

Unofficial  
**LLANO TRINITY OWNER'S MANUAL**

The Llano Trinity was designed by Randy White of White Audio Labs in Lubbock, Texas. This amplifier is likely a hybrid version of his S series amplifiers.

The front end of this amplifier uses a current-limited heater/filament supply that works with 6.3V and 12.6V tubes of the same pinout - EIA 9A and EIA 9AJ standards, respectively. This includes all 12AX/U/T/7 tubes, 6DJ8 and 6922 and others. Both triodes are configured in parallel and are capacitively coupled to the first current gain stage, which is biased into class A or high class A/B. This stage is capacitively coupled to the final current gain stage which is biased into class A/B.

Both channels have their own discrete B+, heater, and output stage power supplies.

### **Power up and shut down**

This amplifier has two power switches; one for the input supply (rear panel, near power socket), and another for the output supply (front panel). Make sure both of these switches are off, in the down position, before connecting anything to the amplifier.

Make your speaker and preamp connections (self-explanatory) and then double check them before plugging the amp into an AC power outlet.

The input supply should be turned on first, using the toggle switch near the power cord/IEC socket at the rear of the amplifier. Allow 30 seconds for the input stage to settle.

It was intended by the designer that the input stage be left on. This is not a low power mode or a standby mode, as the heater and B+ remain at full potential. The reason for this is to keep the input stage warm so that it is ready to play when the front panel switch is pressed.

Pressing the front panel power switch up will power on the output stage and thus make the amplifier ready to play.

Pushing the front panel switch powers down the output stage and effectively turns the amplifier off, though the input stage will remain powered on.

To completely power down, turn off output stage first, wait 30 seconds, then turn off the input stage.

It is not advised to switch the input stage supply on or off while the output stage is energized as there is a possibility of a speaker-damaging DC surge at the outputs.

## **Tube rolling**

First, be aware that the B+ voltage (over 300V) "stays" in the amplifier even when it is completely unplugged and disconnected. Because the boards are mounted horizontally, this could present a shock hazard when trying to reach a tube. Discharging the B+ (red wire) through a 500 to 1000 ohm, 10W resistor to ground (black wire) on each board is the most effective way to bleed the voltage from B+, and the safest thing to do before rolling tubes. Otherwise if you are experienced, have good coordination, and trust yourself, you can easily reach around the boards without getting zapped.

To remove the existing tube, first make sure that it has cooled down. Then pull the tube from the socket while gently rotating it in the socket. Be aware to not pull too hard or you may hurt your hand if the tube comes out suddenly.

Inserting a new tube is the opposite of removing one, but with the added challenge of correctly aligning the pins with the holes in the socket.

## **Miscellaneous**

-Use a couple of layers of corrugated cardboard under the heatsinks to lift and move the amp without hurting your hands.

-This amplifier will sound dramatically different depending on which input tube is used. This is in part due to the different gain and tonal characteristics unique to every tube.

-This amplifier requires matched triodes due to the parallel circuit. Unmatched tubes will unquestionably cause more distortion.

-The amplifier output level is set by the input stage (voltage) gain. A high Mu (gain) tube (12AX7) will be louder than a low Mu tube (12AU7).

-The heatsinks will be hotter at the rear of the amplifier than at the front. This is because the first current gain stage is located at the rear of the heatsink and is biased much higher than the rest of the output stage.

-When the front panel switch is off and music is playing, you may hear a faint, crackling, distorted sound from the speakers. This "leakage" is to be expected as the input stage is never disconnected from the MOSFET output stage.

-There are no published specs for this amplifier other than that it offers 100k ohms of input impedance, 100W into 8 ohms and 200W into 4 ohms. Other specifications such as distortion, frequency response, bandwidth, and signal to noise ratio cannot be stated definitively as they vary too greatly depending on tube type.

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