

# CARVIN

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## TUBE 100

STEREO TUBE POWER AMPLIFIER



**HELPLINE**

**1-800-854-2235**

8:30 To 4:30 Monday-Friday  
Pacific Standard Time  
USA

### OPERATION MANUAL

Manual No. 96-10101  
Revision 1.0  
Jan 1993

**Made in USA**

## CARVIN

1155 Industrial Ave. Escondido, CA 92029  
(800)854-2235

CARVIN  
1155 INDUSTRIAL AVE.  
ESCONDIDO, CA 92029  
619-747-1710

Record the serial number of your TUBE 100 in the space provided below:

Serial No. \_\_\_\_\_ Date Received \_\_\_\_\_

## QUICK SET UP

If you are like most new owners, you're probably in a hurry to plug in your TUBE 100 and use it. Here are some brief instructions to get you going quickly.

### CONNECTING AC POWER

Check to see that the setting of the AC Line Voltage Switch on the rear panel matches your local line voltage. If this is set correctly proceed to connect the modular line cord to the units AC connector, and into a grounded (3 prong) power outlet.

### INPUT CONNECTIONS

Connect the output from line level balanced or non-balanced sources into the XLR or 1/4 phone plug inputs marked "CH 1 IN" and "CH 2 IN". If you have a stereo source set the input selector switch to stereo. If you have a mono input and wish to have it "Y" into both amps (CH 1 & 2), then set the input selector switch to mono.

### CONNECTING SPEAKERS STEREO

Use the 1/4" speaker jacks marked "CH 1 OUT" and "CH 2 OUT" to connect the amp to your speaker cabinets. Set the "IMP" switches for the proper impedance of your cabinets. Set the "STEREO/BRIDGE" switch to the STEREO position.

### CONNECTING SPEAKERS BRIDGE MODE

Use the 1/4" speaker jacks marked "BRIDGE" to connect the amp to your speaker cabinets. Set both the "IMP" switches to half the impedance of your cabinets. Set the "STEREO/BRIDGE" switch to the bridge position.

### TURNING YOUR AMP ON

First apply power to the equipment that will be feeding the power amp (pre-amp, signal processors, etc.). Set the level controls on the TUBE 100 all the way down ( $\infty$ ). Turn the amp's "POWER" switch to the "ON" position and give the amp a moment to warm-up (about 15 seconds). Turn the "STANDBY" switch to the "ON" position and slowly raise the level controls to the desired setting.

## WARRANTY AND SERVICE INFORMATION

Call Toll-Free 800-854-2235 if you need help with your CARVIN product. If you need to return it for service, our service dept. will issue a Service Number so that we can expect your shipment. Write the Service Number on the carton and be sure to include a full description of every problem. Pack in its original carton using all its packing material. Return by UPS pre-paid. Units returned with physical damage, missing parts, or damage from improper service are not serviceable.

### REPAIRS UNDER WARRANTY (1 Year)

There is no charge for service under warranty. However, shipping is to be paid both ways by the customer.

### REPAIRS OUT OF WARRANTY

After your warranty has expired, call us for the current flat rate charge which includes parts labor and testing to bring your unit up to factory specifications.

### 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 DOES 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.*

# CARVIN

800-854-2235

1155 Industrial Ave.  
Escondido, CA 92029

(619) 747-1710 M-F 8 to 4:30

# TUBE 100 Specifications

<b>Power Output:</b>	100 watts
<b>Frequency Response:</b>	20 to 20KHz
<b>Output Modes:</b>	Stereo (50w + 50w) Mono bridged 100 watts
<b>EQ Control:</b>	Presence control (ea. channel)
<b>Input Sensitivity:</b>	.5VAC for full power
<b>Input Impedance:</b>	Greater than 20K $\Omega$
<b>Input Connectors:</b>	Balanced XLR, unbalanced 1/4"
<b>Output Impedance:</b>	Selectable 4 $\Omega$ , 8 $\Omega$ , 16 $\Omega$
<b>Output Connectors:</b>	4 Heavy-duty 1/4" jacks (2 Mono bridge, 1 ea. stereo)
<b>Power Tubes:</b>	(4) EL34's
<b>Preamp Tubes:</b>	(2) 12AX7's
<b>Power Requirements:</b>	120/240 VAC 50-60Hz
<b>Dimensions/Wt:</b>	19"W x 10"D x 3.5"H, 28lbs
<b>Waranty:</b>	One year parts and labor

## RECEIVING INSPECTION

INSPECT YOUR TUBE 100 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 reshipe 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.

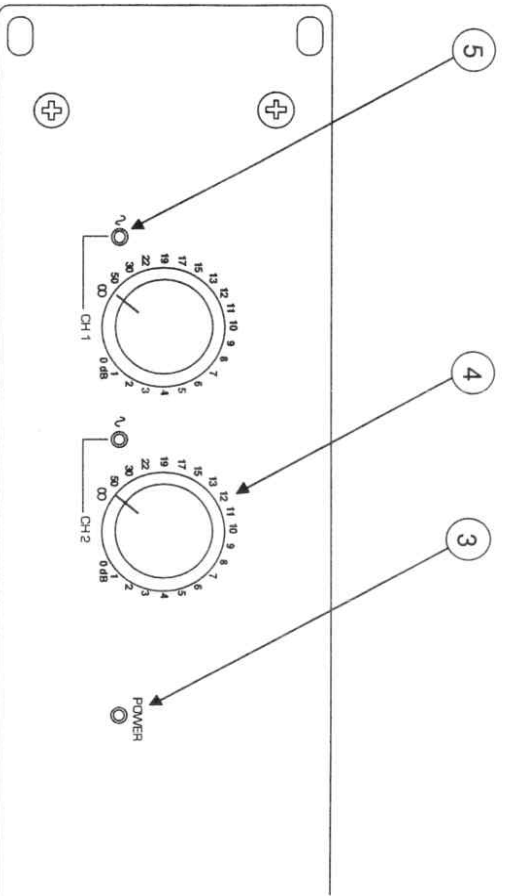
SHIPMENT SHORTAGE. If you find items missing, it may be that they were shipped separately. Please allow several days for the rest of your order to arrive before inquiring. If you determine (after allowing an appropriate amount of time) you have not received all the items you ordered, please call CARVIN.

## FOR THE NEW OWNER OVERVIEW

The Carvin TUBE 100 represents the latest technology in tube amplifier designs. Inside this compact two rack-space unit are four EL34 power tubes, capable of delivering 100 watts of warm tube sound. The dual high power 50 watt amps contain a host of features found in only the best of professional audio equipment. These features include balanced XLR and 1/4" inputs, selectable speaker outputs: 4 $\Omega$ , 8 $\Omega$  & 16 $\Omega$ , dual presence controls, bridged output capability, mono input selector, forced air cooling and 120/240VAC operation just to name a few.

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

# FRONT PANEL FEATURES



## 1. POWER SWITCH

Push this switch vertically to the "on" position to apply power to the unit. The power indicator LED will light to show that the amp is powered.

## 2. STANDBY SWITCH

The standby switch must be pushed vertically to the "ON" position in order to operate the amp. Placing the amp in the STBY (standby) mode removes the plate voltage from the tubes while 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 the amp off for short periods of time, as this will extend the life of the tubes.

## 3. POWER INDICATOR

This LED illuminates when power is applied to the unit.

## 4. LEVEL CONTROLS

Precision 41 step input level attenuators are used to adjust the output level of the unit. For normal operation set the level controls at -10dB (knob marker straight up), and adjust your pre-amps output to achieve the desired sound level.

## 5. SIGNAL INDICATORS

The green "Signal" LEDs monitor the strength of the input signal post the level controls, a lit LED indicates that a -30 dB signal is present at the output.

### Parts List For PC Sub Assembly 80-10107

PCB REF	DESCRIPTION	PART #
A1	4558 Dual Low Noise Op Amp	60-45580
A2	4558 Dual Low Noise Op Amp	60-45580
A3	4558 Dual Low Noise Op Amp	60-45580
A4	4558 Dual Low Noise Op Amp	60-45580
C1	Capacitor, Elec, 10 $\mu$ F, 50V	47-10051
C2	Capacitor, Elec, 22 $\mu$ F, 500V	45-22052
C3	Capacitor, Disk, 27 $\mu$ F, 500V	45-27052
C4	Capacitor, Elec, 10 $\mu$ F, 50V	47-10051
C5	Capacitor, Elec, 10 $\mu$ F, 50V	47-10051
C6	Capacitor, Disk, 82 $\mu$ F, 500V	45-82052
C7	Capacitor, Poly, 10 $\mu$ F, 100V	45-10212
C8	Capacitor, Elec, 100 $\mu$ F, 500V	45-10051
C9	Capacitor, Elec, 10 $\mu$ F, 50V	47-10051
C10	Capacitor, Elec, 10 $\mu$ F, 50V	47-10051
C11	Capacitor, Disk, 27 $\mu$ F, 500V	45-27052
C12	Capacitor, Elec, 10 $\mu$ F, 50V	47-10051
C13	Capacitor, Elec, 10 $\mu$ F, 50V	47-10051
C14	Capacitor, Elec, 82 $\mu$ F, 50V	45-82051
C15	Capacitor, Poly, 10 $\mu$ F, 100V	45-10212
C16	Capacitor, Elec, 47 $\mu$ F, 16V	47-47116
C17	Capacitor, Disk, 180 $\mu$ F, 500V	45-18152
C18	Capacitor, Elec, 100 $\mu$ F, 500V	45-10051
C19	Capacitor, Elec, 47 $\mu$ F, 16V	47-47116
C20	Capacitor, Disk, 180 $\mu$ F, 500V	45-18152
D1	Diode, 1N4003	61-40303
D2	Diode, 1N4003	61-40303
D3	LED, Green Small	60-75330
D4	LED, Red Small	60-75330
D5	LED, Green Small	60-75330
H1	10 Line Ribbon Cable, 14'	23-10004
H2	Header, 4 cond, Straight	23-10004
H3	Header, 4 cond, Straight	23-10004
J1	JACK, 9Pin P15TC	21-08401
J2	JACK, 9Pin P15TC	21-08401
J3	JACK, 9Pin P15TC	21-08401
J4	XLR, CONN, VERT PC, FEM	21-00301
J5	JACK, 9Pin P15TC	21-08401
J6	JACK, 9Pin P15TC	21-08402
J7	JACK, 9Pin P15TC	21-08402
J8	JACK, 9Pin P15TC	21-08402
J9	AC Fused Recept, Chf	21-02904
P1	Pot, B10K, 41CLK	71-10302
P2	Pot, B10K, 41CLK	71-10302
P3	Pot, B10K, 41CLK	71-10302
P4	Pot, Dial B, 10K, W/Pinner	71-21211
R1	Resistor, 10K, 1/4W, $\pm$ 5%	50-10045
R2	Resistor, 10K, 1/4W, $\pm$ 5%	50-10045
R3	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R4	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R5	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R6	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R7	Resistor, 100K, 1/4W, $\pm$ 5%	50-10005
R8	Resistor, 47K, 1/4W, $\pm$ 5%	50-47045
R9	Resistor, 1.5K, 1/4W, $\pm$ 5%	50-15025
R10	Resistor, 1.5K, 1/4W, $\pm$ 5%	50-15025
R11	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
R12	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
R13	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
R14	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
R15	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
R16	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
R17	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R18	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R19	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R20	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R21	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
R22	Resistor, 100K, 1/4W, $\pm$ 5%	50-10005
R23	Resistor, 47K, 1/4W, $\pm$ 5%	50-47045
R24	Resistor, 1.5K, 1/4W, $\pm$ 5%	50-15025
R25	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
S1	Switch, PC MT (GF626-0057)	25-62657
S2	Switch, PC MT (GF626-0057)	25-62657
S3	Switch, PC MT (GF626-0057)	25-62657
S4	Switch, PC MT (GF626-0057)	25-62657

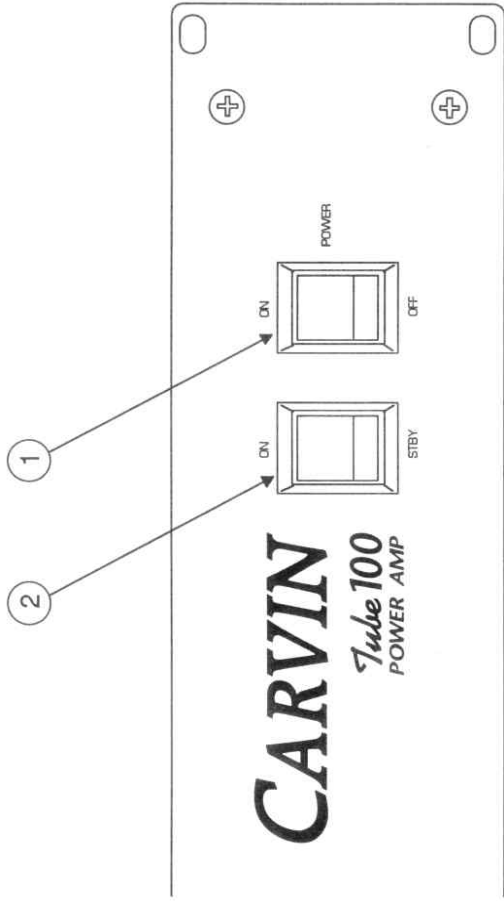
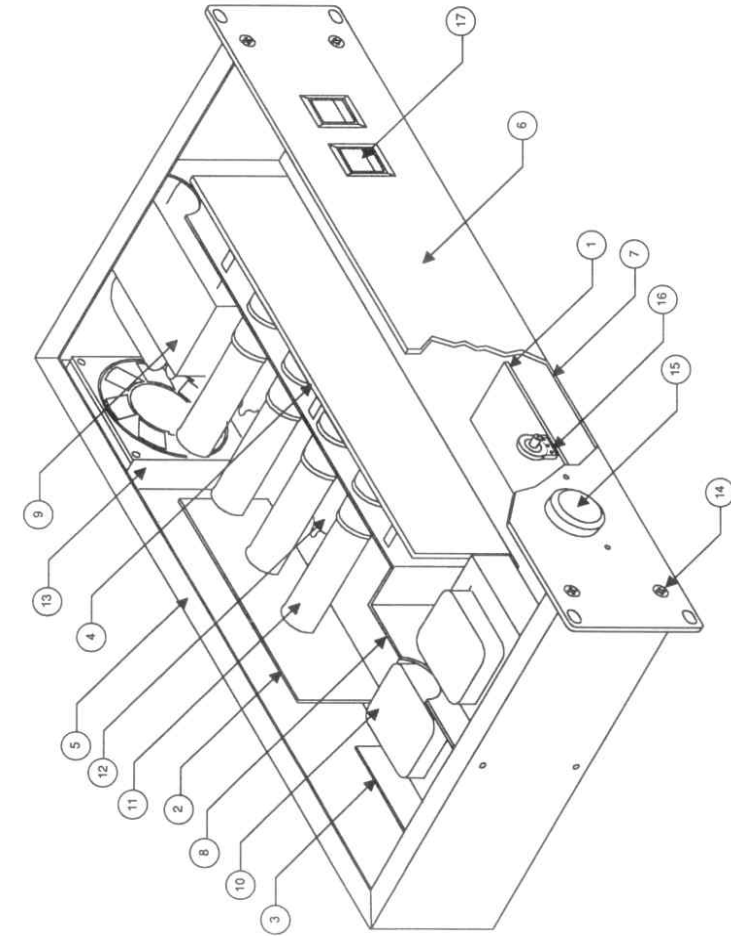
### Parts List For PC Sub Assembly 80-00308

PCB REF	DESCRIPTION	PART #
C1	Capacitor, Poly, 1 $\mu$ F, 100V	46-10412
C2	Capacitor, Poly, 1 $\mu$ F, 100V	46-10412
C3	Capacitor, Poly, 1 $\mu$ F, 63V	47-47061
C4	Capacitor, Disk, 120 $\mu$ F, 500V	45-12152
C5	Capacitor, Poly, 1 $\mu$ F, 600V	45-11042
C6	Capacitor, Disk, 120 $\mu$ F, 500V	45-12152
C7	Capacitor, Poly, 1 $\mu$ F, 600V	45-11042
C8	Capacitor, Poly, 1 $\mu$ F, 600V	45-11042
C9	Capacitor, Axial, 22 $\mu$ F, 500V	42-22052
C10	Capacitor, Axial, 22 $\mu$ F, 500V	42-22052
C11	Capacitor, Axial, 22 $\mu$ F, 500V	42-22052
C12	Capacitor, Disk, 120 $\mu$ F, 500V	45-12152
C13	Capacitor, Poly, 1 $\mu$ F, 100V	46-10412
C14	Capacitor, Poly, 1 $\mu$ F, 100V	46-10412
C15	Capacitor, Poly, 0.33 $\mu$ F, 100V	45-33312
C16	Capacitor, Radial, 47 $\mu$ F, 63V	47-47061
C17	Capacitor, Radial, 47 $\mu$ F, 63V	47-47061
C18	Capacitor, Disk, 120 $\mu$ F, 500V	45-12152
C19	Capacitor, Poly, 1 $\mu$ F, 600V	45-11042
C20	Capacitor, Poly, 1 $\mu$ F, 600V	45-11042
C21	Capacitor, Axial, 22 $\mu$ F, 500V	42-22052
C22	Capacitor, Axial, 22 $\mu$ F, 500V	42-22052
C23	Capacitor, Axial, 22 $\mu$ F, 500V	42-22052
C24	Capacitor, Axial, 22 $\mu$ F, 500V	42-22052
C25	Capacitor, Axial, 22 $\mu$ F, 500V	42-22052
C26	Capacitor, Axial, 22 $\mu$ F, 500V	42-22052
C27	Capacitor, Axial, 22 $\mu$ F, 500V	42-22052
C28	Capacitor, Axial, 22 $\mu$ F, 500V	42-22052
C29	Capacitor, Radial, 47 $\mu$ F, 63V	47-47061
C30	Capacitor, Radial, 220 $\mu$ F, 25V	45-22225
C31	Capacitor, Radial, 47 $\mu$ F, 63V	47-47061
C32	Capacitor, Radial, 47 $\mu$ F, 63V	47-47061
C33	Capacitor, Poly, 22 $\mu$ F, 100V	46-22412
D1	Diode, 1N4007	61-10000
D2	Diode, 1N4007	61-10000
D3	Diode, 1N4007	61-10000
D4	Diode, 1N4007	61-10000
D5	Diode, 1N4007	61-10000
D6	Diode, 1N4007	61-10000
D7	Diode, 1N4007	61-40030
D8	Diode, 1N4007	61-40030
D9	Diode, 1N4007	61-40030
D10	Diode, 1N4007	61-40030
D11	Diode, 1N4003	61-40030
D12	Diode, 1N4003	61-40030
D13	Diode, 1N4003	61-40030
D14	Diode, 1N4003	61-40030
D15	Diode, 1N4003	61-40030
H1	Header, 4 cond, Straight	23-10004
H2	Header, 4 cond, Straight	23-10004
H3	Header, 4 cond, Straight	23-10004
P1	Pot, 20K, Vertical	71-22012
P2	Pot, 20K, Vertical	71-22012
R1	Resistor, 100K, 1/4W, $\pm$ 5%	50-10055
R2	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R3	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R4	Resistor, 10K, 1/4W, $\pm$ 5%	50-10055
R5	Resistor, 10K, 1/4W, $\pm$ 5%	50-10055
R6	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R7	Resistor, 2.7K, 1/4W, $\pm$ 5%	50-27045
R8	Resistor, 10K, 1/4W, $\pm$ 5%	50-10055
R9	Resistor, 10K, 1/4W, $\pm$ 5%	50-10055
R10	Resistor, 1M, 1/4W, $\pm$ 5%	50-10055
R11	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R12	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R13	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R14	Resistor, 350 $\Omega$ , 5W, $\pm$ 5%	56-35025
R15	Resistor, 350 $\Omega$ , 5W, $\pm$ 5%	56-35025
R16	Resistor, 5.1K, 1/4W, $\pm$ 5%	50-50055
R17	Resistor, 5.1K, 1/4W, $\pm$ 5%	50-50055
R18	Resistor, 10K, 1W, $\pm$ 5%	53-10045
R19	Resistor, 350 $\Omega$ , 10W, $\pm$ 10%	56-35010
R20	Resistor, 10K, 1/4W, $\pm$ 5%	50-10055
R21	Resistor, 10K, 1/4W, $\pm$ 5%	50-10055
R22	Resistor, 10K, 1/4W, $\pm$ 5%	50-10055
R23	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R24	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R25	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R26	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R27	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R28	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R29	Resistor, 10K, 1/4W, $\pm$ 5%	50-10055
R30	Resistor, 10K, 1/4W, $\pm$ 5%	50-10055
R31	Resistor, 10K, 1/4W, $\pm$ 5%	50-10055
R32	Resistor, 10K, 1/4W, $\pm$ 5%	50-10055
R33	Resistor, 10K, 1/4W, $\pm$ 5%	50-10055
R34	Resistor, 1M, 1/4W, $\pm$ 5%	50-10055
R35	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R36	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R37	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R38	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R39	Resistor, 350 $\Omega$ , 5W, $\pm$ 5%	56-35025
R40	Resistor, 2.2K, 1/4W, $\pm$ 5%	50-22045
R41	Resistor, 10K, 1/4W, $\pm$ 5%	50-10055
R42	Resistor, 68 $\Omega$ , 1/4W, $\pm$ 5%	50-68015
R43	Resistor, 470 $\Omega$ , 1/4W, $\pm$ 5%	50-47025
R44	Resistor, 100 $\Omega$ , 1/4W, $\pm$ 5%	50-10025
R45	Resistor, 100 $\Omega$ , 1/4W, $\pm$ 5%	50-10025
R46	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
R47	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
R48	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
R49	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
R50	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
R51	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
R52	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
R53	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
R54	Resistor, 1K, 1/4W, $\pm$ 5%	50-10035
V1	Socket, 9Pin, TUBE	23-91632
V2	Socket, 9Pin, TUBE	23-28400
V3	Socket, 9Pin, TUBE	23-28400
V4	Socket, 9Pin, TUBE	23-28400
V5	Socket, 9Pin, TUBE	23-28400
V6	Socket, 9Pin, TUBE	23-28400
Q1	Trans, TIP30C	60-31000
Q2	Diode, Zener, 16V	61-47450
Z1	Diode, Zener, 16V	61-47450



THIS UNIT CONTAINS HIGH VOLTAGE COMPONENTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

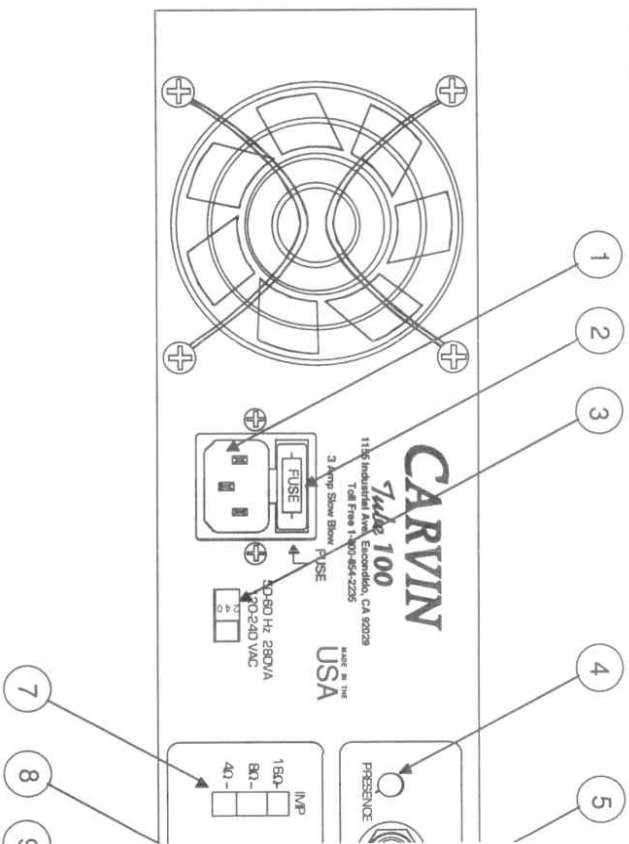
# REPLACEMENT PART GUIDE



## TUBE 100 PARTS LIST

REF	DESCRIPTION	PART #	Q
1	Preamplifier printed circuit board assembly	80-10107-1	1
2	Master connect printed circuit board assembly	80-10107-2	1
3	AC input printed circuit board assembly	80-10107-3	1
4	Tube module printed circuit board assembly	80-00308	1
5	Chassis	10-10104	1
6	Front panel	10-10101	1
7	Top & bottom covers	10-09005	2
8	Bracket	10-10107	1
9	Power transformer	15-10710	1
10	Output transformer	15-02066	2
11	EL34 tube	65-00034	4
12	12AX7 tube	65-00127	2
13	Fan	70-02408	1
14	Screw, 10-32 .375 PPH	06-10150	4
15	Knob	07-09001	2
16	Potentiometer B10K	71-10312	2
17	Switch DPDT	70-02408	2
N/U	AC cord (USA type)	05-01603	1

## REAR PANEL FEATURES



### 1. LINE CORD

The TUBE 100 is supplied with a detachable three conductor line cord. Never defeat the grounding pin of the AC line cord as this is for your own protection. If you must plug into a two prong outlet use a quality 3 to 2 prong grounded adapter.

### 2. FUSE

The TUBE 100 will accommodate both 110 and 220 VAC sources. The 3 amp slow-blow fuse supplied with the unit is designed to protect your unit against damage from either voltage source. To remove the fuse, disconnect the AC line cord and pry out the plastic fuse retainer with a small slotted screwdriver. Replace the blown fuse with a 3 amp slow blow 5 x 20mm fuse. Radio Shack part #270-1173. Note: a spare fuse can be inserted into the tunnel portion of the cap.

### 3. 110/220 V

This switch is located next to the AC line cord connector. Be sure that this switch is set to correspond to your local line voltage before you apply power to the amplifier. Should you need to change the line voltage setting, insert a small standard screwdriver through the opening in the chassis and push the selector switch to the appropriate side.

### 4. PRESENCE CONTROLS

The presence controls allow you to reduce the electronic feedback from the EL34 power tubes to the output transformers in order to achieve a high frequency boost. Rotate the presence control shaft clockwise for maximum presence (brightness) and counterclockwise to defeat the presence control. The normal off position is fully counter-clockwise.

### 5. INPUT CONNECTORS

The TUBE 100 will accept a balanced line input at the XLR connector or a non-balanced input from the 1/4" phone jack. The XLR connectors conform to standard wiring procedures: Pin 1 to ground, Pin 2 to positive balance, and Pin 3 to negative balance. The balanced input of the TUBE 100 uses a differential amplifier to accept balanced or unbalanced input signals from low impedance sources. Using the balanced XLR input can reduce cable hum, and will give 6dB more gain when used with other discrete balanced components. The 1/4" phone jack input is of the non-balanced type.

Problem	Possible Cause	Correction
Weak output	Incorrect impedance switch setting	Set the impedance switches to match the impedance of your speaker cabinets.
Ringling, Popping, or Rattling sounds at certain notes.	Incorrect line voltage setting Bad EL34 power tubes	Check and make sure that the 120/240 switch is set to match the line voltage in your area. Replace power tubes. It is possible to determine which tube is bad by substituting a new tube in with the old ones. Although more than one tube may be bad.
Amp is excessively hot to the touch	Fan vents are obstructed	Replace bad tube.
Fuse blows repeatedly	Defective EL34 power tubes Incorrect voltage setting	Clear any vent obstructions and allow the amp a few minutes to cool down. Replace power tubes.
FACTORY SERVICE	Internal short	Check 120/240 switch for proper setting. Call CARVIN for service.

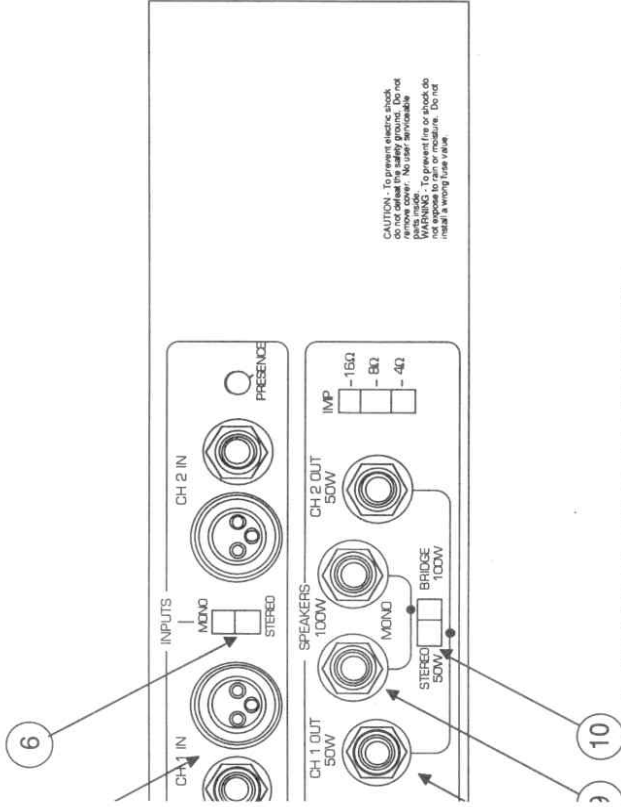
### FACTORY SERVICE

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

## IN CASE OF TROUBLE

All TUBE 100 power amps are fully tested during a 10 hour break-in period before they leave the factory. However when a TUBE 100 does fail to operate properly the problem is almost always with the vacuum tubes. Vibration 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 inconvenience and expense of returning your amp to the factory for service. We think the troubleshooting hints provided below should prove helpful. However, if you are not sure your problem is a bad tube, then the best way to proceed is to replace all of the tubes in your amp. For this reason we recommend that you carry a spare set of tubes.

Problem	Possible Cause	Correction
Power switch is on but indicator light doesn't illuminate	Loose or disconnected plug Circuit breaker tripped or fuse blown in circuit fuse box	Reconnect plug. Disconnect all other loads on the same circuit and reset circuit breaker or replace fuse.
The unit has power but no output is present at the speakers	Fuse blown on TUBE 100 Standby switch is not turned on No input signal Bad speaker cable	Disconnect the power cord and replace the fuse with a 3 amp slow blow (5 x 20mm) fuse. Radio Shack #270-1173 Turn on the standby switch located on the front panel. Check that your output device is properly feeding the input of the TUBE 100. The signal LEDs will illuminate to let you know that a signal is present. Replace speaker cable



### 6. MONO/STEREO INPUT SWITCH

This switch allows you to configure your input into either the MONO or STEREO mode. In the MONO mode the two channels of the amp will be driven from one input. The channels are driven with similar polarity i.e. "in phase".

### 7. IMPEDANCE SELECTORS

There are two impedance selectors switches (one for each channel) that must be set prior to operating the TUBE 100. These allow you to use your amp with many different speaker cabinet configurations. The outputs can be set for either 4Ω, 8Ω or 16Ω. Be sure that this switch is properly selected or you can lose power because the speakers are mismatched to the output transformers. NOTE: impedances are doubled when in bridged mode.

### 8. CHANNEL SPEAKER OUTPUT JACKS

There are two 1/4" channel speaker jacks (one for each channel) available to connect to your cabinets when using the tube 100 in the stereo mode.

### 9. MONO (BRIDGED) SPEAKER OUTPUT JACKS

There are two 1/4" mono speaker jacks (wired in parallel) which are to be used when operating your amp in the bridged mode. It is important to remember that the minimum cabinet impedance available in the bridged mode is 8Ω.

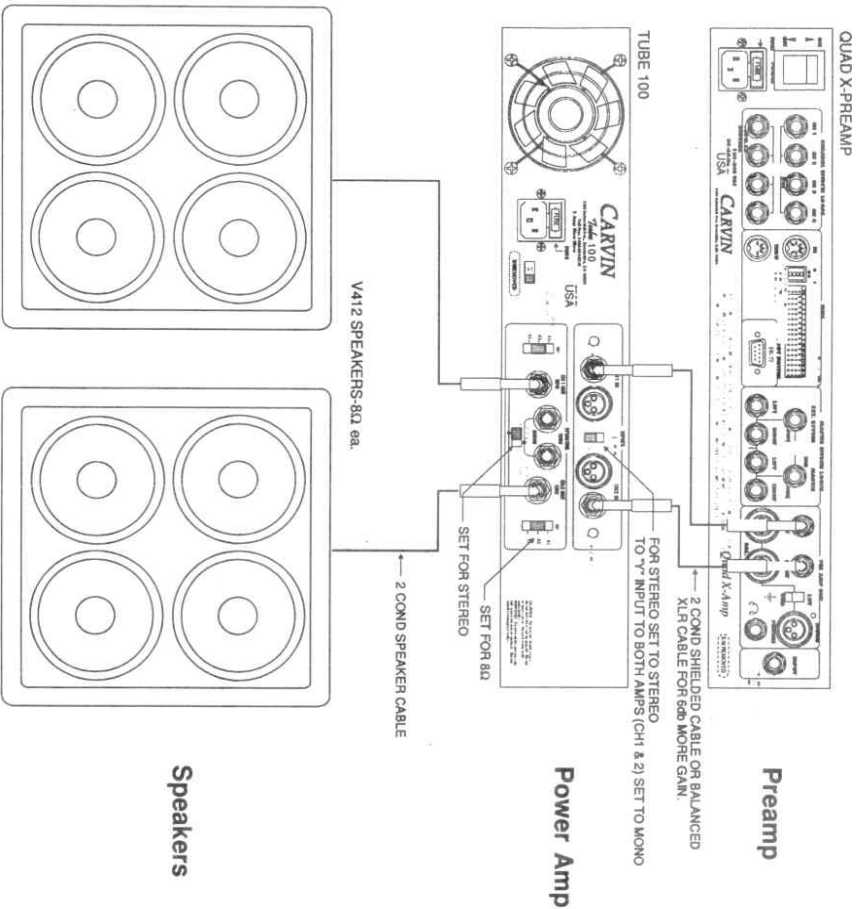
### 10. MONO BRIDGE MODE SELECTOR

The TUBE 100 can be switched to Mono Bridge mode to allow the two channels to operate as one power amplifier. When switched to bridged mode the TUBE 100 can deliver 100 watts of power to the mono output jacks.

## INTERCONNECTING THE SYSTEM

Once you have selected your preamp and speakers the interconnect is straightforward. Start with all the gear turned off. Connect the outputs of your preamp to the inputs of the TUBE 100. Although you can use either the 1/4" or the XLR connectors, for the lowest noise we recommend using the balanced XLR connections both at the preamp output and at the TUBE 100 input.

Next connect the TUBE 100's left and right outputs to the inputs of the left and right speakers. Make sure you use heavy gauge wire for all your speaker connections, no lighter than 16 gauge.



## A Typical TUBE 100 Hookup

## INPUT CONNECTIONS

Patch your preamp to either the 1/4" phone input jacks or the balanced XLR input jacks. For maximum gain and noise reduction use the balanced XLR inputs.

### MONO INPUT MODE

This feature allows the two channels of the amp to be driven from a single input. In order to use this feature plug your cabinets into the "CH 1 OUT" and "CH 2 OUT" speaker jacks and set the "IMP" switches as you would in the stereo mode. Then plug your line level input into the "CH 1 IN" XLR or 1/4" phone jack. Set the MONO/STEREO input selector switch to the mono position and adjust the "CH 1" and "CH 2" output levels to the desired setting.

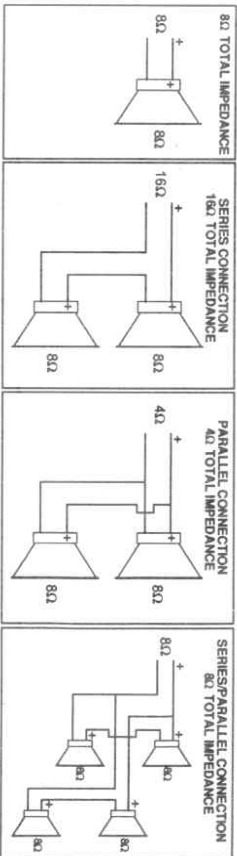
## SPEAKER OUTPUT CONNECTIONS

There are two 1/4" phone plug speaker jacks available for channel speaker connections (one for each channel). Additionally, there are a pair of 1/4" phone plug speaker jacks that are to be used while in bridge mode. For best results use high quality speaker cables of 16 gauge or greater in size.

The TUBE 100 has been designed to handle most any speaker cabinet combination that you should ever need. Output impedances are selectable through the three position "IMP" switches located on the rear of the unit. Be sure the "IMP" switches are properly set or reduced power will result. Speaker impedances are typically listed on the rear jack plate of their cabinet.

### TYPICAL LOUDSPEAKER IMPEDANCE CONFIGURATIONS

Individual speakers or speaker cabinet wiring examples.



### BRIDGING THE AMP (SPEAKER CONNECTIONS)

The TUBE 100 can be operated in the bridged mode if you need a high power mono (single channel) amplifier. Note that the load impedances are doubled when in bridged mode, and loads of 8Ω or higher must be used (connect you system (speakers) in series if necessary).

There are two 1/4" BRIDGE phone plug speaker jacks located in the center of the rear connect group available to be used while in the bridged mode. Both jacks are wired in parallel. Connect your cabinets to one or both of these jacks and set the "STEREO/BRIDGE" selector switch to the "BRIDGE" position.

In order to operate the amp at a given impedance set the "IMP" selector switches to half of the desired impedance ("IMP" SW1 + "IMP" SW2 = total impedance). For example, to operate a cabinet with a single 8Ω load, both impedance selector switches must be set to the 4Ω position.

Note: When connecting the TUBE 100 to more than one cabinet it is often more practical to use the Mono input mode instead of the Bridge mode. (See Mono input mode)