Summit Audio Inc.®

Summit Audio Model TD-100
Instrument Preamp and Tube Direct Box

Operation Manual

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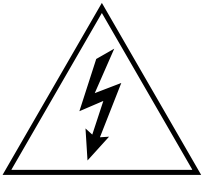
Introduction

The TD-100 is a single channel direct box and instrument preamp featuring a hybrid signal path utilizing a solid state output device and a 12AX7A/ECC83 vacuum tube. This unique combination of of solid state and vacuum tube technology gives the TD-100 the benefits of both worlds: the high reliability and long life of solid state and the warm overtones associated with vacuum tubes. Other great features such as continuously variable input impedance, polarity switching, and a headphone output make the TD-100 a great sounding tool for the studio or the stage. Enjoy!



DANGER!
HIGH VOLTAGE

IMPORTANT: Check the back panel to make sure the TD-100 is configured for the voltage used in your country. This is done at the factory **ONLY**.

Features

- Ease of Operation
- Headphone Output
- Variable Input Impedance
- Direct Output for easy parallel connections
- Balanced Outputs
- Hand Crafted in the U.S.A.

Carefully unpack the TD-100 and it's power cord. Save the carton and packing material for possible future use. Before powering up the unit, read this manual and observe the cautions for **HIGH VOLTAGE**.

Front Panel

Ground Lift Switch

This two-position switch removes the third prong of the power cable from the circuit. Lifting the ground can sometimes reduce the hum caused by a ground loop in your audio system.

Polarity Switch

This switch changes the polarity of the outgoing signal.

Direct Instrument Output

This jack mirrors the instrument input. Plug your instrument into the input and run a line from this ouput to the input on your amplifier. This output is not affected by the Loading control.

Instrument Input

Input for your bass, guitar, keyboard or other instrument. The maximum input level is +24dB.

Loading Control

This knob controls the loading or impedance for the instrument input. The impedance can be set from 10K ohms to 2M ohms.

You can set this control to match the TD-100 to the impedance of your instrument or as a kind of tone control. In practical use you'll set this control to get the sound you like best.

Signal LED

This green LED lights to indicate a proper level at the input.

Drive LED

This amber LED lights to indicate clipping on the input.

Output Gain Control

This control varies the output gain. The XLR output can be varied from -20dB to +4dB. The 1/4" TRS output can be varied from 0dB to +24dB. *(0dB input level)*

Power

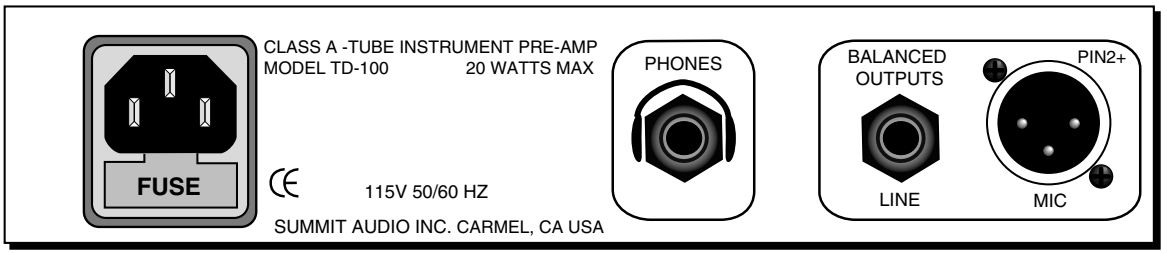
This switch toggles AC power on and off.

Important - Please Read!

The TD-100 contains a vacuum tube which generates heat.

Do not block the cooling holes on the top of the TD-100 and always allow adequate ventilation when mounting the unit in a rack enclosure.

Rear Panel



A.C. Receptacle

The TD-100 is factory wired for either 100, 115 or 230 Volts AC. Before connecting AC power make sure the TD-100 is wired for the voltage used in your country.

Headphone Output

Use the TD-100 as a practice amp by inserting your headphones here. Use the Output Gain control and the instrument's volume control to control the volume.

1/4" TRS Line Level Output

This is a balanced/unbalanced 1/4" high level output designed to interface with your recording device, compressor or EQ without adding a preamplifier. Simply plug in a mono phone plug to use this output unbalanced.

XLR Mic Level Output

This is a balanced low level output used for injecting the TD-100 into another preamplifier. This is most often used in a live performance setting. Pin 2 is positive (+).

Basic Operation

Important: *For proper operation of the TD-100 (or any vacuum tube device for that matter), allow the unit to warm up with power on for 15 minutes before use.*

Important: *Do not block the cooling holes and allow adequate ventilation.*

Just Plug-in & Go

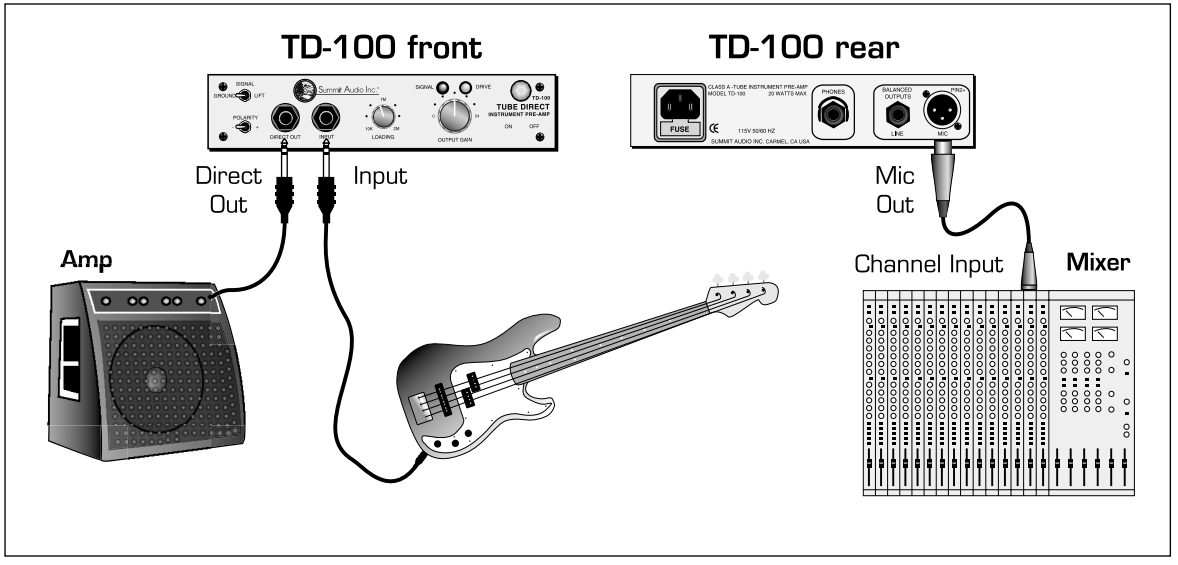
1. Plug your instrument into the front panel input jack.
2. Connect either the rear panel balanced Mic or Line output to the input of your mixer or recorder. *(An unbalanced cable can be used with the Line Level output.)*
3. Adjust the Output Gain for an optimal signal level.
4. Adjust the front panel Impedance control to match for the best sound.
5. Start playing!

Applications

Live Sound

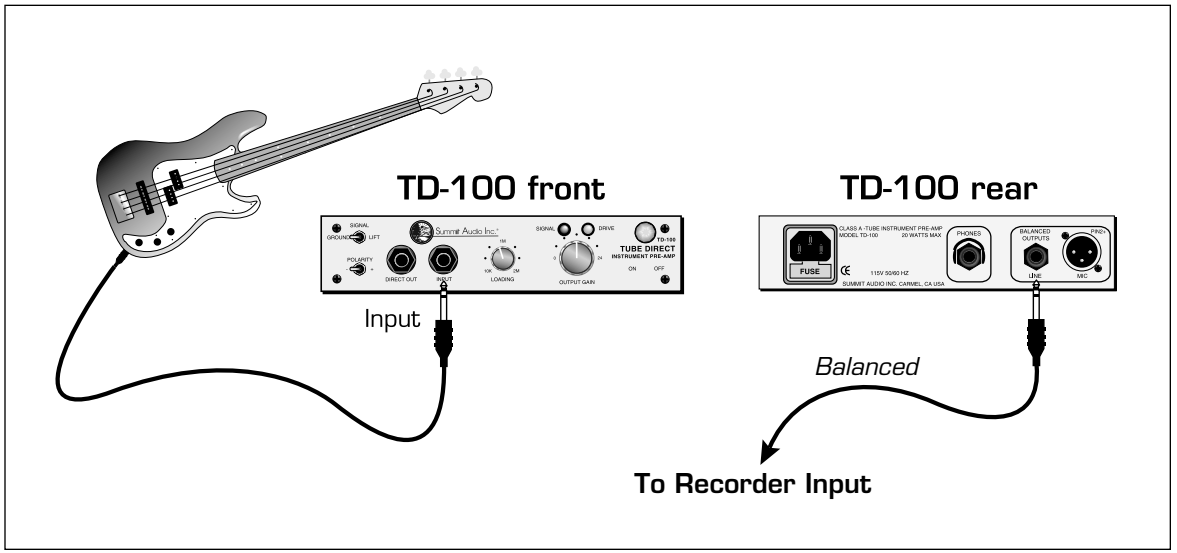
A direct box or "DI" (direct input) is used to take a high impedance instrument signal and transform it into a balanced, low impedance output. In the example below, the Direct Output feeds the Bass Amp and the low impedance, balanced microphone output is sent to the mixing console.

Direct Box Connection



Using the TD-100 as an Instrument Preamp

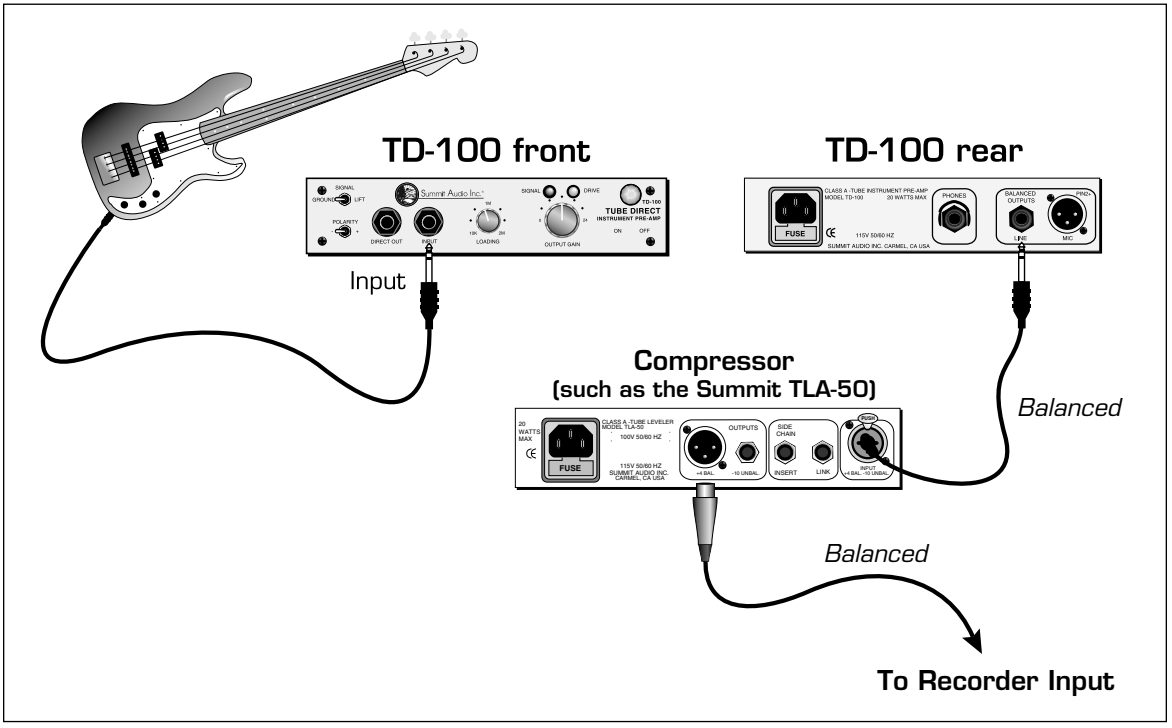
You can use the TD-100 to go directly to your recording device for an ultra-quiet sound. The output is already amplified so there's no need to re-route through your mixer. The line level output of the TD-100 is ideal for interfacing with any other effects you wish to use.



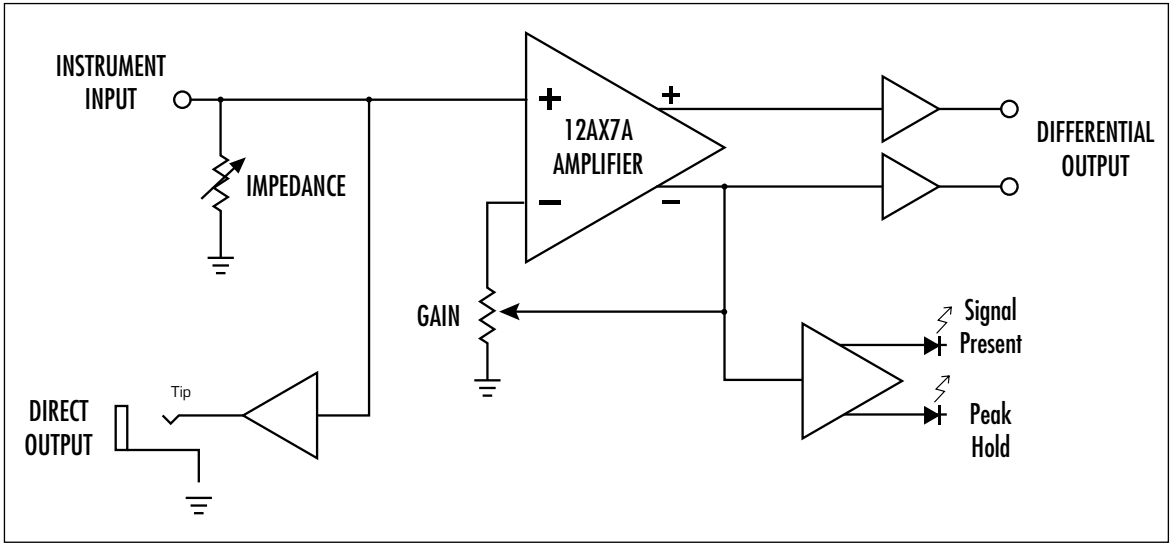
Using the TD-100 and TLA-50 together

For a great bass or guitar channel, try using the Summit Audio TD-100 instrument preamp and tube direct box in conjunction with the TLA-50.

Plug your instrument into the front panel of the TD-100 and run an XLR or 1/4" cable from the output of the TD-100 to the input of the TLA-50. Use the 1/4" output of the TD-100 into the TLA-50 to go directly from the TLA-50 to your recording device, or use the XLR output of the TD-100 into the TLA-50 and patch the XLR output of the TLA-50 into a microphone preamp, then into your recording device.



Circuit Explanation



The Instrument Input to the TD-100 is directly connected to the Direct Output. The Impedance control sets the input impedance of the first stage input. The Impedance control can be used to match the impedance of the instrument and to provide subtle tonal coloration.

The TD-100 features a vacuum tube amplifier driving an electronically balanced output stage. All the signal amplification in the audio path takes place in the tube circuit. The balanced output drivers provide a low output impedance for driving cables and 600Ω loads.

Electrical Connections

Input

Unbalanced 1/4″ jack

Sleeve - - Ground
Tip - - - - (+) Signal

Output

Balanced 1/4″ jack

Sleeve - - Ground
Tip - - - - (+) Signal
Ring - - - -(-) Signal

Balanced 3-pin XLR

Pin 1 - - Ground
Pin 2 - - (+) Signal
Pin 3 - - (-) Signal

Specifications

Circuit Topology

High-voltage Class A

Gain

Switched 6dB steps, maximum gain +24dBu (at 1/4" TRS output)

Maximum Output Level (Class A)

+24 dBu. The outputs are electronically balanced or unbalanced. XLR type (pin 2 hot), 1/4" balanced TRS (Neutrik)

Input

Input impedance is variable from 10KΩ to 2MΩ. Maximum input level is +24dBu unbalanced.

Noise 20kHz unweighted

-121 dBu minimum gain position

Distortion THD, IMD

0.07% at +10 dBu

Frequency Response

-/+0.01dB, 10Hz to 100kHz

Power

Internal AC Supply
20 watts
115 volts
50 or 60 Hz
Fuse size is .5 amp, slo-blo for 100/115 V
Fuse size is .25 amp, slo-blo at 230 V

Dimensions

W: 8.5", **H:** 1.75", **D:** 8.5" *(Two units fit side by side on a standard one-space rack shelf.)*

Weight

7 pounds (3.15 kg)

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Please fill in and mail your warranty card today. We would like to know a little bit about you. We will provide periodic updates, links, announcements and even free stuff. Be sure to include your email address if you have one. Thanks.

TD-100 Op Rev. A