



True to the Music

# AC • DRIVER™

Acoustic Instrument Preamp



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# **TONEBONE AC-DRIVER**

## **ACOUSTIC INSTRUMENT PREAMP**

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Thank you for purchasing the AC-Driver™, an acoustic instrument preamp designed to provide you with complete control over your tone on stage.

While the AC-Driver is designed to be easy to use, we recommend taking a few minutes to review this short manual to familiarize yourself with the various features available. Should you find yourself with any questions not answered within this user guide, please visit [www.radialeng.com](http://www.radialeng.com) for a list of frequently asked questions and answers. If you still find yourself in need of more information, drop us a line at [support@radialeng.com](mailto:support@radialeng.com) and we will do our best to respond promptly.

## FEATURES



- 1. INPUT** –  $\frac{1}{4}$ " jack used to connect your instrument to the AC-Driver.
- 2. LEVEL** – Controls the output level of both the XLR and the  $\frac{1}{4}$ " outputs.
- 3. NOTCH** – Sets the center frequency for the notch filter. Used to eliminate feedback.
- 4. NOTCH Q** – 3-position switch bypasses the notch filter or selects between a normal or extra-deep notch. Works in conjunction with the notch frequency control.
- 5. 180° POLARITY REVERSE** – Used to reduce on-stage feedback by reversing the polarity of the XLR output.
- 6. LOW CUT** – Variable filter rolls off excessive low frequencies and controls bass resonance.
- 7. OUTPUT** –  $\frac{1}{4}$ " post-eq output used to feed an on-stage amplifier.
- 8. MUTE SWITCH AND LED** – Footswitch turns off all outputs except the tuner out. Used for quiet on-stage tuning.

## FEATURES



9. **TUNER** – Always-on buffered output is used with the mute footswitch for quiet on-stage tuning.
10. **BALANCED OUTPUT** – XLR line level output connects directly to a powered PA speaker or console.
11. **LIFT** – Ground lift switch disconnects pin-1 at the XLR output to remove buzz and hum.
12. **9VDC** – Connection for 9-12 volt DC (center pin negative) power supply.
13. **14-GAUGE STEEL** – I-Beam construction prevents the circuit board from being torqued which could lead to part failure.
14. **CONNECTORS** – Glass-filled nylon XLR connector with large nickel-silver pin contacts. Tougher than steel.
15. **CIRCUIT BOARD** – Double-sided military spec for greater durability and full ground plane to reduce radio frequency interference.

## OVERVIEW

The AC-Driver is a studio quality preamp built into a pedal format for acoustic instruments, designed to provide you with incredible sound along with the ability to control your levels and eliminate feedback on stage. Unlike a typical DI, you can connect the output of the AC-Driver directly to a powered speaker and control the level from on stage, making it ideal for solo performances where you may not have the luxury of a sound engineer. Additionally, you can use the notch and 180° controls to help eliminate feedback that can be all too common with amplified acoustic instruments, and a mute footswitch gives you the ability to silently tune on stage or switch between instruments without noise. Combine all that with the durability of a military-grade circuit board and a 14-gauge steel chassis, and you have a reliable and versatile acoustic instrument preamp that will ensure the best possible tone for your next performance.



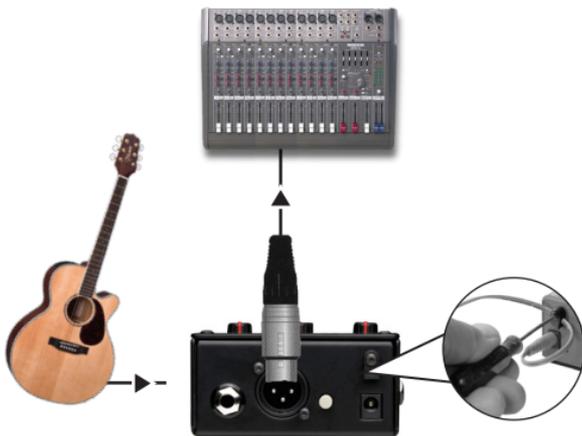
## MAKING CONNECTIONS

Before connecting the AC-Driver, ensure that you've turned down the volume or muted any channels on the mixer, powered speakers or guitar amps that you'll be connecting to. This will prevent any plug-in transients from damaging components or causing loud pops or clicks in your system.

As the AC-Driver has no power switch, the moment you connect a 9V power supply the POWER LED will illuminate, letting you know that the pedal is ready to use. The AC-Driver uses a typical 9V Boss®-style power supply (not included), and requires a minimum of 40mA of current with a center-pin negative connector.

Plug your guitar into the AC-Driver INPUT using a standard ¼" coaxial guitar cable, and connect the OUTPUT to your stage amp (if using). The XLR output of the AC-Driver is a balanced line designed to feed the line level input of a mixing console or a powered PA speaker.

Should you encounter buzz or hum through the PA or your powered speaker, simply engage the LIFT switch next to the XLR output. This disconnects pin-1 on the balanced output, which breaks up ground loops that can occur between two powered devices.



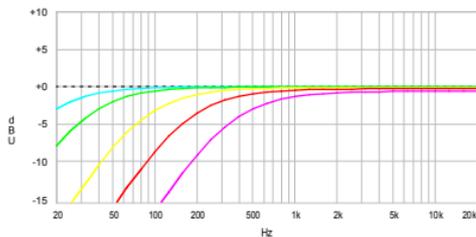
## SETTING LEVELS

If using a stage amplifier, start with the amp turned to a setting that you would typically use on stage if your instrument were directly connected to the amp. Slowly turn up the level on the AC-Driver from its minimum setting until you reach the desired level through the PA system, after which you can make minor adjustments on your stage amp until you have the desired balance between it and the PA. Should you need to make adjustments during the performance, keep in mind that the level control on the AC-Driver will affect both the PA and your stage amp simultaneously.



## THE LOW CUT FILTER

This variable EQ control rolls off excessive low frequencies, which eliminates bass resonance that can occur when low frequencies are generated by the PA system. When set fully counter-clockwise (7 o'clock), the Low Cut has no effect on your signal. As you turn the dial clockwise, it will begin to roll off low-end frequencies — up to around 300Hz.



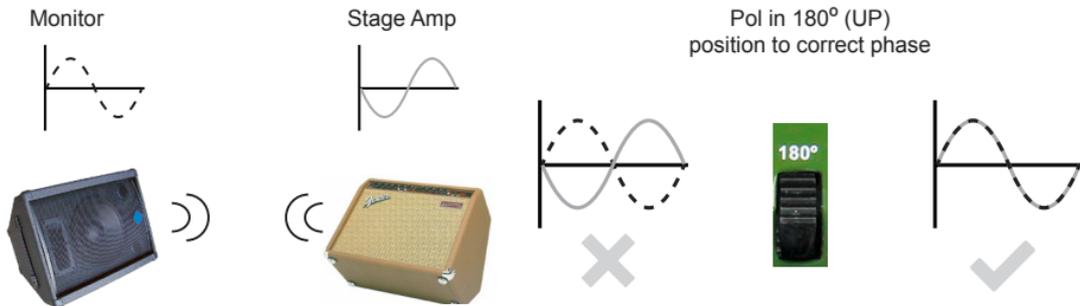
Start by setting the filter control completely counter-clockwise. Slowly turn it clockwise until you notice the bass roll off, then turn back a bit and you are set. The filter position is usually set in proportion to the size of the instrument, whereby larger instruments such as contrabass will be set with more bass, while a cello or violin will have less.



## FIGHTING FEEDBACK

One of the most challenging aspects of using acoustic instruments on stage is managing feedback. This is particularly difficult when sharing the stage with electric guitars and drums, as the acoustic instrument needs to be amplified even further. The AC-Driver has two features that help eliminate feedback on stage; the 180° polarity reverse switch, and the Notch Filter.

As you bring up the level of an acoustic instrument on stage, sound waves from the PA, monitors, and wall boundaries can combine at certain frequencies to create hot-spots known as room modes which can cause feedback. The 180° polarity reverse comes to the rescue by enabling you to reverse the electrical phase which in turn can move the room mode out of the way. If you encounter feedback, try engaging the 180° switch by moving it to the up position.



## NOTCH FILTER

Should the 180° switch not do the trick, the AC-Driver is also equipped with a variable Notch Filter to surgically eliminate specific frequencies that are causing feedback, without affecting the overall tone of the instrument. This feature has a three-position switch that allows you to select between OFF, NORMAL, and DEEP. When set to OFF, the Notch Filter is removed from the signal path entirely. The NORMAL setting introduces a -8dB notch, while the DEEP setting introduces a -15dB notch into the signal path. We recommend you start with this switch set to DEEP, which will have the most noticeable effect when reducing feedback. Slowly sweep the Notch control back and forth to try the notch filter at different frequencies. When you've found the position that is best at removing feedback, switch to the NORMAL setting to see if it also eliminates the feedback without removing as much frequency content from your instrument.



## TUNING & CHANGING INSTRUMENTS

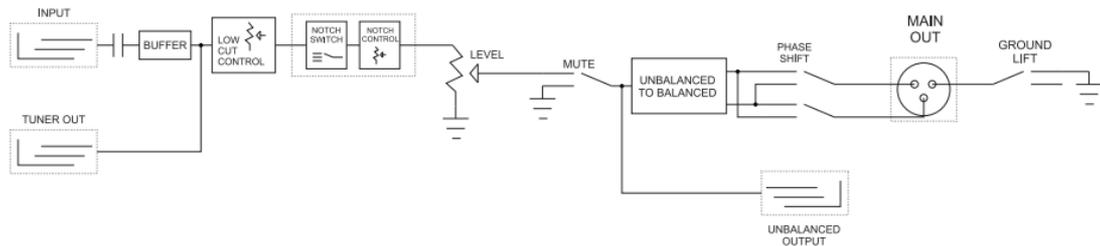
The Mute footswitch on the AC-Driver allows you to cut the signal to your stage amp and the PA system, while leaving the Tuner output active. This makes it ideal for silent tuning on-stage, or to swap instruments without causing loud pops or clicks to occur. Simply connect your tuner using a standard 1/4" guitar cable to the TUNER OUT, and activate the mute footswitch when you need to tune — a red LED will illuminate to let you know that the outputs of the AC-Driver are muted.



**SPECIFICATIONS\***

Audio Circuit Type:	Class-A FET
Noise Floor:	-97dBu
Dynamic Range:	+107dBu
Maximum Input:	+10dBu
Input Impedance:	10M $\Omega$
Output Impedance:	4.4k $\Omega$
Ground Lift:	XLR Output
Low Cut Frequency Range:	10Hz-300Hz
Notch Frequency Range:	60Hz-500Hz
Power:	40mA, 9VDC (center pin negative)
Construction:	14-gauge steel chassis & outer shell
Size (LxWxD):	4.75" x 3.75" x 1.75" (120 x 95 x 44mm)
Weight:	1.4lbs (635 grams)
Warranty:	Radial 3-year, transferable

\* Subject to change without notice.

**BLOCK DIAGRAM\***


\* Subject to change without notice.

## RADIAL ENGINEERING 3 YEAR TRANSFERABLE WARRANTY

RADIAL ENGINEERING LTD. ("Radial") warrants this product to be free from defects in material and workmanship and will remedy any such defects free of charge according to the terms of this warranty. Radial will repair or replace (at its option) any defective component(s) of this product (excluding finish and wear and tear on components under normal use) for a period of three (3) years from the original date of purchase. In the event that a particular product is no longer available, Radial reserves the right to replace the product with a similar product of equal or greater value. In the unlikely event that a defect is uncovered, please call 604-942-1001 or email [service@radialeng.com](mailto:service@radialeng.com) to obtain an RA number (Return Authorization number) before the 3 year warranty period expires. The product must be returned prepaid in the original shipping container (or equivalent) to Radial or to an authorized Radial repair center and you must assume the risk of loss or damage. A copy of the original invoice showing date of purchase and the dealer name must accompany any request for work to be performed under this limited and transferable warranty. This warranty shall not apply if the product has been damaged due to abuse, misuse, misapplication, accident or as a result of service or modification by any other than an authorized Radial repair center.

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