CANARY AUDIO®

300B PUSH-PULL POWER AMPLIFIER

HANDCRAFTED IN CALIFORNIA

M90

OWNER'S MANUAL

MADE IN USA

Dear Customer:

Please allow us to take this opportunity to thank you for purchasing this CANARY AUDIO product.
We strongly recommend that you carefully study the Safety Instructions before attempting to operate the unit.
After you have finished reading the instructions, please save this manual for future reference.

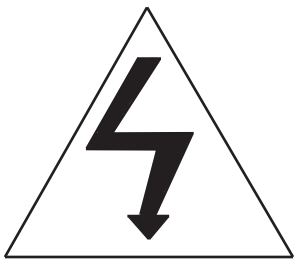
WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THE UNIT TO RAIN OR MOISTURE.

CAUTION:

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTERSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.



The lightning flash with arrowhead symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



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

SAFETY INSTRUCTIONS

Power Source:

- The unit should be connected to an AC power source of the proper rated voltage.
- Never replace the power supply's line fuse with the one of incorrect characteristics.

AC Cord Protection:

- Do not defeat the grounding or polarization feature of the AC cord.
- Make sure that the AC receptacle holds the AC cord plug firmly and securely.
- Keep the AC cord away from heating appliances.
- Never put heavy object on the AC cord.
- If smoke, malodors or noises are emitted from the unit, turn the power off and disconnect the AC cord.

Keep Away from Water and Moisture:

- This unit should not be used near water.
- Keep the unit away from flower vases, bathtubs, washbowls, kitchen sinks, laundry tubs, swimming pools, etc. If liquids are spilled into the unit, serious damage could occur.

Ventilation:

- Slots and openings in the chassis and in the back or bottom are provided for necessary ventilation.
- Do not place a cloth on top of the unit or block the provided ventilation slots and openings in any other way.
- Do not place the unit on a bed, sofa, rug or other similar surface which may block the slots and openings.
- Do not place the unit in a confined space, such as a bookcase or built-in cabinet, unless proper ventilation is provided.

Non-Use Periods:

- When left unused for a long period of time, the unit should be unplugged from the AC outlet.

PROPER CARE

Break-in Period:

- As with most audio components, the M90 requires a “break-in” period. During this period the internal components will stabilize and reach their normal operating parameters. There are no special procedures required for this break-in period, just listening to your favorite music will accomplish this task all by itself.

- The time required to break in the M90 is approximately 30 to 50 hours. Upon completion of the break-in period you will hear an improvement in the overall sound quality of the amplifier.

No Fingers or Other Foreign Objects:

- Touching internal parts of this unit is dangerous and may cause serious damage to the unit. Do not attempt to disassemble the unit.

- Do not put any foreign object into the unit through the ventilation slots and openings.

Cleaning:

- A regular dusting with a soft, non-abrasive cloth will generally keep the finish of the faceplate and chassis looking like new.

Packing Materials:

- The original packing materials and shipping boxes are custom designed to prevent shipping damage from occurring.

- We recommend that you retain all of the packing materials and shipping boxes for your M90 to be covered by warranty.

Registration Card:

- To ensure that your M90 is registered, please spend a moment now to complete and return the Registration Card.

- Save a copy of the Registration Card and the bill of sale as proof of purchase for future reference.

UNPACKING

- Open the shipping boxes and remove the top layer of foam.
- Remove the owner's manual and other accessories from the packing box.
- Grasp the underside of the amplifier and lift it straight out of the packing box.
- Place the amplifier in a safe location. Remove the protective plastic wrapping.
- After unpacking the M90, inspect it for any shipping damage and contact us immediately if any is found. Do not plug the power supply into any outlet if you find any shipping damage.
- Please keep all packing materials for future transport of your player. Shipping the M90 in anything other than its original boxes may result in damage that is not covered by warranty.

ACCESSORIES

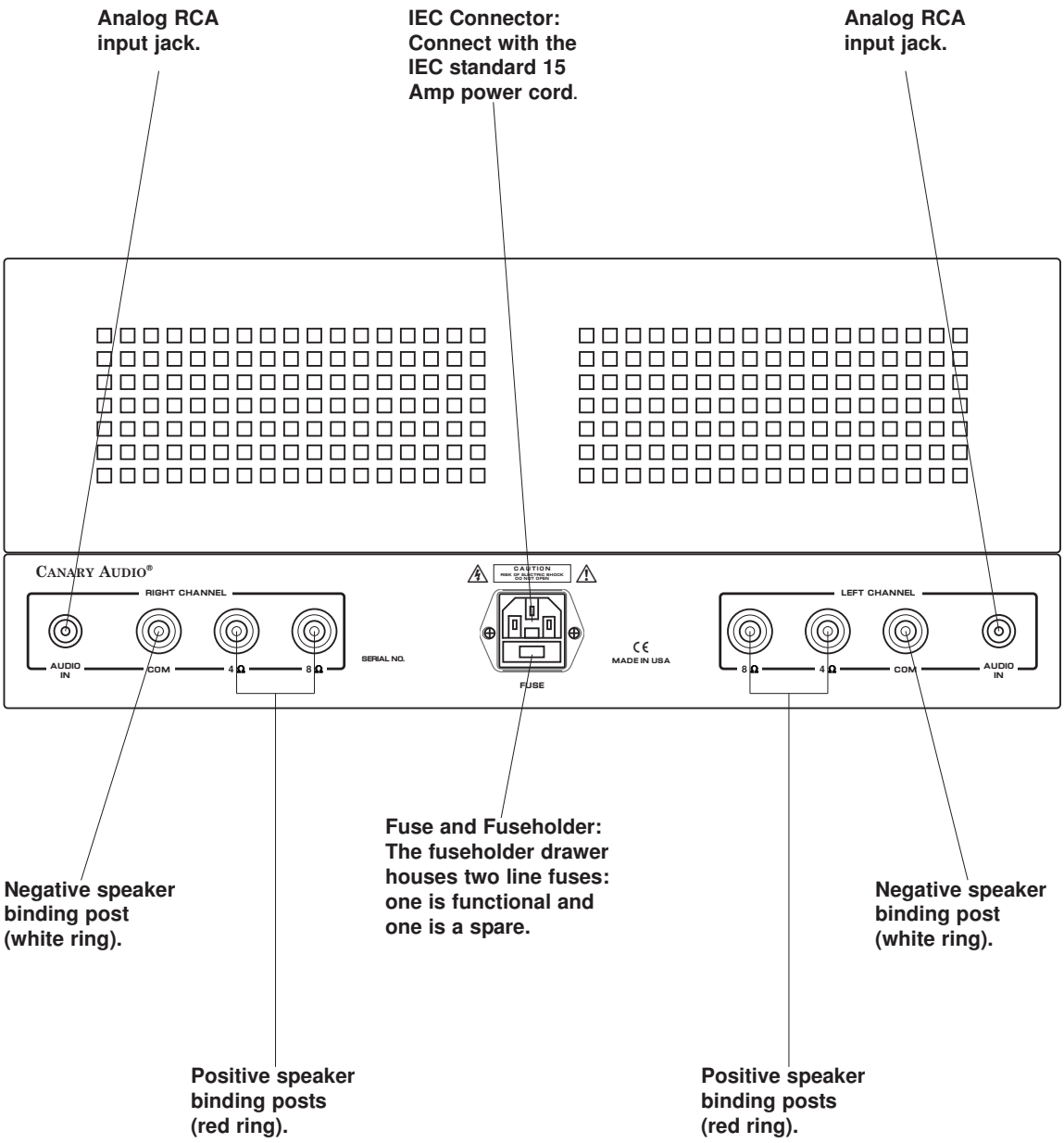
The following items are included in the package aside from the main unit:

- Owner's manual
- Warranty card
- AC power cord
- Vacuum tubes

PLACEMENT

- Do not place the unit near a heating device or in a location where it is exposed to direct sunlight.
- Do not place the unit in an excessively humid or dusty location.
- Avoid placing the unit in the areas of vibration, impact or where the surface is tilted as the internal parts may be seriously damaged.
- Avoid placing the unit next to kitchen counters or other locations where it is subjected to oily fumes.
- Place the unit in a horizontal position, and do not place anything heavy on it.
- Do not place the unit on any other equipment which may become hot.

REAR PANEL CONNECTIONS



CONNECTION STEPS

1. Place the M90 in a rack, on a shelf or on the floor.

2. Turn off any associated components prior to connecting the M90. This minimizes the chance of momentary electrical surges disturbing your system.

3. Neatly arrange and organize wiring to and from the Evolution amplifier and all components. Separate AC wires from audio cables to prevent hum or other unwanted noise from being introduced into the system.

4. Install the vacuum tubes according to the instructions provided on the following page of this owner's manual.

5. Connect the outputs of your preamplifier or any audio source equipment to the inputs on the back of the M90. Be sure to match up the left and right conductors appropriately.

6. Connect the loudspeaker cables to the loudspeaker binding posts on the back of the M90. Use only the binding post (4 or 8 ohms) that matches the impedance of the loudspeaker.

   Be sure to connect the polarity of the speaker cables correctly. Match the positive (red) and negative (white) binding posts to the corresponding speaker connections.

   The custom made binding posts are capable of accepting speaker cable with spade lug, banana plug, pin connector or bare wire.

7. With the power switch in the OFF position, attach the power cord to the M90 and connect it to your AC outlet.

   Use the supplied AC power cord or an aftermarket cable. For optimum results, we recommend the use of Canary Diamond power cable.

8. First, turn on your source equipment. Then, turn on the M90.

9. Bias the M90 according to the instructions provided in the "Tube Biasing" section.

TUBES INSTALLATION

Be sure the amplifier is OFF before installing any tubes.

Avoid touching the tubes with bare hands to prevent skin oils from depositing on the glass surface of the tubes.

Insert each tube in the corresponding socket. Refer to Diagram 1.1 for further clarification.

The 6SN7 tubes are inserted into the sockets as labeled on the tube panel. Align the center key of the tube base with the slot in the center of the socket. Carefully push down the tube into the socket with a gentle rocking motion until it is firmly seated.

The 12AX7 tube is inserted into the socket as labeled on the tube panel. Be sure to align the pins with the socket holes when installing these tubes. Carefully push down the tube into the socket with a gentle rocking motion until it is firmly seated.

The 300B tubes are inserted into the sockets as labeled on the tube panel. Pay extra attention to the tube pins and socket holes for these tubes. Identify the two larger pins and align the pins with the two larger holes on the socket. Carefully push down the tube into the socket with a gentle rocking motion until it is firmly seated.

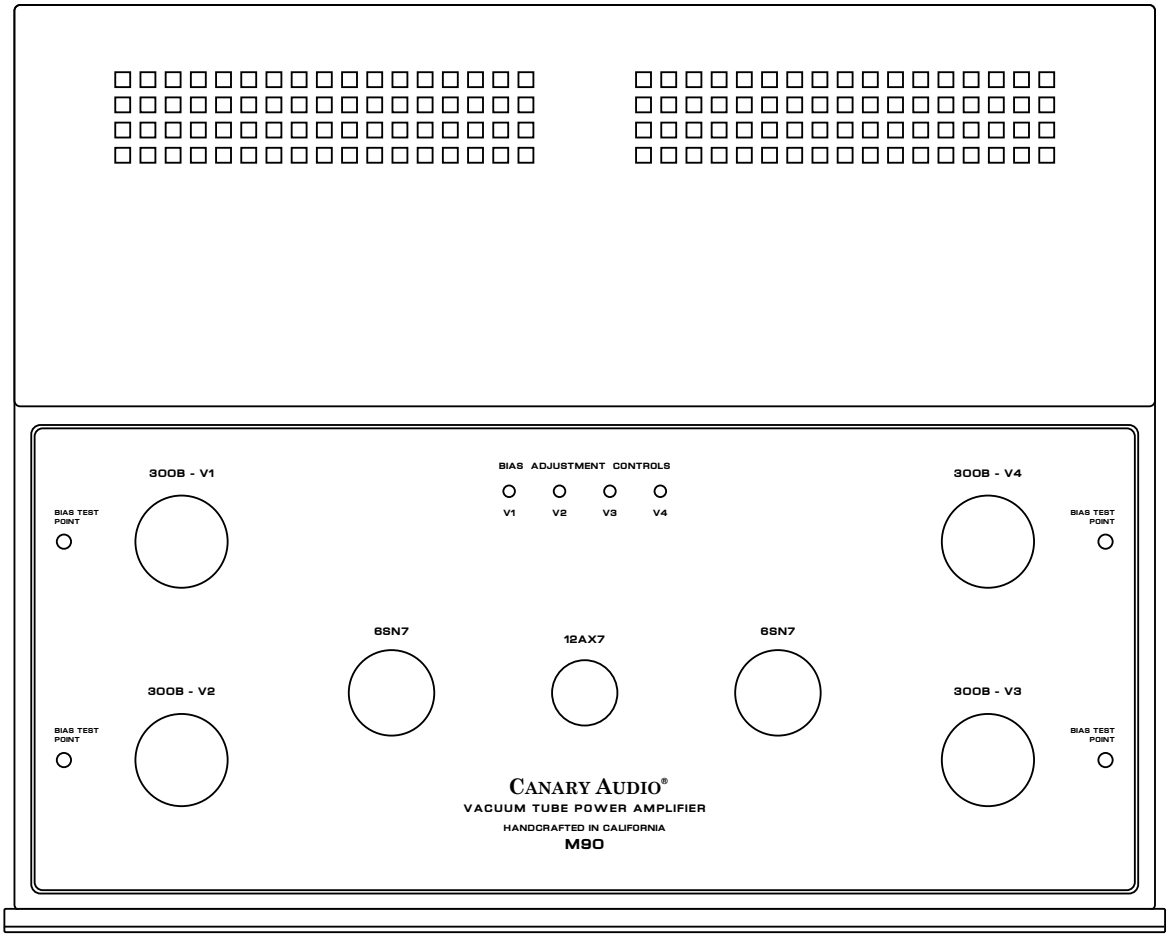


Diagram 1.1 Overview of M90

TUBE BIASING

Bias voltage applied to the grids of the power tubes in the output stage should be checked from time to time to keep these tubes operation at the optimum operating point. A properly biased power tube will have a longer life.

To check and adjust the bias voltage of the 300B tubes, simply follow the following procedures.

Tools Required:

Digital Multimeter
Long-handled slotted screwdriver

Procedures:

1. Making sure that the power switch is in the OFF position.

2. Install all the tubes to the corresponding sockets using a gentle rocking motion. (See “Installing the Vacuum Tubes” section for detail information on installing the tubes.)

3. Connect your speaker leads, input cable and power cord to each amplifier.

4. Turn ON the amplifier.

5. Turn on the multimeter. Select the section for measuring up to 20V DC. Attach and secure the negative test lead to the chassis or to the binding post.

6. Insert the positive test lead into the BIAS TEST POINT – V1 as labeled on the tube panel.

7. Carefully insert a long-handled slotted screwdriver into the V1 Bias Adjustment Control as labeled on the tube panel. Slowly rotate the screwdriver to adjust the bias voltage until it reaches 0.50V. (Turning counter clockwise will increase the voltage and turning clockwise will decrease the voltage).

8. Repeat steps 6 and 7 to adjust the bias voltage for the three remaining 300B tubs in the same fashion as biasing 300B - V1. Using BIAS TEST POINTS labeled as “V2, V3 and V4” for measuring, and BIAS ADJUSTMENT CONTROLS labeled as “V2, V3 and V4” for adjusting. You will need to go back and forth a few times until all four 300B tubes are properly biased.

9. Once you have finished biasing all four 300B tubes, wait a few minutes and recheck the settings again.

10. The M90 power amplifier is now ready to use.

SPECIFICATIONS

Model:	M90
Rated Power Output:	24 Watts RMS
Input Sensitivity:	0.33 Volts for full output
Input Impedance:	100,000 Ohms
Frequency Response:	+/- 2 dB from 10 Hz to 60,000 Hz
Total Harmonic Distortion:	< 0.5%
Signal-to-Noise ratio:	-84 dB below 1 Watt
Damping Factor:	10
Power Consumption:	220 Watts (true RMS)
Output Impedance:	4, 8 Ohm
Tube Complement:	4 x 300B 2 x 6SN7 1 x 12AX7
Dimensions:	17.5” W x 15” D x 8.5” H
Weight:	46 lbs.

Note:
Specifications are subject to change without notice. Weight and dimensions are approximate.

LIMITED WARRANTY

Canary Audio warrants to the original purchaser that each M90 power amplifier is free of manufacturing defects for a period of three (3) years from the date of purchase. To receive this warranty, the original purchaser must complete the enclosed Warranty Registration Card and mail it to Canary Audio within thirty (30) days from the date of purchase. Canary Audio will then validate the warranty to the original purchaser.

This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse or negligence. This warranty does not cover damage due to improper operation or maintenance, use with incompatible accessory, connection to improper voltage supply, or attempted repair, modify or upgrade by anyone other than Canary Audio or a facility authorized by Canary Audio. This warranty does not cove any damages to the vacuum tubes and does not cover normal maintenance.

Canary Audio shall not be responsible in any way for consequential or indirect damages or liabilities resulting from the use and operation of the product covered herein or resulting from any breach of this warranty or any implied warranty relating to said product. Under no circumstances does Canary Audio assume liability or responsibility for injury or damages sustained in the use or operation of this equipment or for damages to any other equipment connected to it.

During this stated period, Canary Audio will repair or replace any defective components free of charge. A Return Authorization Number (RA Number) is required before any product is returned to our factory for any reason. This number must be visible on the exterior of the shipping container(s).

Units to be repaired by Canary Audio must be sent shipping and insurance prepaid by the original purchaser in the original packing material. Canary Audio will accept no responsibility for any damage occurring to the unit that is shipped in packing material other than the original packing material. A written description of the defect and a copy of the original bill of sale should be accompanied with the returned product.

This warranty applies only to the first end-user purchaser of a M90 power amplifier that is purchased and used in the United States of America and is not valid for subsequent purchasers. All other warranties or conditions either written or implied are void.