

# **TRAVERSE**

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A N A L O G U E

Vacuum Tube Preamplifier / 652

User Manual

# I. WARRANTY & DISCLAIMER

During the warranty period of 2 years from original date of purchase, with proof of purchase, Traverse Analogue will at no additional cost, repair or replace defective parts with new parts. This warranty does not extend to any unit that has been damaged or rendered defective because of accident, misuse, or abuse; by unauthorized modification or repair of the 652.

Vacuum tubes are NOT included in this warranty but are warranted from manufacturer defect for 90 days from original date of purchase, with proof of purchase.

This manual provides general information, preparation for use, installation and operating instruction for the 652. The information contained in this manual is subject to change without notice. Traverse Analogue makes no warranties, express or implied, regarding this manual, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

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## II. SAFETY PRECAUTIONS

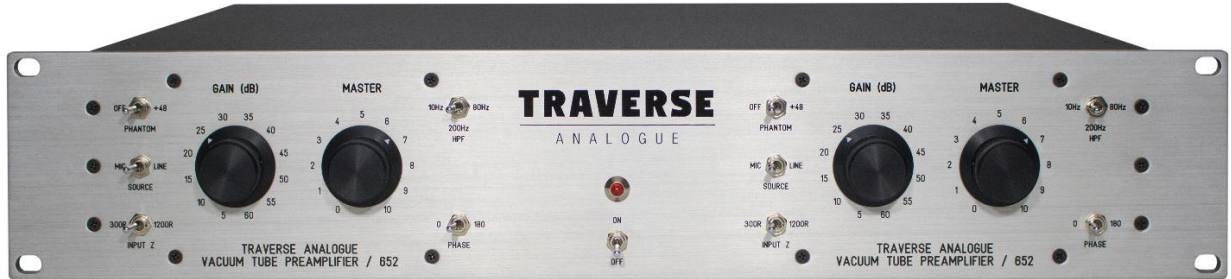
Before using this unit, be sure to carefully read the applicable items of these operating instructions and the safety precautions. Afterwards, keep them handy for future reference. Take care to follow the warnings indicated on the unit, as well as in the operating instructions.

- 1. Water and Moisture** – Do not use the unit near any source of water or in excessively moist environments.
- 2. Object and Liquid Entry** – Care should be taken so that objects do not fall, and liquids are not spilled, into the enclosure through openings.
- 3. Ventilation** – When installing the unit in a rack or any other location, be sure there is adequate ventilation over, below, and beside the unit. Improper ventilation can cause overheating and damage the unit. It is recommended that at least 1RU of space be left atop and below the unit.
- 4. Heat** – The unit should be situated away from heat sources, or other equipment that produce heat.
- 5. Power Sources** – The unit should be connected to a power supply only of the type described in the operating instructions, or as marked on the unit.
- 6. Power Cord Protection** – AC power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay attention to cords at plugs, receptacles, and the point where they exit from the unit. Never take hold of the plug or cord if your hand is wet. Always grasp the plug body when connecting or disconnecting it; do not pull from the cable.
- 7. Grounding of the Plug** – This unit is equipped with a 3-wire grounding type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet, or correct facility wiring. Do not cut or remove the third pin.
- 8. Cleaning** – The unit should be cleaned only as recommended by the manufacturer. A slightly damp cloth should be used for the front panel. There is no need to clean the inside of the unit, unless performed by an appropriate technician.
- 9. Damage Requiring Service** – The unit should be serviced by qualified service personnel, as suggested by the manufacturer.
- 10. Servicing** – The user should not attempt to service the unit beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel, as suggested by the manufacturer.

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# THE 652: AN OVERVIEW



The 652 is no imitation. Its design philosophy brings together the character and warmth of tubes, with solid state components and control circuitry. This dual-stage preamplifier features a 12AX7 input stage, followed by a high-voltage transistor buffer output.

The circuit allows you to achieve up to 60 dB of gain. It features all Class A discrete circuitry, with custom Lundahl input and output transformers, and the highest quality of hand-selected componentry. It accepts a variety of microphone and line-level sources and includes dual input impedance switching.

The 652 gives your source material the analogue touch it deserves, without needing a selection of esoteric gear in your rack to achieve it!

# SPECIFICATIONS & PERFORMANCE

## Input Impedance

300 $\Omega$ , 1200 $\Omega$   
15K $\Omega$  (Line)

## Maximum Input Level

+4dBV (XLR, 1200R setting)  
-2dBV (XLR, 300R setting)

## Maximum Output Level

+15 dBV

## XLR Output Impedance

< 65  $\Omega$

## Recommended Minimum Load

300  $\Omega$

## Frequency Response

18 Hz to > 50 kHz (-3 dB)

## High Pass Filter Characteristics

-3dB @ 80Hz or 200Hz, 20dB/decade (first-order)

## Maximum Gain

60 dB (1200R XLR input to XLR output)

## EIN Noise

-127.5 dBV (20Hz ~ 20kHz); -130dBV (A-wtg)

## Residual Output Noise (Master at Zero)

-120dBV (1 $\mu$ V) 20Hz ~ 20kHz

## Noise Factor

5.5dB re 150R source impedance (20Hz ~ 20kHz)

## THD+N

0 dBV to 15 dBV, 0.03% to 2%

## Tube Per Channel

1x 12AX7

## Phantom Power

+48V DC

## Power Sequencing

Soft-start for tube filament supply;

Soft-start for high voltage supply;

30s turn-on delay for output relays;

Output relays mute immediately at power-down

## Power Requirements

110-120V / 220-240V, 50/60Hz, 32VA max.

## Power Consumption

24 Watts

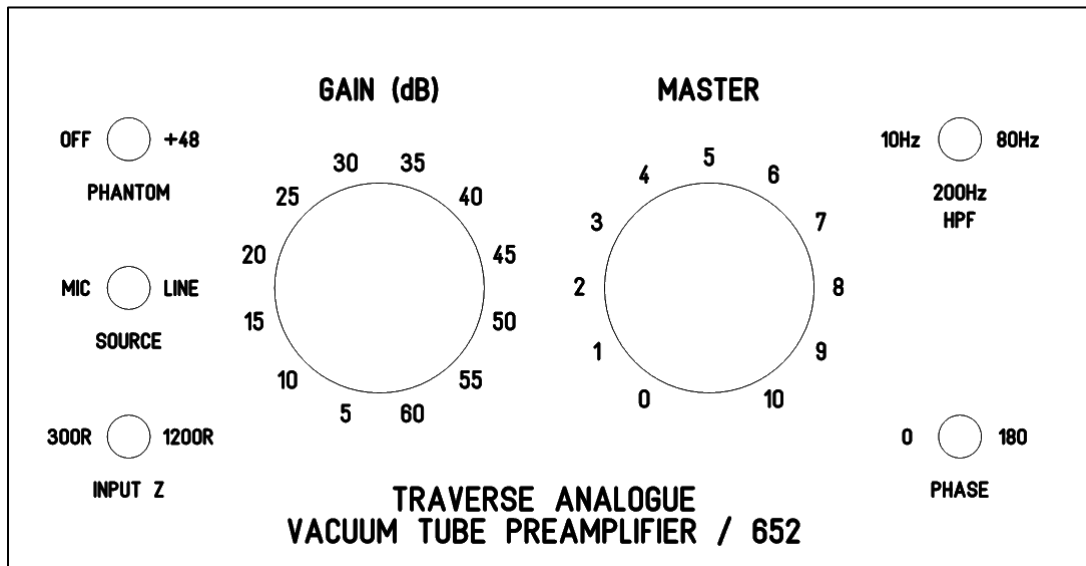
## Dimensions

19" W x 3.5" H (2RU) x 12.25" D

## Weight

15 lb.

# OPERATION & CONTROLS



**INPUT Z** - There are two input impedances available, primarily for use with microphones. The rear XLR inputs are switchable between 300 ohms and 1200 ohms via the front panel switch.

**SOURCE** - The preamplifier can be used with line level outputs by selecting LINE.

**PHANTOM** - Regulated +48V (P48) is available on the rear XLR inputs by engaging the front panel switch. To prevent microphone damage, always ensure the switch is in the "OFF" position before making connections. Phantom power is not available on the XLR inputs when the source switch is set to LINE.

**GAIN (dB)** - A 12-position rotary switch controls the net gain via the input tube stage. With the MASTER control at maximum, the net gain will be adjustable from 5dB - 60dB in 5 dB steps. (1200R)

**MASTER** - A potentiometer in the output buffer circuit attenuates the signal, from the specified gain on the GAIN (dB) switch, to zero.

**HPF** - The cutoff frequency of the high pass filter may be changed between 10HZ, 200HZ, or 80HZ.

**PHASE** - The output signal polarity can be flipped 180 degrees by engaging the front panel switch.

**I/O** - Each channel has an input and output XLR jack; fully balanced through custom Lundahl transformers.

# POWER REQUIREMENTS & MAINTENANCE

**WARNING:** Lethal voltages are stored inside the 652, and remain for some time after the power has been disconnected! Refer all servicing to qualified personnel!

**AC RECEPTACLE** – This unit is equipped with an IEC power-entry connector on the rear panel and accepts 120VAC and 240VAC. Please ensure the correct voltage is set **internally** before applying power. The fuse is located inside the rear IEC receptacle and must be replaced with a 5X20MM 250VAC 1A Slow-Blo. If you are uncertain, please check with a qualified technician.

**NOTE:** The 652 utilizes various control circuitry, including a gradual ramp of the supply rails and an output-muting relay. Therefore, it is normal for the 652 to take **30 seconds** of warm up time before any signal can pass.

Your 652 comes out of the box factory-calibrated and characterized for best performance. The only user maintenance that generally needs to be carried out is tube replacement from time to time. Traverse Analogue supplies each unit with a pair of 12AX7s (factory selected for low noise). Tubes can last thousands of hours, but if you notice the preamplifier becoming excessively noisy after prolonged use, they may need to be replaced.

Please contact your dealer for tube options or contact Traverse Analogue to purchase a set of recommended replacements.

## To replace the tubes:

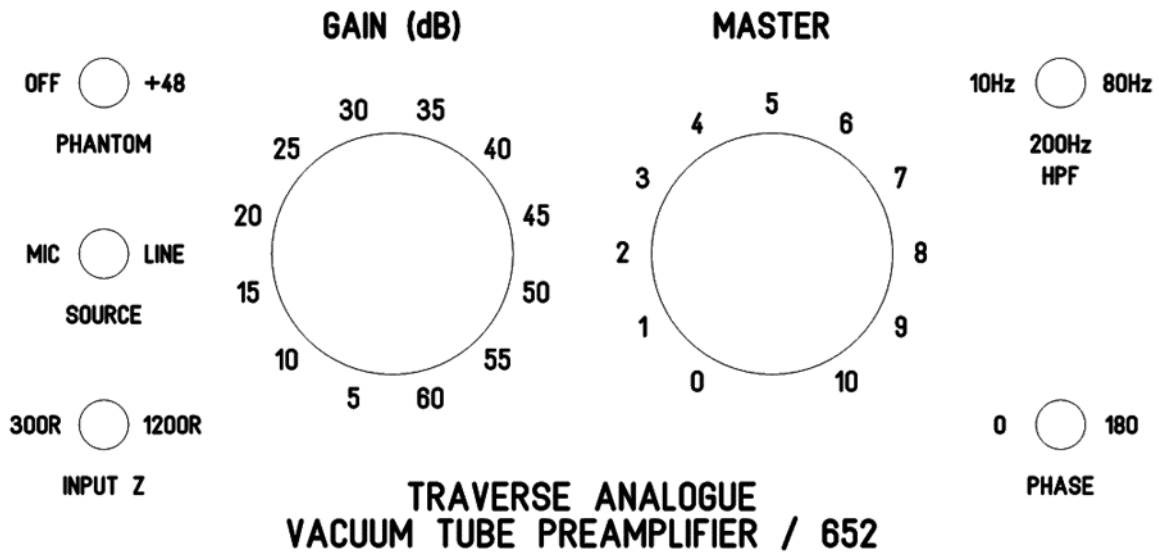
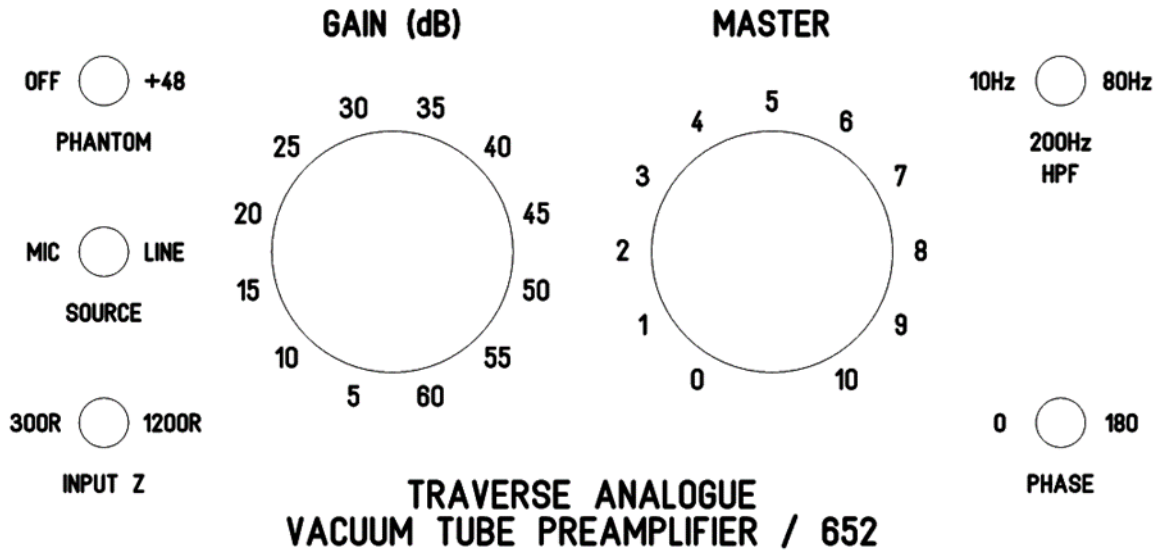
- Ensure the 652 is unplugged and unscrew the top cover.
- Gently rock the tubes in a circular motion while pulling outwards to release them from the sockets.
- Replace the tubes in the same manner, taking caution not to stress the circuit board, and then replace the top cover.

**WARNING:** Do NOT attempt to substitute other tube types. 12AX7/ECC83/7025 only!

If you experience a technical issue, please contact your dealer or Traverse Analogue directly for customer support.



# RECALL SHEET



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