



***Tripledive Supreme® (TDS)
Instrument Amplifier***

V 1.1

Operations Manual

For all TDS Models (head and combo)

**TDS-50
TDS-100
TDS-150**



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TDSm 5/2005



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A Note From Andy,

First of all, *Thank You* for purchasing a Fuchs Audio Tripledrive Supreme® (TDS) amplifier!

The TDS amplifier was created to fulfill the very present demand for a 3-channel instrument amplifier based on our remarkable ODS series amplifiers. The TDS will provide a musician an utterly amazing palette of tonal flexibility! As with all Fuchs products, your TDS is entirely precision handmade by myself & the staff at Fuchs Audio, built to extremely high standards of excellence using the highest quality components. With over two decades experience in the service, manufacturing, and design of tube audio/music equipment, we at Fuchs Audio are extremely proud of the quality and tremendous musicality of our TDS amplifiers.

Please read this manual carefully. Doing so will allow you full understanding of your TDS controls and operation, thus quickly providing you the tones & performance you want. Your TDS can only perform to its fullest glory by your full understanding of all its features.

Feel free to call or e-mail us (we prefer emails!) with comments & questions about your TDS, or just to find out what's new here at Fuchs Audio.

Lastly, I recommend checking out our web site: www.fuchsaudiotechnology.com, for product/user updates, cool links and other info benefiting our customers.

Sincerely,

Andy Fuchs

President

Fuchs Audio Technology®

Fuchs Audio Technology

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Tripledive Supreme® (TDS) Instrument Amplifiers

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1 Introduction to the Fuchs Tripledrive Supreme™ Amplifier

Based on the highly successful Overdrive Supreme™ SLX, (favorably reviewed in the February, 2005 Guitar Player Magazine), the Triple Drive Supreme (TDS) features three footswitch(able) channels of “clean”, “mean” & “scream”. Available in 50,100 and 150 watt versions, the TDS features a dedicated chime filled “California Clean Channel” with brite, deep, and rock/jazz switches, as well as mid and gain boosts. It's second and third channels are based on our successful Overdrive Supreme (ODS) clean and mean channels. The amp is controlled by a 6-way footswitch (included), which provides channel switching, as well as independent control of mid and gain boosts for both channels. An extra (separate) footswitch jack for the reverb on/off is also available, as is the artist footswitch option. The amp also features 4, 8 and 16 ohm outputs, a full-time all-tube buffered effects loop with series or parallel operation.

Like the Overdrive Supreme, the effects loop features separate send and return level controls, a series/parallel switch and trim control to permit line or pedal level device interface. The loop inputs and outputs are “live” whether the loop is terminated or not. This means the send output may be used as a line out, and the return input may be used as a spare line level input for a keyboard, drum machine, or other signal input, at any time. The reverb features a spacious Accutronics long decay 6-spring reverb driven by a push-pull current drive amp and an ultra low noise return amp using bi-fet op-amp technology. Like the ODS, the Tripledrive™ features fan cooling, an aircraft grade T-6 aluminum chassis, individual tube bias adjusts and regulated B+ and DC preamp tube filaments for lowest noise and consistent performance despite line noise or variations.

The TDS chassis (like all Fuchs products) is aircraft grade aluminum, our internal construction is mixed PC board and hard wired. A detachable IEC power cord is standard. By using single point grounding, a regulated and buffered high voltage preamp power supply, the amp is dead quiet and free of hum at all operating levels.

Front Panel Features:

Channel One: brite, deep, rock/jazz, high, mid, low, (with pull mid and gain boosts), (low control pulls for manual channel switch)

Channel Two: brite, deep, rock/jazz, high, mid, low, (with pull mid, and gain boosts),

Channel Three: Overdrive input control (sets amount and sensitivity of distortion), Overdrive Out (sets level when overdrive is activated). OD out control pulls for manual overdrive activation.

Master output section: Master volume (controls channels 2 and 3 only), accent, and reverb master.

Rear Panel Features:

IEC International standard power connector for detachable power cord.

Fuse holder. AC Power, Standby, Ground polarity, power amp “Response” switch (adjusts output stage sag at high volumes). 4, 8 16 ohm outputs, FX loop, send level control, send output jack, return level control return input jack, series/parallel switch, effects loop trim control (sets operating level of loop for pedal or line level devices).

Footswitch Jacks:

6-pin XLR connector for remote control of mid and gain boosts (for each channel) as well as channel selection (standard). ¼” footswitch jack for reverb disconnect. Artist footswitch (optional), permits, global mute, fx loop bypass, and reverb bypass.

Very high quality ¼” Cliff jacks are provided for the single guitar input and separate 4, 8 and 16 ohm outputs.

Features:

¾” solid wood cabinet with durable tolex covering.

Anodized aluminum chassis with long-lasting silk screened labeling on rear panel. Front panel is brushed aluminum and available in black or silver. Crème or black knobs are available. Heavy duty Cliff brand jacks. Solid metal shaft Alpha potentiometers. Ultra-long-life neon pilot lamp and heavy duty AC power, standby, and ground switches. Power stage features AC balance control, and separate bias controls for each power tube.

Specifications:

Head: 8" tall, 27.5" wide and 10.50" deep.

Combo: 20" tall, 27.5" wide and 11.00" deep.

Weight (Head):

50 Watt 40 lbs

100 Watt 45 lbs

150 Watt 50 lbs

Weight (Combo):

50 Watt 112 60 lbs

50 Watt 212 75 lbs

100 Watt 112 65 lbs

100 Watt 212 80 lbs

150 Watt 112 75 lbs

150 Watt 212 90 lbs

Tube compliment: 5 X 12AX7 preamp tubes,

2 X 6L6 power tubes (50 Watt)

4 X 6V6 (custom 50 version)

4 X 6L6 tubes (100 Watt version)

4 X 6550 (150 Watt version)

Power output: 50, 100 or 150 watts RMS into into 4, 8, or 16 ohms.

Input Impedance -1 Meg.

FX Loop:

Output impedance 1-K. Signal; level up to 3 volts p/p

Return impedance 100-K sensitivity from 250 mv to 3 volts p/p.

Fuchs Audio Technology combo amps and cabinets are now shipping standard with the new [Eminence Wizard™](#) 12" guitar driver. These new speakers are part of the new Red Coat line from Eminence, and are designed to emulate the sound of the classic G12H-30 Celestion speaker, known for being one of the most popular, tonally balanced drivers for guitar. It features an English-made cone, on an American made stamped basket, 56 oz magnet and 1.75" voice coil diameter.

The Wizard is 103db efficient, can handle 75 Watts each, with 150W peak. These speakers are very articulate, but with a hint of grit. Nice sustain and exceptionally good tight bottom.

The original Fuchs/Eminence FAT-S1 speaker is still available (as of 5/2005) at a slight upcharge. Contact your dealer for pricing.

2 Please read before powering up your TDS

Please see Panel Diagrams in next section 3 for assistance.

- 1) Inspect to make sure power & pre-amp tubes are intact & snugly seated in their sockets.
- 2) Make certain a speaker (load) is plugged into the correct speaker output jack on the back of the amplifier (4, 8 or 16 ohm). Failure to have a speaker connected to the amp will result in damage to the output tubes! Your TDS is supplied with 4, 8 and 16 ohm speaker outputs for various impedances, select the one closest to your speaker(s) impedance.
- 3) Reduce Front PANEL controls (MASTER, GAIN, INPUT, OUTPUT) to moderate levels (approx at 7-9 o'clock positions).
- 4) Install cable into footswitch, connecting into rear panel input marked FOOTSWITCH. (Footswitch uses an XLR jack)
- 5) Install instrument cable from guitar into front panel INPUT
- 6) Be sure both POWER and STANDBY switches (rear panel) are in DOWN position.
- 7) Install IEC power cord to TDS amplifier (AC POWER IN) and to AC power source.
- 8) POWER UP amplifier by: 1) flipping POWER switch UP. WAIT 30 seconds to 1 minute for tubes to heat up. 2) Flip STANDBY switch UP, amplifier is now fully operational
- 9) The Amplifier is now fully on and ready to use. Feel free to adjust all controls as you see fit.
- 10) Provide adequate and unimpeded ventilation.
- 11) Do not expose the unit to drips or splashes.
- 12) Do not to place liquids on the unit.
- 13) Properly ground the unit (i.e. make sure the outlet used is grounded, and ground is not defeated between the outlet and unit).

NOTE:

TO PUT AMP IN STANDBY MODE Simply flip STANDBY switch DOWN.

TO PUT AMP IN PLAY MODE Simply flip STANDBY switch UP.

TO TURN AMP OFF Flip STANDBY switch DOWN. We then recommend (as a kindness to the output tubes) waiting at least 1 minute before flipping POWER switch DOWN hence fully shutting the amp down.

3 Diagrams of FRONT & REAR Panels and FOOTSWITCHES

Front Panel



Rear Panel



Effects Loop



TDS Footswitch (6-way)



(Please note that external appearances of TDS footswitch may vary depending on production date. All functions/quality remain the same regardless)

4

Front Panel Controls and Their Functions (left to Right)



Controlling the 3-channel design of the TDS can best be described by viewing the “Left” 1/3 controls as “Clean channel-1” (separated by the green/red LED arrows on the front control panel), the remaining 2/3 controls (to the right of LED arrows) as channels 2-3. A few controls however interface between channels 1/2/3 as described below.

Input Jack:

This input is a 1/4" phone plug, designed for 1-Meg impedance, guitar-level signal. This input will readily accept pedals/effects without any loss in performance. The design of the TDS amplifier is quite flexible, so we first suggest exploring its performance without any effects or pedals initially.

Gain Control (Clean channel 1):

This control adjusts the overall volume of Clean channel-1 only. This is the only control adjusting Channel-1 volume.

Brite Switch (Clean channel 1):

The Brite switch operates on the gain control/and is active over about ½ of the input gain control range. From '0' to about midway, it provides a boost to highs, and the effect of the switch decreases beyond the halfway point on the gain control rotation.

Deep Switch (Clean channel 1):

The deep switch shifts the overall tonality of the amplifier, slightly increasing the low frequencies. This is often useful for single-coil guitars, which sometimes need a low-frequency boost.

Rock/Jazz Switch (Clean channel 1):

The Rock/Jazz switch alters the operation of the tone controls. The Rock position gives highest gain, as well as a more aggressive rock type equalization. In the jazz setting, the tone is a more neutral/smooth tone. All tone controls work in both modes, however their range and depth of operation is changed.

High Control (Clean channel 1):

The High control serves 2 functions: (IN)-it adjusts high frequency spectrum. (OUT) the High control engages the mid-boost. This shifts the range of the high control downward, to include more midrange. All tone controls still operate, however the tone will be fatter.

Mid Control (Clean channel 1):

The Mid control serves 2 functions: (IN) Acts to adjust mid frequencies. (OUT) engages the gain boost. This bypasses all tone controls and allows greater overdrive and gain, on both clean and overdrive modes. This can also fatten sound for Single coil pickups.

Low Control (Clean channel 1):

This control serves 2 functions: (IN) adjusts the low frequency spectrum of your TDS. Pulling this control OUT changes from channel-1 to channel 2/3 for sound. Pushing IN reverses changing back to Clean channel-1. To use the TDS footswitch function of channel switching this control must be pushed IN.

Gain Control (channels 2 & 3):

The gain control sets the input gain for Channels 2 & 3 primary clean preamplifier. The clean channel-2 acts as a preamplifier alone, during clean (non-overdrive) operation. When the amplifier is in overdrive mode (channel-3), the clean channel-2 functions as a preamp to the overdrive stage. All controls on the primary channel-2 remain operational during overdrive, allowing the overdrive tone to be controlled.

Brite/Deep/Rock Switches (channels 2 & 3):

Same basic operation as channel 1 description but exclusively for channels 2 & 3.

High, Mid (channels 2 & 3):

Same basic operation as channel 1 description but exclusively for channels 2 & 3.

Low Control (channels 2 & 3):

Same basic operation as channel 1 description but exclusively for channels 2 & 3. NOTE: This control does NOT function as channel switching.

Input/Output Overdrive Controls (channels 2 & 3):

The overdrive stage, as mentioned above is fed from the clean preamplifier. Two controls effect overdrive: (see below)

A) Overdrive Input: (Front panel) sets the amount of distortion content, by adjusting the drive between the two overdrive stages.

B) Overdrive Output: acts to balance the volume of the Overdrive channel with the clean channel.

NOTE: There are no "correct" Overdrive settings, finding the desired tone setting depends on the guitars/pickups used, as well as your own personal tastes. (Note: An internal trimmer pot, factory set at approx 1/3 rotation, sets the amount of signal fed from the clean channel into the overdrive stage's first tube. It also determines the type/quantity of overdrive required, and gain of the preamp tubes. This can be adjusted- please contact us prior to attempting this)

Master Volume (Channels 2 & 3):

The master volume adjusts the overall volume of the amp for channels 2 & 3 ONLY and works in conjunction with the Channel 2/3: GAIN, INPUT & OUTPUT controls for overall volume of the amplifier.

NOTE: For TDS 50/100 owners, the MASTER control serves to control the 50 or 100 watt output. IN is 100 watts, OUT is 50 watts.

Accent Control (channels 2 & 3):

The accent control works within the power amp section, reducing negative feedback at higher frequencies. It adds an edge to the overall amplifier tone. It's excellent for cutting through in a band or a recording mix. It can also allow greater ability to selectively make notes feed back and "sing".

Reverb Control (ALL channels):

The reverb control adjusts the level of desired reverb for ALL CHANNELS. This control does not entirely turn reverb on or off although by reducing this control to its minimum can in effect turn off perceptible reverb. To completely turn on/off reverb, use the optional "reverb on/off" footswitch available from your dealer.

LED Power light:

This light indicates if the amplifier is seeing AC power.

5 (A)-REAR Panel Controls, inputs/outputs, (B)-Effects Loop

(A)-REAR panel Controls/input/output jacks



AC power cord input:

Using the supplied 120vac power cord. Connect AC POWER IN on amplifier and to AC power source.

AC power Fuse:

This fuse protects the amplifier if any malfunction occurs. Use ONLY stock fuse rating as supplied by factory.

Power On/OFF switch:

Up is ON, DOWN is OFF

Standby switch:

UP is ON, DOWN places the amplifier in STANDBY

GROUND polarity switch:

Allows for best grounding by placing switch in one of 3 positions: UP, CENTER, DOWN.

NORMAL/SAG switch:

This switch allows for shaping the power supply of the amplifier for the desired overall level of "sag". UP is normal, DOWN (SAG) causes the power supply to sag quicker (like a tube rectifier) and causes the output stage of the amp to distort quicker, more like a vintage tube rectified amp would.

Speaker inputs (4,8,16-ohm): (You must have a speaker load inputted to the TDS before powering on).

Connect using a 1/4" phone plug to an outboard speaker cabinet. If you have a TDS Combo amplifier, the internal speaker is attached with a supplied wire 1/4" jack. Multiple speaker outputs are provided on your TDS (4, 8, 16-ohm). Connect your speaker to the jack that most closely matches your speaker(s) impedance.

Series/Parallel switch:

When in Series-amplifier must have an effect installed or amp will not produce sound. When in Parallel-amplifier will always produce sound. Parallel mixes effect signal with drive signal, which then remains in amplifier.

Return Trim switch:

Sets sensitivity & adjusts sensitivity of return input of the effects loop. It allows tailoring of signal of effect or rack device. If used in series mode, you then depend on outboard effect to mix wet/dry signal balance. Dry signal does not remain in amp.

Return adjustment control:

This allows overall volume adjustment of amp (to set unity gain), thus retaining same volume with/without effect). This control sets the level coming back from your effects, also a secondary means of adjusting return of effect signal. NOTE: The higher gain position is usually used for pedal level signals, and the lower level is for rack type effects. The series parallel switch controls whether the loop is "open" (series) or "closed" (parallel). In series mode the amplifier will produce no sound (except reverb tank output). This is because an effect must be plugged into both the send and return jacks.

Return 1/4" Input jack:

Connects to OUTPUT FROM your EFFECTS

Send 1/4" Input jack:

Connects to INPUT TO your EFFECTS.

Send adjustment control:

Adjusts signal level going to effect. Adjust send control so that effect receives maximum amount of signal before distorting.

Reverb FTSW input jack:

This input is for the ¼" cable jack from the optional Fuchs reverb on/off footswitch.

TDS Footswitch input jack:

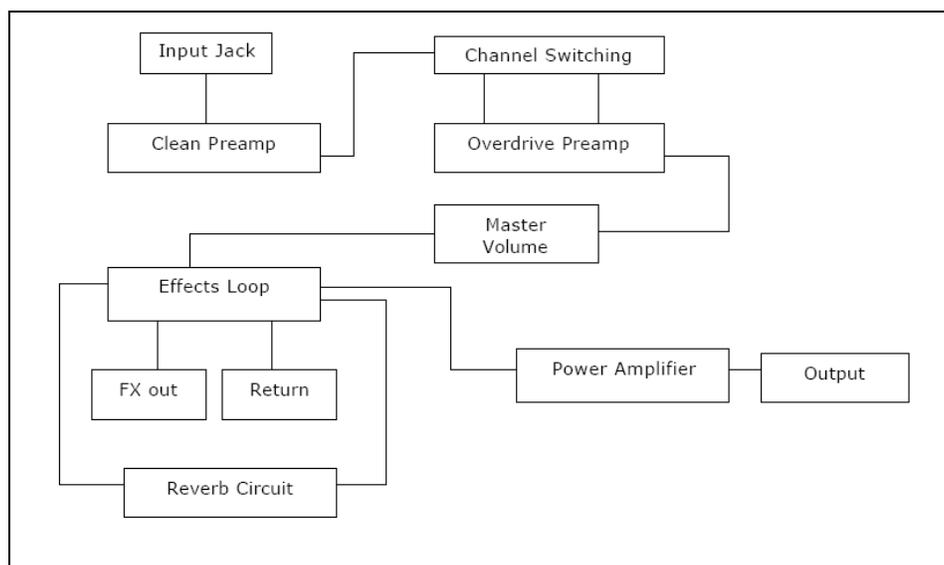
This input is for the supplied XLR jack/cable connected to the TDS footswitch.

(B)-Effects Loop**Using the Loop:**

When inserting a device like an equalizer, or perhaps a Sonic Maximizer (or similar processor), the loop should be set in series mode. The mix controls on the outboard device can be used to control all effects and the balance between clean and dirty effects. The main purpose of the Effects Loop is to match pedal or rack level devices to the amp correctly, not to achieve higher amounts of gain boost.

Side-Chaining Effects:

For maximum signal purity and sound quality, when using effects like digital reverbs and/or effects like an echo or tape delay, the loop can be used in parallel mode. In this case, the effects should be run fully "wet" (no non-processed signals sent through the effect). The send and returns of the loop are set for proper balance of clean/effect and the controls on the effect can be used to trim the tone. This method assures the clean (dry) non processed signal will remain in the amplifier, and not be degraded by the outboard effect.

Amplifier Block Diagram (regarding effects loop):

6 Using the TDS Footswitch

Your TDS is provided with a unique 6-button footswitch allowing amazing control over your 3 channel TDS. As a separate option a “reverb on/off” footswitch is also available.

TDS-6-Way footswitch:

Connect this footswitch to the amp with supplied XLR cable. The XLR Input jack for this cable is located on the rear panel of your TDS. This 6-function footswitch provides the following switching functions (from left to right):

Button-1: Channel-1 Switches Mid boost on/off

Button-2: Channel-1 Switches Gain boost on/off

Button-3: Switches from channel 1 to 2

Button-4: Switches from channel 2 to 3. Channel 3 is overdrive channel.

Button-5: Switches Mid boost on/off channel 2/3.

Button-6: Switches Gain boost on/off for Channel 3.

The TDS footswitch requires ALL front panel push/pull controls be pushed IN (off) for the footswitch to operate these functions remotely. When an LED on the footswitch is lit, that function is ON.

NOTE: The TDS amp & all controls function normally without TDS footswitch connected.



7 Biasing TDS power tubes and other technical info

Biasing and Internal Adjustments:

Part of chassis and circuit board is shown below with the chassis sitting on its transformers, and front panel facing you. There are exposed high-voltages in this chassis, even with the amplifier shut-off! If you are not familiar with tube amplifiers and/or high voltages, do not attempt to remove the chassis from its cabinet or to attempt to service this amplifier. Refer servicing to the factory or to someone with experience servicing these types of amplifiers.

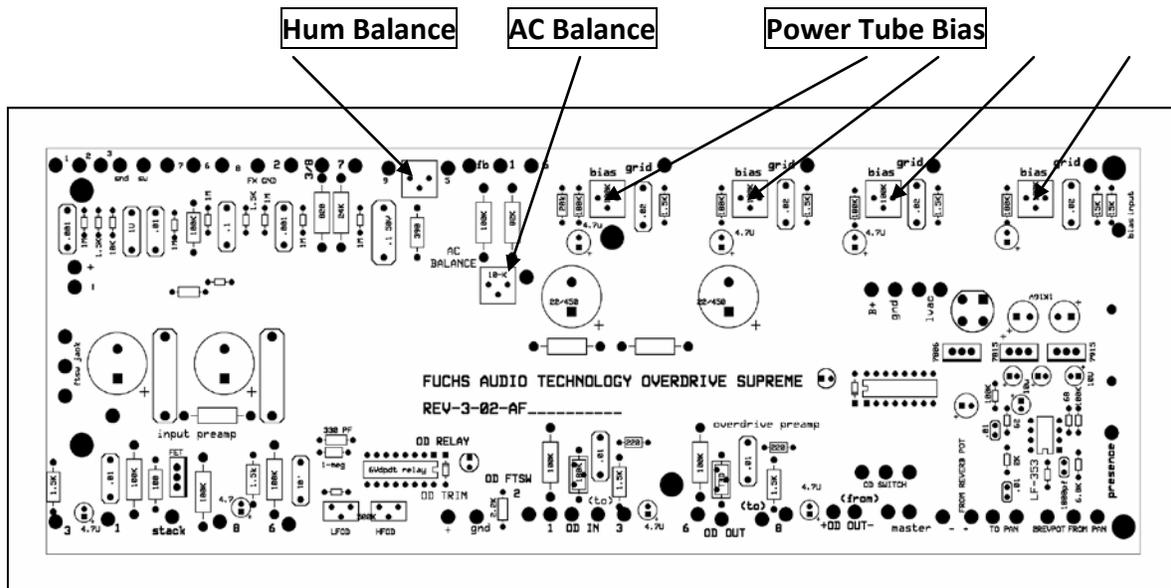
High Internal voltages inside this amplifier can cause harm or Death!

AC Balance:

This is factory set for linear clipping at maximum power output, and is set with an oscilloscope for proper adjustment.

Bias Controls:

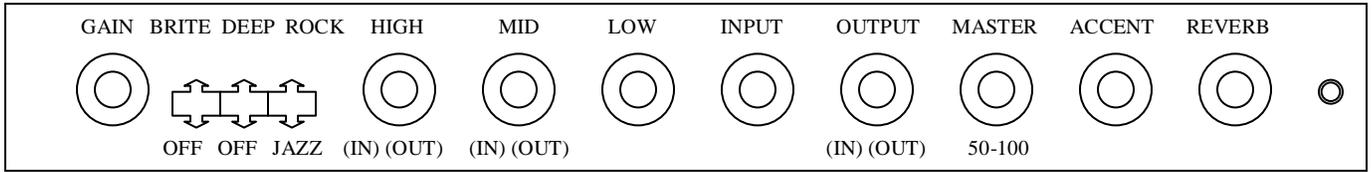
Each tube is factory set for .030 Volts (30 millivolts) measured on the one-ohm cathode resistors connected to each power tube pin 8. This should be set with the amp cold, then reset after the amp has run for about an hour. Use a reliable digital volt meter for these settings.



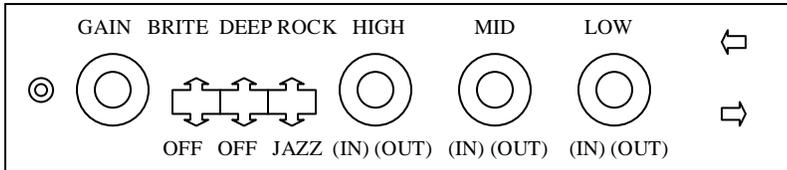
DISCLAIMER: There are exposed Internal high-voltages in this amplifier. Do not attempt to service, repair or conduct tube biasing unless you are qualified to do so. Please contact Fuchs Audio beforehand with questions in this regard. Fuchs Audio takes no responsibility or shall be held liable for any personal harm caused or damage to this amplifier as a result of unauthorized service, repair or internal adjustments made to this amplifier.

8 TDS Sample Setting diagrams & notes (make copies & use!)

Channels 2 & 3 (below)

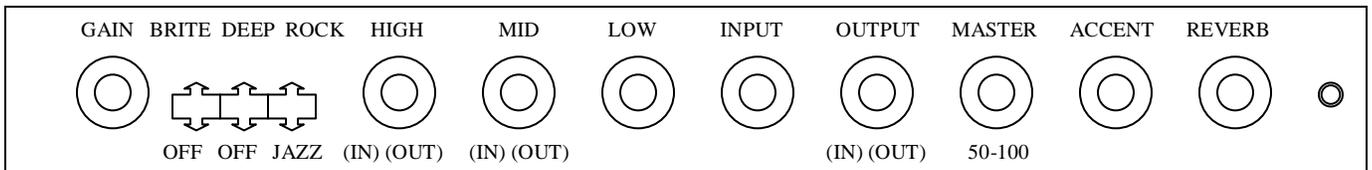


Clean Channel-1 (below)

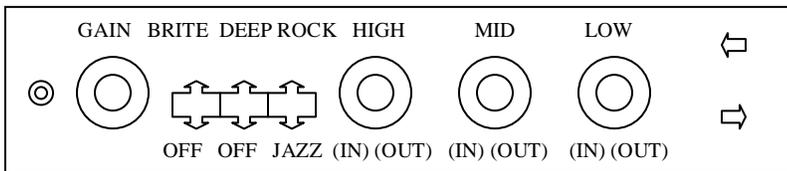


NOTES:

Channels 2 & 3 (below)



Clean Channel-1 (below)



NOTES:



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9 Warranty Information

The Fuchs Audio Technology-TDS Warranty

Fuchs Audio Technology® guarantees our products to be free from defective workmanship or material failure for a *period of FIVE years (tubes excluded) from date of new purchase to the original purchaser*. This does not apply to Fuchs amplifiers that have been tampered with, damaged by shipping carriers, reverse engineered, or modified. This warranty is void if the amplifier is used with power attenuator type devices (Power Soaks, Air Brakes, Hot Plates etc.). Your warranty form/information must be returned to Fuchs Audio Technology® within 30 days of purchase, or your warranty will not be in effect. Fuchs Audio Technology® reserves the right to suspend or terminate the above warranty at our sole discretion, should damage from any of the above limitations and or exclusions be detected upon examination.

Keep the information on this page for your records.
Please mail-in warranty form on next page

FUCHS MODEL: _____ (TDS Amplifier)

SERIAL NUMBER: _____

OPTIONS INCLUDED: _____

PRODUCTION DATE: ____ / ____ / ____

TESTED BY: _____ Fuchs Audio Technology®

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WARRANTY REGISTRATION FORM

This completed form must be returned to Fuchs Audio Technology within 30 days of purchase along with a copy of your receipt from your authorized dealer.

Please fill in all requested information on this form so we may register you for future warranty repairs or future upgrades, should they become available.

Purchasers Name: _____

Address: _____

City: _____ State: _____ Zip: _____ Country: _____

Phone Number: _____ E-Mail address: _____

Model: _____ Serial Number: _____

Date of Purchase: _____

Dealer Name: _____

Comments:

Please return this form to:

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