

EVOLUTION

# TAPE PREAMPLIFIER OPERATING INSTRUCTIONS



Beautiful As Music

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## PHONO PREAMPLIFIER OPERATING INSTRUCTIONS



### IMPORTANT

The umbilical cables carry high voltages. Care must be taken to make sure they are properly inserted. The Chassis earth wire must always be installed for safety. Allow at least 30 minutes after turn off before removing the umbilical cable to allow the high voltage to drain.

**The Chassis earth wire terminates in a Banana Jack. This must be installed at the power supply and preamplifier. This wire functions as the safety earth connection at the preamplifier**

### UNPACKING

The Doshi Audio Tape preamplifier is made up of an audio unit, power supply and umbilical cords. Please unpack these from the carton and inspect to make sure that there is no damage from shipping

### INSTALLATION

Install the supplied tubes into the audio unit. Please be extremely careful so the tube pins or sockets are not damaged (see tube section in this manual for installation instructions)

Connect the umbilical cords to from the Power supply to the Audio preamplifier



Rear of Power Supply



Rear of Audio unit showing output and HV power connection



Umbilical Cables



Front of PSU

## DESIGN PHILOSOPHY

All Doshi Audio Evolution Series products are designed with sound quality and reliability as primary goals.

The use of passive components that are specified for ten 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 tape preamplifier builds on successful V3 design. An external preamplifier for tape playback is a preferred solution for the highest level of playback from magnetic tape.

The low level signal from a tape head is fed into a head amplifier featuring a differential input and class A servo controlled output. The features of this design are near theoretical levels of noise with very high headroom. The head amplifier section is also responsible for gain, LF-EQ and a shelving HF boost designed for high impedance tape heads that have falling high frequency response.

The head amplifier feeds the tube amplification and equalization sections. Each channel has separate equalization and amplifications sections for NAB and IEC/AES eq. This is done to optimize the playback responses and provide optimal handling of playback of different tape recording standards.

The output section features a phase splitter and balanced tube driver section with undistorted output capability of over 80V p-p. This ensures that master tapes with elevated recording levels can be played back without any reservations.

All Doshi Evolution series preamplifiers 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 acoustic energy and allows the audio circuitry to function optimally.



## REFERENCE LEVEL IS +4 DBM AT THE VU METER SETTING OF 0VU

This preamplifier is designed to provide amplification and equalization for Tape playback for Open reel tapes.

The front panel of the unit features a mute switch. Adjustment for Meters and level/eq.

The rear panel provides connection for tape heads, head loading, gain and outputs as well as connections for the power supplies.

This unit has one input with 2 types of connectors. This allows the user to connect both types of audio connectors. XLR and RCA. There is also a grounding post with a ground lift switch. The normal position for this switch is UP (ground lifted). If you are hearing any ground loop hum. Using this switch will help isolate the source of the noise.

### IMPORTANT:

**Use only one set of inputs (XLR or RCA, not both)**



## HEAD LOADING:

The preamplifier has 3 settings for head loading. The high and medium positions will be correct for 90% of tape heads. Very low inductance tape heads will need the low loading position. To check that the loading is correct – calibrate the unit with a test tape at 1Khz and 10Khz. If the 16khz is reading higher than 10Khz, you will probably need a lower setting, if it reads lower, try a higher loading. You may find you prefer a loading for the sound rather than perfect calibration.

Gain: The preamplifier has gain adjustment for different head outputs. If the tape head has low output and you cannot calibrate to "0" VU at full gain level, you can increase the gain by 3 db on the rear panel. The Head amplifier has an additional 3 dB of gain via a jumper.

The Head loading values are:

Hi (switch mid position) – 50Kohms

Mid (switch up position) – 36K ohms (default position 2 for Flux Mag Standard Head, long cable)

Lo (switch down position) – 30K ohms (default position 1 for Flux Mag Standard 180–200uH Head)

## ALIGNMENT PROCEDURE:

**The use of an alignment tape is required for this procedure.**

### LOW FREQUENCY EQUALIZATION:

The Evolution series LF eq is a Baxandall type centered at 50hz, this gives a moderate correction for low frequency response due to head "bumps"

To set LF Equalization, play a test tape, set the output level to read "0" vu at 1Khz and check if the 32 hz tone reads between +/- 1Vu. If this is correct, do not adjust the LF eq. if the 30Hz is lower or higher than +/- 1VU, then you can adjust the knob marked LF Eq for each channel. If in so doing, you observe a rise in response at the 60 Hz tone, you may decide to split the difference where 32 hz is down a little and 62hz is up a little.

(On some Studer decks, the design of the head block and shielding affects the LF reproduction. Typically Studer decks set to -1vu for 32hz will give satisfactory reproduction.)

Trying to equalize the LF may give rise to frequency response deviation in the mid-bass frequencies so this adjustment must be done judiciously and with listening tests.

ATTN: Some tape stages supplied with transports will have the LF eq and Gain adjusted internally at the factory. This is done so as to reduce the amount of cable through the signal path.

### Front Panel Tape playback Calibration:

You will need a test tape with IEC and NAB equalization. Play the test tape and adjust levels and HF response with the controls on the right side of the unit



*Front panel Adjustment and Meter calibration*

### METERING :

The unit has been calibrated to show "0" VU for +4db (@ 1vrms). There is a +4 db switch which will set the meters to show approximately "0" VU for +8db. There are also 2 meter calibration potentiometers to allow for other reference calibration. This must be done with the help of an external voltmeter.

IMPT: Meter adjustment pots are located to the left and right of the meter level switch. Adjust counter clockwise for increase in indication. **Meter calibration pots are not for output level adjustment.**

**ATTN:** Tape preamplifiers may be supplied with different meter calibrations on customer request : please look at the calibration sticker on the rear of the adjustment plate.

### TUBES:

The Unit uses a total of 8 tubes (4 Per channel)

V1/V2 : ECC99 / 12BH7 Line driver output , one per channel

V3/V4: ECC81/12AT7 Phase splitter, one per channel

V5/V6: ECC81/12AT7 IEC Eq amplifier and driver, one per channel

V7/V8: ECC81/12AT7 NAB Eq amplifier and driver, one per channel

The tubes provided are of good quality OS or NOS. The User may prefer to substitute other tubes of the same type to tailor the sound characteristics to their taste.

IMPORTANT: BE VERY CAREFUL when inserting and removing tubes. Avoid touching the glass with bare hands and do not force the tube into the socket. Gently seat the tube into the socket and a firm push will seat it in.

### CLEANING OF THE UNIT:

Please do not use solvents of any kind. A slightly damp cloth is adequate. A plastic polish ( Plexus© ) is safe to use.

### Specifications:

Weight – total weight 40lbs

Power Consumption – 32W

Gain – Max 58db (adjustable)

Hum and Noise – At least 80db below 0dbv

Doshi Audio LLC, 2020

## LIMITED WARRANTY:

Doshi Audio Inc (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 Inc 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.

## VACUUM TUBES:

For a period of 180 calendar days from the original date of purchase of the product, Doshi Audio Inc will at its option, replace defective vacuum tubes with new or refurbished equivalent parts.

## ALL OTHER HARDWARE:

For a period of 2 years from the original date of purchase of the product, Doshi Audio Inc 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 4 years 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. This does not cover shipping costs associated with the repair.

## 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.

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Manual Addendum: Fader option

Calibration for frequency response:

This preamplifier has been provided with 2 Calibration tapes. One for IEC eq and One for NAB eq.

Please follow the tape transport manufacturer procedure for optimum head alignment and make sure the tape heads are demagnetized and the tape path clean before starting this procedure.

Place the unit EQ switch in the correct position for the tape being used (IEC position for the IEC calibration tape).

The tape has a series of tones use the first 1khz tone to set the level on the front panel for "0" VU

Use the 8khz and 16khz tones to set the rear panel loading switch for minimum difference between the two tones, i.e. if the 16khz is higher than the 8khz, use a lower loading position. If the 16khz is lower, use a higher loading position

Start the frequency calibration – the second tone is 60hz, use the LF EQ knobs for both channels to adjust the response for 60hz.

As you go up in tones, the meter should read +/- 1vu all the way to 12.5khz, use the HF eq to adjust 12.5khz for "0" vu for each channel and observe the level upto 20khz. Depending on the heads and cabling, it will be slightly higher or lower.

Repeat for the other tape / Eq

# EVOLUTION SERIES

The V3 series was extremely well received by the press, dealers and customers. It has proven itself to be reliable, great sounding and distinctive in its "form follows function" looks. It was hard to improve upon in significant ways but we have achieved this goal in every area of performance and reliability.



LINE PREAMPLIFIER



MONOBLOCK AMPLIFIER



PHONO PREAMPLIFIER



STEREO AMPLIFIER

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