signal input to the X-Amp is by way of either the High or Lo input jacks. These are shorting type jacks with input resistor arrangement (R62 & R63) such that the LO input is attenuated 6 dB with respect to the HI input when either jack is used alone. If both jacks are used simultaneously then they each will have the same sensitivity. The input impedance at the HI jack is 2.2 Megohm (R14): the LO input impedance is 20k ohms (R62 plus R63).

The two triode stages of V1 serve as the input preamps for both the LEAD and RHYTHM channels. The LEAD channel preamp is operated with a cathode bypass capacity for maximum gain whereas the RHYTHM channel preamp employs no cathode bypass so that maximum headroom can be provided for clean playing. Because V1 serves as the input preamps for both channels it is the most critical of the three 12AX7A's in the unit. This tube should be selected for low noise and low microphonics.

After the RHYTHM channel preamp, the signal is processed through a fixed EQ network and then applied to the RHYTHM volume pot. When the RHYTHM channel BRIGHT switch is actuated C14 is allowed to pass high frequencies around the volume control. For this reason the BRIGHT effect decreases as the RHYTHM volume control is increased past about "3". A4(A) serves as a level recovery amp following the volume control. FET switch Q4 is used to mute the RHYTHM channel signal whenever the LEAD channel is selected. Note that logic line Q goes high when the RHYTHM channel is selected and goes low when the LEAD channel is selected. From A4(A), the signal is routed to A5(A) through FET switch Q5.

Following the LEAD channel preamp V1(A), the lead signal is processed through a fixed EQ network which has two possible response characteristics depending on the setting of the HI LEAD switch. FET switch Q1 mutes the lead signal whenever the LEAD channel is not selected in order to prevent distortion products from leaking into the (clean) RHYTHM channel. The two triode stages of V2 are used in series to provide high levels of overdrive. The MASTER volume pot (P3) sets the amount of overdrive signal to be passed on to the FET switch channel selector A5(A).

At the channel selector stage Q2 selects the LEAD channel and Q5 selects the RHYTHM channel. A channel is selected when the control line at the gate of its FET is low. Logic lines Q and Q NOT toggle in response to either the front panel PULL ON channel switch or in response to the foot switch; these lines also drive the front panel LED's via inverted buffers at A6.

The signal selected at A5(A) feeds the effects loop drive amp A4(B). If an outboard effects is patched into the loop then A4(B) drives the effects input and the effects output returns to A5(B) via Q10. If no effects is patched in then the send signal feeds the return by way of R160. FET switches Q9 and Q10 toggle in response to the EFF 1 button on the FS36 footswitch. The send and return levels are varied simultaneously by the effects level switch.

The signal returned from the effects loop is processed through two tone control stages at A1(A and B) and then fed to both the reverb drive amp IC3 (A and B) and the reverb return summing amp A2(A). When the front panel tone controls are set to "5" these stages have a flat frequency response and unit gain.

The reverb unit is driven by the two op amps of A3 operated in paralleled for increased current capability. Reverb drive equalization is provided by R58 and C31. A2(B) serves as the reverb return preamp and is operated with 40dB of gain. Further equalization is provided by C32 and R56. FET switch Q6 turns the reverb on and off. Logic signal conditioning for Q6 is provided by Q7 and one of A6's inverter buffers. The REVERB control (P8) sets the amount of reverb signal returned to the reverb summing amp. The output of the reverb summing amp A2(A) constitutes the output of the preamp section of the X-Amp and is tied directly to the input to the power amplifier.

V3's two triode stages serve as a phase inverter for the power amps push-pull class A/B output stage. Power pentodes V4 and V5 drive the output coupling transformer T2. Grid biasing for V4 and V5 (approx. -52V)dc is determined by the voltage divider from by R126 and R127. Quiescent current (measured across the open standby switch) is normally 100mA (50mA for 50 watt models) +-15mA. Power transfer to the loudspeaker is maximized by selecting the appropriate output transformer tap at the speaker impedance switch. Loop feedback around the power amplifier is provided by R67 ad C55.

Getting the Performance Out of your X-Amp

There are two primary factors which will determine the overall sound achieved with your X-Amp. 1) The output level and characteristics of your guitar pickup configuration (IE: single coil vs humbucking, standard output vs high output, ETC). 2) The gain structure and tone settings you select on the X-Amp itself.

Regardless of the type of guitar you prefer, the place to start with the X-Amp's tone setting is: all tone controls set on "5" (flat). Remember, the X-amp utilizes "Active" tone controls, so "5" is the flat response and anything below or above "5" is cutting or boosting the frequencies that the individual control affects.

The graphic EQ is assignable to either the Lead or Rhythm mode—we would recommend that you start by using this section for your "Lead" mode. When using the Graphic EQ, remember that this feature is in addition to and not separate from the basic tone controls.

Start your tone setup in the clean "Rhythm" mode using the chart below as a rough guide. If using a guitar with single coil pickups, you will probably leave the Rhythm Volume "Pull Bright" in the normal mode and slightly boosting the "Mid" control. If you are using a guitar with "High Output" humbucking pickups, try "cutting" your "Mid" control a bit and adjust the rest of the tone controls to your liking. You may want to use the "Pull Bright" for this type of setup. The "Pull Bright" is most effective between 2 and 3" on the "Rhythm" control.

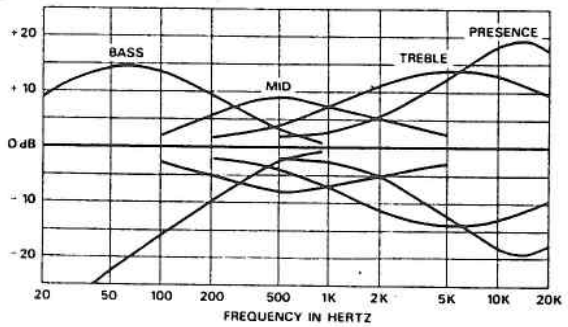
Now setting your "Lead" mode should be fairly easy. Most players tend to use the extra gain available in the "Hi Lead" setting so pull the Master "Hi Lead" control outward. Set your "Lead Drive at about "5" to start with and adjust your "Master" control to a volume level comparable to your "Rhythm" volume. Do this level matching by "ear" not by the numbers on the controls. Now, go to the "Graphic EQ" and make the final adjustment's to your "Lead" tone. Be sure the Graphic is switched to the Lead position. Again, the Graphic EQ is an active circuit so a little adjustment goes a long way.

The thing to remember when using your X-Amp is that it is highly responsive and many of the tendencies to extreme settings acquired by using "passive" type tone circuits will need to be re-learned to get the ultimate benefit from your X-Amp. The sounds are all there and the possibilities are endless—have fun.

EXAMPLES OF X-AMP CONTROL SETTINGS -

In order to get your "sound" from the X-amp you will probably need to spend a bit of time trying various combinations of amp settings and guitar settings. We have put together the following "recipes" for various sounds which we hope will get you started. In order to get the sounds described below set the controls as described and then set your RHYTHM or MASTER volume control for the volume you want. Set your guitar volume at maximum and tone for full treble. Use your "lead" pickup for the "Marshall" type distortion and your "rhythm" pickup for "Boogie" type distortion.

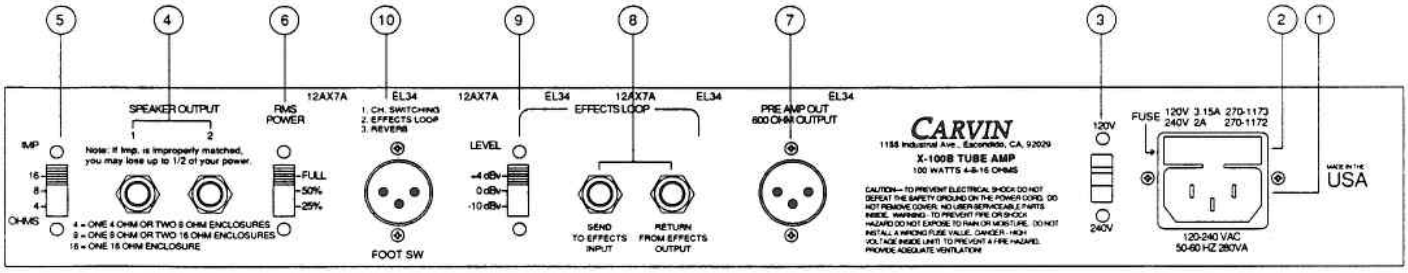
	BRIGHT	LEAD DRIVE	LEAD SW	BASS	MID	TREB	PRES
CLEAN RHYTHM	OFF	OFF		5	5	5	5
BRIGHT RHYTHM	ON	OFF		5	5	7	7
SLIGHTLY DISTORTED LEAD	OFF	ON—2	ON	6	5	5	5
"MARSHALL" DISTORTION	ON	ON—10	ON	7	4	7	7
"BOOGIE" DISTORTION	OFF	ON—10	ON	6	5	8	3



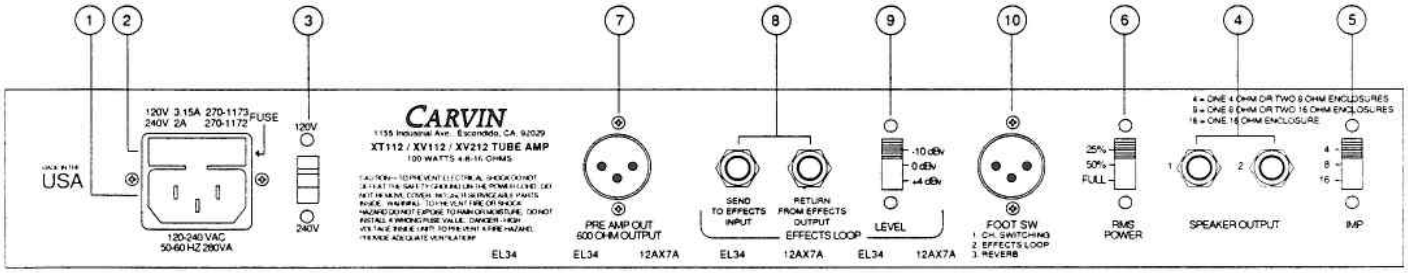
Frequency response of the X-Amp tone controls

REAR PANEL

X-50B and X-100B



XT112, XV112 and XV212



1. AC LINE CORD

The X-Amp employs a heavy duty removable grounded AC cord and should only be plugged into a grounded "3 prong" power outlet. If a grounded outlet is not available, the amp should not be used. For safety, no attempt should ever be made to defeat the ground pin of the AC line cord.

2. AC LINE FUSE

The X-Amp fuse is built into the AC receptacle socket—marked by an arrow on the rear panel pointing to the fuse receptacle. The fuse can be changed by removing the AC cord and wedging a slot-head screwdriver under the top to pull the fuse holder out. Once out, the fuse can be replaced (there is room for a spare fuse in the fuse holder). Fuses are available from Radio Shack: Part No 270-1173 for a 3.15 Amp slow-blow fuse for 120 volt use and 2 Amp for 240 volt use part No 270-1172. Use slow-blow 5 x 20mm fuses only.

3. 120/240 SWITCH

Check and change if necessary the rear AC Voltage Switch to the proper voltage. If a switch is not found, than pull out the Fuse Holder (built into the AC cord receptacle) and turn it over to the proper voltage as seen on the holder reading right side up($\frac{120V}{240V}$)—this automatically switches the voltage and the fuse to the proper voltage and fuse value. On units with an AC Voltages Switch, change the fuse as necessary (fuse values are listed on the rear panel).

4. SPEAKER CONNECTIONS

The X-Amp incorporates two 1/4" speaker jacks. Both jacks are wired in parallel. The total minimum speaker impedance is determined by the selection on the Impedance switch.

5. IMPEDANCE SWITCH

The X-Amp speaker output impedance can be selected for either 4, 8 or 16Ω. Be sure that this switch is properly selected or you can loose as much as 50% of your power because the speakers are miss-matched to the output transformer. Read the rear label on your speaker or enclosure. Divide the impedance value in half if using two speakers of the same impedance. Example: Set the switch for 8Ω for two 16Ω speakers or systems.

6. RMS POWER SWITCH

This switch is normally used in the "FULL" power position. The 50% and 25% power settings are useful for output distortion at lower levels.

7. XLR PREAMP OUTPUT

The XLR preamp output connector provides a quiet 600Ω low impedance source for mixers, recorders or power amps.

8. EFFECTS LOOP

The X-Amp's effects loop consists of send and return jacks and an effects level switch. Connect the "Send" signal to the input of your effects unit and then patch the output of the effects unit back to the effects loop "Return" jack. Set the effects "level" switch (except X60) for a level that is below the "maximum input level" your effects unit will accept. The "0dBv" setting works well with nearly all effects units. Your effects unit can then be switched in and out of the signal path by using the EFF 1 button on the X-Amp's footswitch. When no effects unit is connected, the effects loop serves as a volume attenuator depending where the "EFF LEVEL switch is selected. Note: The effects loop only works with the FS36 footswitch.

9. EFF LEVEL SWITCH

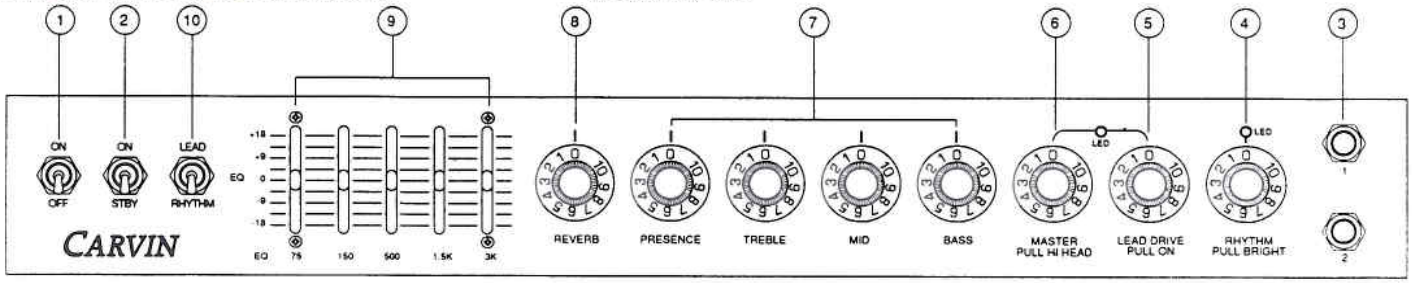
The Effects "Level" switch can be used to match your effect device. This will reduce noise and eliminate distortion cause by mis-matching levels. If your device has low output, then select -10dB. Average output devices should be selected for 0dB and hot devices should be selected for +4dB. When switched to a higher setting (+4dB), the line level to the EFF "Send" jack is reduced while the receiving gain increased on the EFF "Receive" jack.

10. XLR FOOTSWITCH CONNECTOR

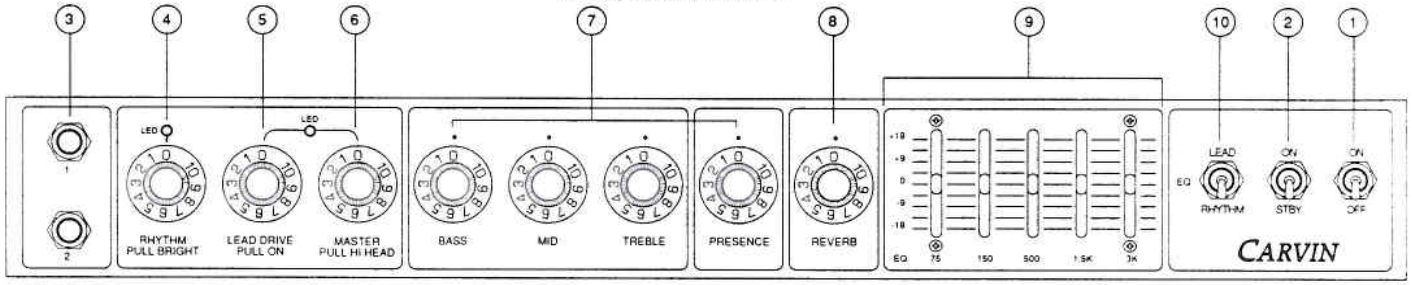
This accessory is highly recommended for performing musicians to take full advantage of the X-Amp's remote channel switching capability. Professional XLR connectors and rugged switches assure years of trouble-free service from the FS36 footswitch.

FRONT PANEL CONTROLS

X-50B and X-100B



XT112, XV112 and XV212



1. POWER SWITCH

The power on/off switch is pushed up away from the off position to turn the amp on. One of the channel indicator LED's will light to indicate that the amp is powered.

2. STANDBY SWITCH

The standby switch must be pushed up and away from the "STBY" position to turn the amp on. Placing the amp in the standby mode removes the plate voltage from the tubes leaving the filaments on so that no warm up period is necessary. We recommend that the standby switch be used whenever you wish to shut off the amp for short periods of time as this will extend the life of the tubes.

3. HI AND LO INPUT JACKS

The No 1 Hi input jack is normally used for guitar inputs to the amp. The No 2 Lo input is slightly less sensitive (6dB) than the Hi input and can be used for lower practice volumes or to accept the hotter input signals from effects boxes. For the least noise, always use a high quality shielded guitar cord.

4. RHYTHM VOLUME CONTROL

The RHYTHM volume control sets the overall volume of the clean playing channel regardless of the LEAD DRIVE or MASTER volume settings of the lead channel. This allows the player to set up the two channels independently and then switch between them for two different sounds and playing levels. Pulling this control out provides a BRIGHT treble boost affect on the rhythm channel only. This BRIGHT effect is at maximum at a RHYTHM volume setting near 3 and decreases at higher volume settings. The LED above the RHYTHM volume pot indicates when the rhythm channel is selected. Note that the RHYTHM volume will have no effect if the rhythm channel is not selected.

5. LEAD DRIVE CONTROL

This control does two things. First, it switches the amp from the Rhythm channel to the Lead Drive channel. Secondly, it adjust the amount of overdrive. The amount can be varied from "near clean" at "0" to full sustain at "10".

6. MASTER VOLUME CONTROL (LEAD CH)

This control also does two things. It controls the master level of the Lead Drive channel (no affect on the Rhythm levels). And, by pulling the control out, it engages the hot rodded 20db gain circuit into the Lead Drive control.

Many players compare the X-Amps' Hi Lead overdrive sound to the sound of cranked Marshall stacks but they always seem to notice the extra control over tonal coloration that the X-Amp offers. The sonic difference between the standard overdrive and the Hi Lead overdrive is the result of different interstage equalization in the lead channel preamp section. The lead preamp tube circuits and equalization have been carefully tailored following extensive listening tests with a wide variety of guitar amps and experimental tube and solid state circuits. Double blind listening tests have been used to confirm that musicians prefer the sound of the X-Amp circuits over other products and other experimental circuits.

7. BASS, MID, TREBLE and PRESENCE CONTROLS

The natural or "flat" setting for the X-Amp's tone controls is "5". When you are uncertain about the tone setting you desire then we recommend that you set all tone controls to"5" and experiment with variations from these settings. It is a good idea to get to know the tone controls by setting them all flat and then boosting or cutting each control so that you get to recognize the range of tones it effects. Because these EQ circuits employ active electronics there is virtually no interaction between the controls. This way, when you boost or cut the bass is has no effect on the action of the treble control, unlike the older passive tone control circuits which interact severely and have minimal action. The tone controls in Marshall and Fender amps are of the passive type which are generally used in their wide open position. It is not recommended to do this with the X-Amp. Don't forget the rhythm BRIGHT switch when experimenting with the tone controls. Caution: Extreme settings in the treble bands will cause high frequency oscillations.

8. REVERB CONTROL

The X-Amps have a self-contained reverberation system. The amount of reverberation returned to the preamp is determined by the REVERB control. State-Of-The-Art FET switching circuits are used to allow the reverb to be silently switched by "EFF 2" on the FS36 footswitch. The reverb sound has been carefully equalized to provide a bright sound similar to a studio plate reverb.

9. GRAPHIC EQUALIZER

The X-Amps' graphic EQ provides a generous degree of boost or cut at five carefully selected bands of frequencies (not featured in the X60 model). The natural or "flat" setting for each slider (band) is in its' center position. Raising a slider above the center "0" position increases the volume as much as 18db at a 12db slope to either side of the listed frequency; lowering the slider below "0" lowers the the volume of that frequency. Boosting or cutting all bands together will increase or decrease the overall volume level. In effect, the EQ then becomes a volume controller instead of a tone controller. Because active circuits are employed, small adjustments are all that is required in most cases. Caution: Extreme settings in the treble bands will cause high frequency oscillations.

10. GRAPHIC EQ SWITCH

The Graphic EQ switch allows the graphic equalizer to be assigned to either the "Rhythm" or "Lead Drive" channel. Select the channel you feel special tone equalizing is required.

Quick Set Up

If you're like most new owners, you're probably in a hurry to use your new X-Amp. Here are some brief instructions to get you started.

1) CONNECTING AC POWER

- Check and change if necessary the rear AC Voltage Switch to the proper voltage. On some models a switch will not be not found, instead pull out the Fuse Holder (built into the AC cord receptacle) and turn it over to the proper voltage as seen on the holder.This automatically switches the voltage and the fuse to the proper voltage and fuse value. On units with an AC Voltages Switch, change the fuse as necessary (fuse values are listed on the rear panel).
- Use only a grounded (3 prong) power outlet to prevent a shock hazard. This provides the quietest and safest method of operation.

2) CONNECTING SPEAKERS

- **X60 / XT112 / XV112 / XV212 COMBO AMPS** Use either of the two speaker jacks on the rear panel. Be sure the IMPEDANCE switch is set properly or reduced power will result. The impedance is listed on the rear label of the speaker. Both jacks are wired in parallel. Be sure the RMS POWER switch is selected for full power.
- **X-50B / X100B HEADS** Use either of the two speaker jacks on the rear panel. Be sure the IMPEDANCE switch is set properly or reduced power will result. The impedance is listed on the rear label of the enclosure. Both jacks are wired in parallel. If using a double 8Ω speaker stack, then select 4Ω. Be sure the RMS POWER switch is selected for full power.

3) CONNECTING THE GUITAR TO YOUR AMP

- Use a high quality shielded audio cable. Plug your instrument into the "HI" input jack for maximum gain.

4) TURNING YOUR AMP ON

- Turn all volume and reverb controls off.
- Be sure all volume control switches are pushed in.
- Plug in your amp and speakers. Turn the amp ON and STANDBY off (up)
- Proceed with the following:

5) RHYTHM VOLUME CONTROL

- This control does two things. First, it controls the volume level of your clean playing.
- Secondly, it's a BRIGHT switch when pulled out.
- NOTE: If your guitar is full on and you have hot pickups or active electronics, you may want to turn the guitar volume down slightly or use the LO INPUT jack (-6dB) to prevent input clipping (distortion) of the first stage.

6) LEAD DRIVE CONTROL

- This control does two things. First, it switches the amp from the Rhythm Channel to the Lead Drive Channel when you pull the knob out.
- Secondly, rotating the knob adjusts the amount of Lead overdrive. The amount can be varied from nearly clean at "0" to full tube overdrive at "10". This will give you the full range from tube crunch to a full blown cranked output.
- For more drive, pull out the MASTER CONTROL to switch in the hot rodded 20db gain circuit. Your sound will get fatter with more sustain—not louder.
- NOTE: The guitar's volume control acts like a remote Lead Drive control too. So, for maximum drive, the guitar should be full on.

7) MASTER VOLUME CONTROL

- This control does two things. It controls the overall volume of the LEAD DRIVE channel.
- And, by pulling the control out, it engages the hot rodded circuit as mentioned earlier.
- Because of the hot rodded nature of this amp, the MASTER volume control can not be turned up full when the TREBLE and PRESENCE controls are turned up or squealing will result from the extreme gain.

8) ACTIVE TONE CONTROLS

- Set the BASS, MID, TREBLE and PRESENCE controls at their mid point "5". This is the natural or "flat" position of the amp. Be careful, because these controls offer more boost and cut than standard controls. Never turn all the controls up full or squealing will result. If you need more MASTER volume, turn the TREBLE and PRESENCE controls down. Use only the amount you need—these controls are very powerful.

9) FS36 FOOTSWITCH

- The optional FS36 footswitch remotely controls the channel switching by depressing the "CH" button on the footswitch. Be sure that the LEAD DRIVE control is pushed in for this to work. The EFFECTS LOOP only works with the FS36. To control it, depress the "EFF 1". The REVERB is controlled by depressing "EFF 2".

10) CAUTION

- NOTE: Just like any highly modified amp, you will not be able to turn the channel volume, master volume, treble and presence controls up full (at the same time) with out squeal and feedback. This is normal because of the extended "Hot Rodded" range of these controls.
- Spend time with your new X-Amp. You may not get your sound immediately but all the possibilities are there.

For the New Owner

Congratulations on your selection of CARVIN products: "The Professional's Choice." Your new X-Amp demonstrates CARVIN's commitment to producing the highest quality & most sophisticated engineering in the guitar industry today. Its wide acceptance and use by industry professionals illustrates the basis for CARVIN's recognition as "The Professional's Choice."

Since their conception, the X-Amps have offered advantages for the guitar player in both performance and features. Whether you purchased a single 12" Combo amp or double 4-12 Stack you will find powerful solutions for your lead guitar requirements.

The Carvin X-Amps are the apex of advanced guitar amps. Every aspect of their design is specifically targeted to the needs of critical guitar players. The X-Amps' vacuum tube circuit has a rich sustaining overdrive leading outstanding performers and recording artist to endorse the X-Amp. As one of the first remotely switched two channel guitar amps, the X-Amp has helped establish channel switching as an industry standard.

Professionalism can only be measured by the results people achieve through their effort and knowledge. It is not something that automatically happens when buying a new or more sophisticated product. Rather, it's what you do with the equipment and how well you do it that ultimately makes the point. We are certain your new X-Amp will deliver the performance necessary for you to achieve solid results, and ultimately attain a high degree of professional gain and enjoyment.

To compliment your new amp and help you acquire that knowledge, we've included this manual. All of the information you need to be up and running is right here! You'll find using this manual easy and convenient. We've attempted to present the technical aspects of your new X-Amp accurately and in "plain English". But, if you have any questions that are not answered here, please call us on our toll free number. Our sales staff is well versed in the technical aspects of our products and are waiting to assist you with any questions you may have. We wish to ensure your complete satisfaction and enjoyment with your new X-Amp.

If you would like to comment on features or performance of your new X-Amp, please feel free to contact us. Comments from our customers help us improve and further develop our products and our business. We sincerely welcome any comments or ideas you may have.

Please send in the warranty card. It will allow us to better understand how you are using our equipment while keeping a ready reference for our files. Sending in the warranty card also helps us to mail out literature and information that may be of interest to you as a professional musician. Let us know where you are so we can keep in touch!

In this manual there are plenty of diagrams and descriptions to aid you in understanding your new X-Amp . So, with this manual in hand you hold the key to proper operation of your new X-Amp, and to achieve truly professional results.

May you have many years of enjoyment, success, and fun with your new CARVIN X-Amp!

Carvin's national toll free number: 800-854-2235

Receiving Inspection

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

SAVE THE CARTON & ALL PACKING MATERIALS. In the event you have to reship your amp, always use the original carton and packing material. This will provide the best possible protection for your unit 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 servicing of your unit. Always check your invoice against the items you have received.

SHIPMENT SHORTAGE. If you find items missing, it may be that they were shipped separately. Please allow several days for the rest of your order to arrive before inquiring. If you determine (after allowing an appropriate amount of time) you have not received all the items you ordered, please call CARVIN.

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CARVIN

X-AMP

Tube Guitar Amplifiers

OPERATION MANUAL

Manual 96-00100
Revision 2.0
Dec 1990

Covers the Following Models
X-100B
XT112, XV112, XV212

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