EVOLUTION

MONOBLOCK AMPLIFIER
OPERATING INSTRUCTIONS

doshi

Beautiful As Music

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IMPORTANT

This amplifier operates at high voltages. Do not attempt to operate it if it has been exposed to liquids or if the appropriate tubes are not in place. **Allow at least 30 minutes after turn off before removing the tubes to allow the high voltage to drain tube temperatures to become safe to handle.**

UNPACKING

The Doshi Audio Monoblock Amplifiers are quite heavy. The units are supplied in custom packaging, including packaging for the vacuum tubes. Please carefully unpack all items from the carton and inspect them to make sure that there is no visible damage from shipping. Avoid touching the glass with bare hands – use the included white cotton gloves when handling the tubes.

INSTALLING THE TUBES

Output Tubes:

Install the supplied vacuum tubes carefully. The KT 150 output tubes are labeled V1, V2, V3, and V4 for installation into the corresponding sockets on each monoblock (Figure 2).

Input and driver tubes:

Each monoblock amplifier uses 3 small signal tubes. These are located in the center of the amplifier between the output tubes. The center tube is a 12SJ7 and the two driver tubes to either side are 12SN7.

The sockets are "keyed", so there is only one correct orientation. Please be extremely careful to align the tube pins and sockets correctly so neither the tube pins nor the tube sockets are damaged.

Do not force the tube into the socket. Gently align the pins into the socket and a firm push straight down will seat the tube. If it is necessary to remove a tube, pull straight up with a steady motion. A very slight gentle rocking motion may be necessary when removing tubes.

CONNECTING THE CABLES

Connect the interconnect cable from the preamplifier, the speaker cable, and the power cord to each amplifier. The monoblock amplifiers are identical; one handles the right channel and one handles the left channel. To take full advantage of the fact that the amplifiers are in individual housings, place them apart from each other and away from the speakers.

Inspect all connections and the tube installation and adjust as needed. Connect the power cords to the wall outlet (mains). Place the rear panel power supply switch, located

next to the power inlet, in the on position. This switch does not, itself, turn the amplifier on. It activates the amplifier controller, allowing the amplifier to be switched on via the remote control or the front panel Power Button.

The amplifier is available with Single Ended (Direct) and Balanced XLR (Buffered) inputs. A ground lift switch is provided at the input to prevent ground loops in direct mode.

REMOTE CONTROL OPTION

Suitable cables, which can be obtained through your Doshi Audio dealer, connect the REM output on your Doshi Preamplifier to the REM input on your Doshi amplifier. The REM output of that amplifier can be connected to a second amplifier with a second cable. Another cable can be connected from the output of the second amplifier to enable remote control of other appropriately equipped equipment in your system.

Additionally, The Rem cable can be used with a HT processor with an available 12v trigger to provide amplifier on/off functionality in a Home Theater based system.

IMPORTANT

These amplifiers operate at high voltages. Do not attempt to operate them if they have been exposed to liquids or if the appropriate tubes are not in place.

DESIGN PHILOSOPHY

Y All Doshi Audio Evolution Series products are designed with sound quality and reliability as primary goals. The use of passive components that are rated for many times their actual dissipation which results in low thermal stress and heat modulation. Circuits that use the minimum number of gain stages and zero feedback where possible provide a level of realism and serve to preserve the beauty of the music The Evolution series Monoblock Amplifier builds on successful V3 design. The Amplifier is a 3 stage design with a classical pentode input stage , dual triode driver and pentode output based on the KT-150 tube type. This topology is used to create a amplifier with real world speaker drive capability of 160wpc while using only 3 gain stages and approximately 17db of feedback. The audio section is supported with a custom designed power transformer, regulated supplies and a massive output transformer with 14 interleaved sections for ultra wide bandwidth and a 4" core that is rated for 400w at 20hz. This assures that the transformer will never suffer from saturation effects and is a large contributor to the dynamic capability of the amplifier. Inputs are Single Ended/ Direct or XLR balanced via a differential to SE converter. All Doshi Evolution series amplifiers feature comprehensively re-designed power supplies, the latest Clarity Cap Purity Series coupling capacitors, re-designed audio circuit boards. Carried over from the V3 series are the stainless-steel chassis, Mechanical isolation is provided in the form of isolation grommets for the audio circuit board and mass damping of the chassis in the form of the top plate. Outrigger legs add another layer of mechanical isolation. This results in a chassis that is resistant to mechanical and air-borne energy and allows the audio circuitry to function optimally.

FRONT PANEL CONTROLS

The front panel of the amplifier has a display window surrounded by 4 buttons and 6 Led indicators. These buttons and associated LED indicators work only when the rear panel power supply switch is turned on for 30 seconds and then goes dark except for a single blue dot on the bottom right of the display to indicate that the power is on.

DISPLAY BUTTON:

The Display Button is located at the bottom left of the display. The Display Button can be used to wake the display up. The display readout indicates either the elapsed hours or tube bias reading depending on its last used position. The readout can be changed using the Function Button described below. Having the display in the on position makes the setting of bias easier by preventing the display from going to sleep during the biasing procedure.

MUTE BUTTON

The Mute Button is located on the top right of the display. It mutes the input and output to the amplifier. Although the mute function is automatically activated for 30 seconds on startup, it can be activated at any time after startup by depressing this button. Please use the Mute Button when replacing input or speaker cables to prevent damage to the amplifier or the loudspeakers.

FUNCTION BUTTON

Repeatedly pressing the Function Button cycles the display through the bias readings and elapsed hour counter. When bias settings are displayed, the 4 LED's on the bottom of the display indicate the respective tube that is being displayed. Tubes are numbered on the top of the unit next to the tube sockets.

Biasing the Power Tubes (For a new tube set, please refer to the last section of this manual)

Front Panel

BIAS SETTING:

The bias setting provides a subtle tone control for this amplifier. When following the bias procedure outlined below, set the bias for each tube at 190 for the most linear sound. Adjust the bias up or down from 190 to adjust for taste –- higher values will warm up the sound. Lower values will have the opposite effect. Do not go below 170 or above 220. Values too low will not sound good and values too high will shorten tube life.

BIAS PROCEDURE:

Turn on the power and allow at least 30 minutes for the tubes to stabilize.

Press the display button to activate the display and press the function button until the first LED from the bottom left is lit. This means that you have selected tube 1.

Press the Mute button to mute the amplifier before beginning the adjustment procedure.

The display panel will display a 3 digit number indicating the bias setting. Carefully insert a small flat blade screw driver into the small hole adjacent to the tube being biased, so that screwdriver blade is in the slot of bias control.

Turn the screwdriver clockwise or counterclockwise a little at a time to adjust the bias to the desired level (keep in mind the bias recommendations in the preceding section).

After biasing the first tube, press the function button to move to the reading for tube 2 and adjust it to the same desired level as tube 1.

Repeat these steps through the reading of all 4 tubes and adjust the bias of each tube to be +/- 5 units from the value you have chosen. Make the adjustments gradually. You may need to do this more than once since adjusting one tube affects the bias settings of other tubes.

Ground Lift – If you hear a buzzing sound through the speakers, it is possible that a so-called ground loop is the cause. In the event that a ground loop occurs between the preamplifier, amplifier and other processors, the Ground Lift Switch can be used to break the ground loop. A Ground Lift switch is also located on the rear panel of the Doshi Audio Preamplifier Power Supply.

It is important for safety reasons to have at least one ground lift switch in the system in the "unlifted" (down) position, thus maintaining a safety ground among the connected components.

Speaker Mute Override – The rear mute switch provides additional control of the speaker mute function. It is similar to the mute switch on the front panel, but only affects the output of the amplifier. Lifting the switch to the up position engages the speaker mute independently of the front panel Mute Button. This is an additional safety feature to protect the speakers when changing the speaker cable.

MISCELLANEOUS

General Features

Custom-made audio transformers by Toroid Corp in the USA , and custom-made coupling capacitors by ICW Clarity CAP in the UK

A design that takes full advantage of the rugged new KT150 output tubes.

Isolation grommets on all circuit boards and interior components.

A 14-gauge stainless steel chassis, which features material strength combined with non-magnetic properties and natural internal damping.

A top made from a a constrained layer damped aluminum top plate which contributes extremely high internal damping.

Tube sockets made from Teflon, with gold-plated copper connection pins.

Tube Complement

Input tube – 12SJ7
Driver Tube - 12SN7 (x2)
Output tube – KT150 (x4)

Different makes of the input tubes can be used to tailor the sound to the listeners taste. In the output section, KT 150's are supplied, however KT88 and KT 120 will work as well. Please consult Doshi Audio or an authorized dealer about tube substitution, as use of non-supported tubes will void the warranty.

Fault Amplifier Controller

The amplifier controller is designed to shut the unit down should it detect an over current condition in any tube(s) or a fault with the bias supply. Should an output tube fail, the controller will turn the amplifier off but leave one of the 4 LED displays on to indicate which tube has failed.

SPECIFICATIONS

Output power: Minimum 160W/4 ohms. The stock output transformer supplied is for a 4 ohm load. Other output impedances are available by special order. Contact Doshi Audio for further information.

Input impedance: 40Kohm SE and 20Kohm Balanced (the design of the amplifier is Single Ended thus the SE input is the direct input. The balanced input is an extremely high quality instrumentation type amplifier that converts the differential input to SE.)

V1

Output impedance: 0.5 Ohm
Damping Factor: minimum 10
Hum and Noise: At least 80db below 0dBw (1W)
output (A weighting)

Frequency response (1W): 10Hz to 75Khz +/-1db
Sensitivity: 1.4V for full output
Dimension: 17" wide x 19" deep x 10" tall
(not including speaker post length)

Weight: 90lbs / 110 lbs with packaging

REM connections
IN —12vdc remote trigger connection; tip positive, optically isolated OUT -– Loop through of the trigger signal

LIMITED WARRANTY:

Doshi Audio LLC (for U.S. sales) warrants this product against defects in material or workmanship for the time periods and as set forth below. Pursuant to this Limited Warranty, Doshi Audio LLC will, at its option, (i) repair the product using new or refurbished parts or (ii) replace the product with a new or refurbished product. For purposes of this Limited Warranty, "refurbished" means a product or part that has been returned to its original specifications. In the event of a defect, these are your exclusive remedies.

TERM:

For a period of 180 calendar days from the original date of purchase of the product, Doshi Audio LLC will, at its option, repair or replace with new or refurbished product or parts, any product or parts determined to be defective.

For a period of 24 months from the original date of purchase, Doshi Audio will repair the product free of labor costs

This Limited Warranty covers only the hardware components packaged with the Product.

INSTRUCTIONS:

To obtain warranty service, you must obtain a return authorization from the dealer that originally sold the product or Doshi Audio. You must deliver the product, freight prepaid, in its original packaging to Doshi Audio. Doshi Audio will not be responsible for any shipping damage or loss.

This Limited Warranty only covers product issues caused by defects in material or workmanship during ordinary consumer use; it does not cover product issues caused by any other reason, including but not limited to product issues due to commercial use, acts of God, misuse, limitations of technology, or modification of or to any part of the Doshi Audio product.

LIMITATION ON DAMAGES:

Doshi Audio LLC SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY OR CONDITION ON THIS PRODUCT.

DURATION OF IMPLIED WARRANTIES: EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY.

Some states or jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This Limited Warranty gives you specific legal rights and you may have other rights which vary.

Serial # E2049 Manual Addendum

This unit is a custom build with a Sowter 8055 Moving Coil Transformer input in the 2nd input position.

Input 3 is designated as the 47K input.

NOTES ON BIAS AND INSTALLING NEW TUBES

BIASING PROCEDURE

Bias Setting:

The bias setting provides a subtle tone control for this amplifier. When following the bias procedure outlined below, set the bias for each tube at 190 for the most linear sound. Adjust the bias up or down from 190 to adjust for taste -- higher values will warm up the sound. Lower values will sound more linear. Do not go below 170 or above 220. Values too low will not sound good and values too high will shorten tube life. .

Bias Procedure for a new tube set or replacement output tube:

1: turn the bias trim potentiometer corresponding to the replaced tube counterclockwise until it reaches a stop. For a full tube set, turn all 4 bias adjustment potentiometers counterclockwise until they stop

2: install the tube(s). The socket and center pin of the tube are keyed and will fit in one oritntation only

3: Turn on the power and allow at least 30 minutes for the tubes to stabilize.

4: Press the display button to activate the display and press the function button until the first LED from the bottom left is lit. This means that you have selected tube 1.

5: Press the Mute button to mute the amplifier before beginning the adjustment procedure.

6: The display panel will display a 3 digit number indicating the bias setting. Carefully insert a small flat blade screw driver into the the slot of bias control potentiometer.

7: Turn the screwdriver clockwise slowly until you see the reading start to go up. It is imperative that you are monitoring the tube you are adjusting. The 4 LED's below the display correspond to V1-V4 starting from left to right. You can turn the potentiometer counterclockwise a little at a time to lower the bias as well. (keep in mind the bias recommendations in the preceding section) .

8: After biasing the first tube, press the function button to move to the reading for tube 2 and adjust it to the same desired level as tube 1.

9: Repeat these steps through the reading of all 4 tubes and adjust the bias of each tube to be +/- 5 units from the value you have chosen. Make the adjustments gradually. You may need to do this more than once since adjusting one tube affects the bias settings of other tubes.

REAR PANEL CONTROLS

Input :

The RCA input is a Direct input – The amplifier also features a differential input supplied with an XLR connector. The design of this amplifier is Single ended at the input therefore the RCA input should be used if the shortest signal path is desirable. The Differential input is a very high quality unity gain instrumentation amplifier.

Ground Lift – If you hear a buzzing sound through the speakers, it is possible that a so-called ground loop is the cause. In the event that a ground loop occurs between the preamplifier, amplifier and other processors, the Ground Lift Switch can be used to break the ground loop. A Ground Lift switch is also located on the rear panel of the Doshi Audio Preamplifier Power Supply. It is important for safety reasons to have at least one ground lift switch in the system in the "unlifted" (down) position, thus maintaining a safety ground among the connected components.

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