FUCHS
AUDIO TECHNOLOGY
®


# *FUCHS ODH© HYBRID GUITAR AMPLIFIER*

**V 2.0**

# Operations Manual

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**Fuchs ODH Amp manual Rev. 2.0 09-2024-AMF**

**A Note from Andy,**

First of all, *thank you* for purchasing the new Fuchs ODH hybrid amp !

As an aging guitar player, close to ten years ago, I began a quest to bring tube ODS tones to the lightest and most compact platform possible. The ODH is the result of years of tweaking my own gig rig to make it light and still sound up to the tones of my ODS amps.

Each Fuchs product is precision handmade by me and my staff at Fuchs Audio and 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 all our products, and we're sure you'll feel the same way.

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

Feel free to call or e-mail us (tech support@fuchsaudio.com) with comments & questions about your amp, or just to find out what's new here at Fuchs Audio.

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

Sincerely,

Andy Fuchs
President

**Fuchs Audio Technology®**

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# Instructions for Fuchs ODH Amp:

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## 1 Introduction to Fuchs Audio Technology Amplifiers

**What makes our products unique?**

The recent proliferation of "Boutique" guitar amplifiers, allows guitarists to recognize what audiophiles have known for years; properly designed circuits can offer the finest musicality, detail, and sensitivity to playing subtleties of any type amplifier. Anyone who's enjoyed the sweet, responsive character of a well-built boutique amplifier realizes you can't model or computer simulate the "organic" qualities, no matter how hard you try. It's like enjoying fresh food or food that's been frozen. Something gets lost in the translation.

**We feel our designs go a few steps beyond those of other manufacturers!**

In addition to refining our circuit designs and operating points with computer "Spice" modeling, we also spend countless hours tuning our circuits through careful parts selection and refining the internal layout of our products. Details like single-point star grounding of all internal circuits, premium audiophile grade power and output transformers, high speed switching diode power supplies, regulated and

## 2 Please read before powering up your amp

**Please see Panel Diagrams in next section 3 for assistance.**

1) Make certain a speaker (load) is plugged into the speaker jacks on the back of the amplifier. The amp will drive 2.65 (8 and 4 in parallel, for nearly 500 watts), 4 ohms for 300 watts, and 8 ohms for about 150 watts.

2) Reduce all front PANEL controls (MASTER, GAIN) to moderate levels (approx at 7-9 o'clock positions). Set tone controls to 12.00 positions.

3) Install instrument cable from guitar into front panel INPUT

4) Put mute switch in mute position.

**5)** Install power cord to amplifier (AC POWER IN) and to AC power source. NOTE: **The Fuchs ODH amps are universal AC power devices, which means they will work anywhere in the world and automatically select the proper line voltage automatically. 100 volts trough 250 volts AC.**

6) POWER UP amplifier by: 1) flipping rear panel POWER rocker switch. These amps have a 30 second mute at turn on to allow the tubes to stabilize. The mute switch is overridden while the amp mute circuit is in mute mode. The solid state models will play immediately, so make sure your levels are low initially.

7) The Amplifier is now fully on and ready to use. Feel free to adjust all controls as you see fit. Please note that there is a 40 second turn-on delay which mutes audio until the tubes warm up.

**TO PUT AMP IN MUTE MODE**- Simply flip the MUTE switch into mute position.

**TO PUT AMP IN PLAY MODE**- Simply flip the MUTE switch to on position.

**TO TURN AMP OFF** Flip the mute switch to mute mode, and switch off the AC power.

**Please Note:** The Fuchs ODH tube amp uses two premium selected 12AX7 tubes in the clean and dirty channels. The amp uses a 6AL5 dual diode tube as a tube compressor. NEVER remove the tubes during operation and do not apply power the until without tubes in place. This can cause damage to power supply components in the amp which are not field serviceable. These tubes should last many years without replacement. Should the amp become noisy, or lose gain or sound, they should be replaced with premium selected preamp tubes.

# 3 Rear panel details.


**Please note:** There are two LED's in the amp on the opposite side of the chassis from the fan, which can be seen through the vent slots. The green is the normal light and the red indicates something amiss. If the amp shuts down from too low a speaker impedance, a shorted speaker line, a thermal overload or other failure the red light will illuminate. In this case, shut amp off and wait a minute or two and try again. Disconnect speakers to determine if the failure is coming from something external to the amp.

# 4 Front Panel Controls and Their Functions

**Input Jack:**
Input jack 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 our ODH amps are quite flexible, so we first suggest exploring its performance without any effects or pedals initially.

**Input Gain Control:**
The gain control sets the input gain for the amplifier. The gain control sets the preamp gain. Lower settings for active pickups, higher settings for passive pickups. Depending on the instrument, running the gain control high and master volume low can give you distortion (whether you desire that is up to you). Running the gain low and master high will result in the maximum cleanest signal from the a mp.

**High Control:**
The High control boosts and cuts high frequencies. The high control operation is shifted down into the midrange by the two-position mid boost switch. Center position is "normal" and the two additional positions offer two different mid boosts at different frequencies, allowing you to tailor the tone to your goal and guitars, speakers, etc.

**Mid Controls:**
The Active Mid control cuts mid frequencies.

**Low Control:**
This control adjusts the low spectrum of the amp. It's a boost cut style circuit.

The tone stack is a modified James style stack.

**Reverb level control:** The reverb control sets the reverb level of the amp.

**Accent control:** The accent trimmer (often called presence) sets the highs into the power amp. It can be used to brighten a dull speaker or make up for a dull room acoustic. ***This is a boost-only circuit***, so zero means NO highs added to signal.

**Depth control:** The depth trimmer sets the lows into the power amp. It can be fill in the low end of a lean speaker or to warm up your overall low end. ***This is a boost-only circuit***, so zero means NO lows added to signal.

**Overdrive controls:** OD In control adjusts how much overdrive saturation you get. Note that the input gain control sets the clean volume of the amp (also controlled by the master volume), *but it also controls the signal into the overdrive*. OD Out, sets the overdrive level (relative to the clean channel, often called the ratio control), and pulling it gives you manual overdrive operation without footswitch. The overdrive tone control is a high cut control on the overdrive channel only, which allows matching the tonalities between the clean and dirty channels.

**Internal tube limiter:** The amp features a preset, internal tube limiter which uses a 6AL5 tube as a limiter, who's threshold is set to limit the input to the ICE power module. This ensures a tube type overdrive, rather than the aggressive overdrive of digital clipping. By running the master high, you do not engage this limiter at all. As the master is run lower, and the input channel levels (clean and dirty) are increased, you will begin to hear the effect of the tube limiter and can achieve a great tube overdrive at low levels. As you push the input levels up and master down, you get the feel of a true tube amp "holding back" against your playing and picking.

## 4 Internal adjustments

The following picture shows the internal trimmers. Be forewarned that there are over 300 volts available on this PC board, as well as potentially lethal voltages on rear amplifier module board. Adjust the trimmers, period. Use a long, preferably insulated screwdriver.

There are three internal adjustments: **OD gain** (which controls how much of the clean channel enters the overdrive stage, **HFOD** (how much high frequency information goes into the overdrive channel). This is based on player preference, the type of guitar, how hard you pick etc. Normally the OD trimmer is about 20 to 30% above the lowest gain setting. The HFOD is about 60% of rotation. You may wish to adjust to taste, especially depending on how high you set the input gain of the clean channel, whether you use humbuckers or single coils etc.

**Reverb decay** (or dwell). This adjusts how quickly the signal dies off in the reverb "chamber". The best way to hear that is to strike a short percussive note or chord or sound (simply tapping the strings on a guitar and damping them) to hear how long a decay you have. Normally, the decay is set to 50%, which is a good approximation of a reverb pan.

## 5 (A)-REAR Panel

**AC power cord input:**
Using the supplied power cord. Connect AC POWER IN on amplifier and to AC power source. Please confirm your line voltage matches that of the amplifier!!!

**AC power Fuse:**
This fuse protects the amplifier if any malfunction occurs. Use ONLY stock fuse rating as supplied by factory. If this fuse blows more than once, there may be an issue with the amp requiring service. There are internal factory NON FIELD REPLACEABLE fuses. If these fuses fail, return the amp for service.

**Power On/OFF rocker switch:** Turns AC power on and off. All models are universal AC configured, so the amp can be plugged-in anywhere in the world and automatically set the proper AC power input voltage.

**6** **Effects Loop:** The front panel effects loop is a series only loop, designed for line level signals. Use quality shielded cables (audio cables not speaker wires) and use line level effects for optimal performance.

**7** **The Line output: The line output is designed to drive additional amplifiers and/or recording purposes. It is low impedance and buffered.**

**The DI output** is an electronically buffered ¼" output feeding another amp, or a recording application. There are three switch positions which affect it's operation: One side mutes the power amp, while the other side mutes the line out. The amp can be operated without a speaker, but muting the signal to the amp is suggested.

**8** Footswitch jack (marked F/S): The dual LED footswitch we provide operates on a TRS (tip, ring sleeve) wire. The OD output control is for manual overdrive without the footswitch. When the amp is cold, the front panel LED is Red, showing the mute status as activated. After warm up the LED turns green, showing it is ready for play. When you switch channels the LED switches to blue in overdrive.

**DISCLAIMER:** There are exposed Internal dangerous high-voltages in this amplifier. Do not attempt to service, repair you are not 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.

**WARNINGS:** DO NOT operate this amp without tubes in it. It can and will damage components in the amp and is not covered by warranty. DO NOT change tubes while the amp is on. It is recommended that both preamp tubes (12AX7) be the same brand, due to the DC filament wiring. Do not operate this amp with the cover removed. Do not obstruct the ventilation openings or fan opening at any time due to excess heat and/or fire hazard.
There are hazardous (and potentially lethal) voltages present in this amp on both the preamp and power amp boards. Exercise common sense when opening the amp for any reason.

Power specifications:

ODH

• 300W at 1% THD+N, 4Ohm

• 360W at 0.1% THD+N 4Ohm • 380W at 10% THD+N, 4Ohm • 450W at 1% THD+N, 2.7Ohm

# 8 Warranty Information

## The Fuchs Audio Technology Warranty

Fuchs Audio Technology® guarantees our products to be free from defective workmanship or material failure for a *period of three years 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** _____

**SERIAL NUMBER** _____

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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:
_____
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Please return this form to:

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