

Quilter™

Steelaire

Pedal Steel Amplification



Owner's Manual

© 2014 Quilter Labs, LLC. All Rights Reserved

Quilter and the Quilter logo are trademarks of Quilter Laboratories, LLC

IMPORTANT SAFETY INSTRUCTIONS

- 1 – Read and keep these instructions.
- 2 – Heed all warnings and follow all instructions.
- 3 – **WARNING:** To prevent fire or electric shock, do not expose this equipment to rain or moisture. Do not use this apparatus near water.
- 4 – Clean only with a dry cloth.
- 5 – Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 6 – Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding plug has two blades and a grounding prong. The wide blade or third prong are provided for your safety. If the provided plug does not fit your outlet, consult an electrician for the replacement of the obsolete outlet.
- 7 – Protect the power cord from being walked on or pinched, particularly plugs, convenience receptacles, and the point where they exit from the apparatus.
- 8 – Unplug the apparatus during lightning storms or when unused for long periods of time.
- 9 – The appliance coupler (or attachment plug) is the mains disconnect device and should remain readily accessible when amplifier is in use.
- 10 – Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- 11 – This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- 12 – Changes or modifications made by the user that are not expressly approved by the manufacturer may void your authority to operate the amplifier.

Explanation of symbols



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous" voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to humans.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in this manual.



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.



WARNING: To prevent fire or electric shock, do not expose this equipment to rain or moisture.

The Quilter Steelaire Combo Amplifier

New Tools for a New Generation

The Steelaire combines a high output 15-inch speaker and a full 200 watts power plant to provide new levels of richness and clarity for the steel guitar player and all musicians desiring a big, clean sound. The Steelaire is highly adjustable, allowing the musician to dial in a highly personal sound. Please consult this manual to obtain the best results.

Six settings may be remote controlled using an optional Quilter footswitch or clip-on leg switch.

Our goal at Quilter Labs is to use the latest power technology to maximize warmth and dynamics without the weight and drawbacks of classic tube technology.

No shortcuts have been taken in the design and manufacturing. Every component and circuit is selected solely on the basis of superior results. Where advanced design or premium components significantly boost performance, we have made the investment. Costs are kept as low as possible using a well-managed high volume production process.

The result is a serious professional tool with performance that meets or beats handmade amps costing and weighing several times as much.

The Steelaire delivers a sweet smooth tone, with excellent midrange clarity and a vivid high end. In contrast to our more British-type guitar amps, the overall effect is a very American sound -- big and smooth with lots of power.

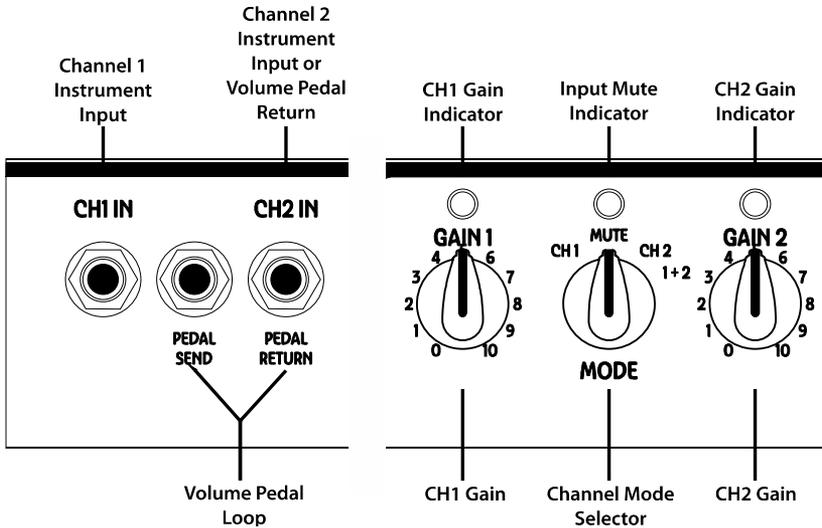
We hope you enjoy your new amplifier. May it give you many years of flawless service and provide a source of inspiration and creativity.

Carton Contents:

- 1 Quilter Steelaire Amplifier set
- 1 IEC AC Power Cord
- 9V power cord set for effects loop pedals
- 1 Dust Cover
- 1 Owner's Manual

AMPLIFIER INPUT SECTION AND MODE SET-UP

The Steelaire supports active or passive steel guitar volume pedals. An adjustable gain boost may be preset for one instrument. The amp may also be used with two different instruments, either separately or at the same time. LEDs above each channel indicate the status of the MODE switch. 9V power at the effects loop supports “hard wiring” of delay and chorus pedal effects.



CH1 INPUT:

Set **MODE** to **CH 1**. Use **GAIN 1** to control volume.

- TIP: **CH 1** also flows into **CH 2** unless a separate signal is connected to CH 2. Therefore **GAIN 2** can be used as an alternate gain preset for CH 1, selected by the MODE switch or the remote footswitch.
- TIP: **MODE 1+2** connects both GAIN controls in series, for extra volume.

CH 2 INPUT:

Set **MODE** to CH 2. Use **GAIN 2** to control volume.

- TIP: Plugging into CH 2 disconnects the feed from CH 1. This allows the MODE switch to select between two instruments, each with their own gain setting.
- TIP: **MODE 1+2** connects both instruments simultaneously.

POPULAR AMPLIFIER SETUPS

STEEL GUITAR, ACTIVE VOLUME PEDAL:

Connect between guitar and **CH 1**, and set **MODE** to **CH 1**. Set volume with **GAIN 1**. (CH 2 remains available for a second instrument).

- TIP: GAIN 1 will normally remain clean up to about “8”. Some overdrive may occur on “10” (see LIMITER section below).
- TIP: GAIN 2 can be preset for a second volume level, and selected either with the MODE switch, or the footswitch.
- TIP: Selecting MODE 1+2 places both GAINS in series, allowing for large amounts of overdrive (see MASTER VOLUME section, P6).

STEEL GUITAR, PASSIVE VOLUME PEDAL:

The original method of inserting a passive pedal between guitar and CH 1 is easy, but slightly reduces high frequency response. Active pedals include a buffer to preserve high frequencies, but require a power supply.

USE CH 1 TO BUFFER A PASSIVE PEDAL:

Connect the guitar directly to **CH1 IN**, connect **PEDAL SEND** to the pedal’s input, and connect the pedal’s output to **CH2 IN (Pedal Return)**. Set **MODE** to **CH 2**. Use **GAIN 2** to set volume.

- TIP: GAIN 1 is inactive when using CH 2 MODE.
- TIP: To obtain an adjustable volume boost in this configuration, select MODE 1+2, use GAIN 1 to set “normal” volume and set GAIN 2 for the desired “boosted” volume. Control GAIN2 with the footswitch.

USING A SECOND INSTRUMENT:

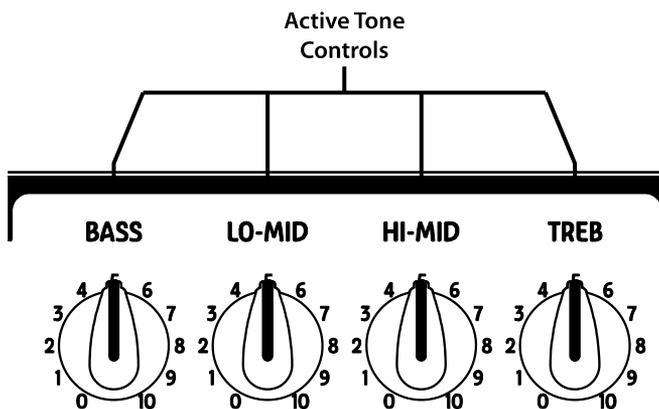
Connect the steel guitar (or other first instrument) to **CH1 IN**, and set its volume with **GAIN 1**. Select with the MODE switch as usual.

Connect the second instrument to **CH2 IN**, and use **GAIN 2** to set volume. Select using the MODE switch as desired.

- TIP: The **MUTE** MODE allows cables to be unplugged without noises.
- TIP: The footswitch **BOOST** button adds a treble boost to brighten up the alternate instrument if desired. Great for 6-string guitars!
- TIP: **MODE 1+2** allows both instruments to be played at once.

TONE CONTROLS: “BASS, BODY, BARK, and BITE”

Four active EQ controls support a wide range of tone adjustments. The amplifier has a naturally bright, clean sound with “flat” EQ settings on “5”, but you should freely use the controls to get the sound you desire.



BASS controls the “weight” of the sound (50-150Hz). Many steel guitar players increase the bass somewhat to add fullness and compensate for the treble pickups used in typical pedal steels. The Steelaire has the headroom and speaker capacity to accept a substantial bass boost without “bottoming out”.

LO-MID (“BODY”) controls the “chesty” register (500Hz). Many classic amps “scooped out” this frequency range to reduce stress and “clutter” while keeping bass and treble frequencies. The Steelaire speaker handles these rich low-mid frequencies with clarity and definition.

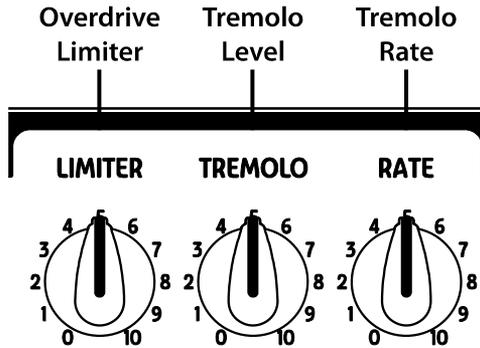
HI-MID (“BARK”) controls the “presence” register (2kHz). Boosting these frequencies may increase “cut-thru” to the point of pain; reductions can temper an undesirably “forward” or clattery tone.

TREB (“BITE”) controls the “sparkle” frequencies (5kHz), adding chime and sizzle, or taking the edge off when reduced.

- TIP: Experiment with the EQ controls while playing a full-range chord, then play moving tones to confirm the effect.

LIMITER AND TREMOLO SECTION

The **LIMITER** may be set up to prevent overdrive distortion and increase sustain. The **TREMOLO** has a widely adjustable depth and rate. Both effects are controlled by respective footswitch buttons.



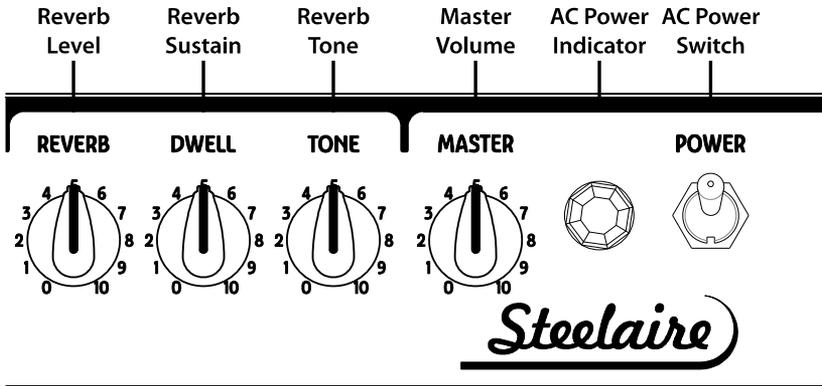
SETTING UP THE LIMITER

The **LIMITER** acts as a dynamic volume control that intervenes only if the signal level exceeds a certain point. It is calibrated so that 50% will prevent overdrive in most cases. To establish this level and hear the effect, first turn the **MASTER** down to a very low level for safe testing. Then, increase the input **GAIN** until you hear distortion on loud peaks. Then increase the **LIMITER** and note how it reduces only the loud peaks to prevent distortion.

- TIP: Setting **LIMITER** at "2" or "3" will allow some overdrive, for those who want a little bit of grit or a "rolling boil" for lead passages.
- TIP: Setting the **LIMITER** higher than "5" will cause it to intervene sooner, allowing sustain to occur well below the point of overload.
- TIP: Once you have experimentally determined the "sweet spot" combination of **GAIN** and **LIMITER**, then use the **MASTER** to set your overall volume as desired. If you want maximum clean headroom, and only want the **LIMITER** to prevent unintentional distortion, leave it on "5" and set the **MASTER** at "10". You will rarely if ever play loud enough to trigger limiting, but it will be there if needed.

REVERB and MASTER SECTIONS

The **REVERB** control sets the depth or amount of reverb. The **DWELL** regulates how long the decay lasts, from a short “donk” to a lengthy “heavenly choir”. The **TONE** ranges from dark and mellow on the left to bright and splashy on the right. The reverb section is controlled by its own footswitch button.



MASTER VOLUME AND OVERDRIVE SET-UP

Although the Steelaire is designed for musicians needing maximum clean headroom, the amp can “rock out” when called for. Like any classic amp, high **GAIN** settings, especially when selecting **MODE 1+2**, will produce increasing amounts of overdrive distortion, with the same natural tube-like dynamics as other Quilter amps. Reducing the **MASTER** volume allows these tones to be used at reasonable loudness levels.

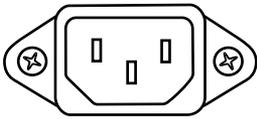
- TIP: For maximum clean headroom, use full MASTER and moderate GAIN settings.
- TIP: For more overdrive, use lower MASTER and higher GAIN settings. If desired, temper the overdrive using the LIMITER as described above.
- TIP: when exploring the dynamics of the amp, use low MASTER settings. Once a “sweet spot” is established, use the MASTER to set overall loudness.

REAR PANEL – AC POWER, SPEAKERS

International Power Supply

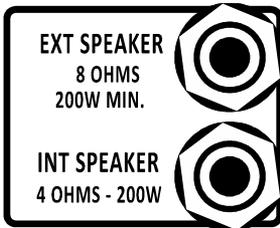
The Steelaire can be used on all known worldwide AC voltages (100-250V), which allows you to play just about anywhere on the planet.

Locking IEC Power Cord



The power cord that comes with your amplifier is designed to lock into the AC inlet to reduce the chance it will come unplugged during use. Press the yellow button on the cord to release it. Any normal 3-prong IEC cord may also be used with the amplifier. Always ensure that the ground contact is intact on both the cord and receptacle.

Speaker Outputs



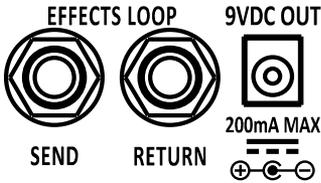
The Steelaire comes with the internal speaker plugged into the **INT SPEAKER** output. An external 4-8 ohm speaker may be used in place of the internal speaker by unplugging this cable and connecting the external speaker.

To use two speaker cabinets simultaneously, connect a 4-8 ohm extension speaker with a minimum of 200 watts continuous power handling to the **EXT SPEAKER** output and a 4-8 ohm cabinet (or the internal speaker) to the **INT SPEAKER** output. Circuitry adjusts the output impedance to split the power between the two outputs.

CAUTION: the amplifier can deliver up to 300 watts peak, well beyond the capacity of most single speakers. We recommend Quilter extension cabinets with power tested speakers. Quilter Labs will not be liable for damage to other speakers.

EFFECTS LOOP, FOOTSWITCH, DIRECT OUTPUT

Effects Loop



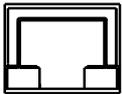
The **SEND** jack outputs at 1V full scale which aligns with consumer and pro effects. The **RETURN** jack interrupts the internal signal, and returns the effects output directly to the power amplifier.

The **9VDC OUT** jack will power one or two typical pedals, which may be left connected and secured inside the amplifier. The combined current ratings must not exceed 200ma. The **FX LOOP** switch on the remote controller will bypass or enable the pedal(s).

- TIP: The Effects Loop is best suited for “enhancement” devices such as delay, reverb, and chorus. “Overdrive” pedals should be used between the guitar and amplifier.
- TIP: The footswitch “FX LOOP” position bypasses the OUTPUT of the effect chain, but signals still flow INTO the effect chain, possibly building up reverb or echo trains which will be heard when the loop is activated.

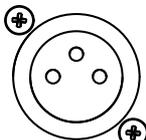
Footswitch Jack

FOOTSWITCH The remote controller (or footswitch) connects with the supplied cable. Both jacks on the foot controller are wired identically, so you can plug into either one. A standard network cable with RJ-45 connectors may be used as an emergency replacement or if you need a longer cable.



Direct Output

DIRECT OUTPUT

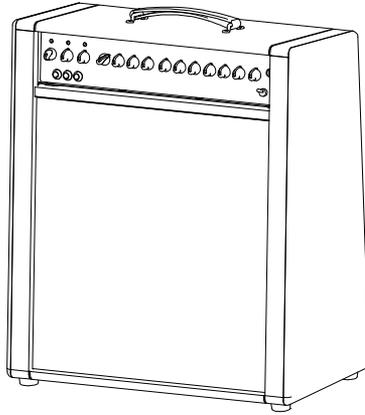


600Ω, 300 mV PEAK
500K ISOLATION

The isolated direct output connects the overall sound of the amp to a mixing board or external powered loudspeakers without using a microphone. The signal level is isolated and comparable with an amplifier mic, and is derived from the actual signal across the speaker, to preserve as much of the tone quality as possible.

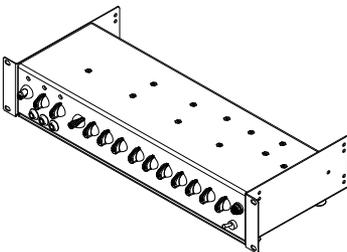
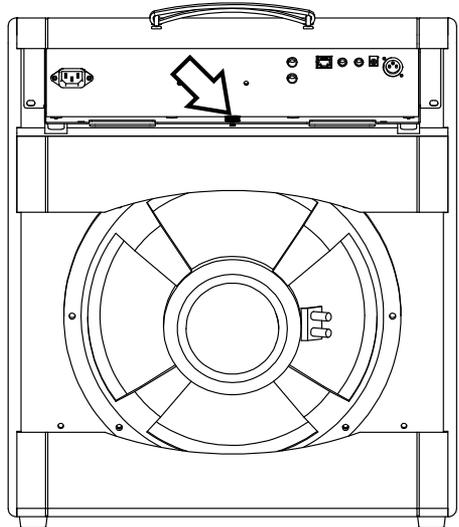
Internal equalization produces the same tone quality through a full-range console as the internal single-cone driver.

STELAIRE RACK MOUNT CABINET SYSTEM



Removing the Rack Mount Head

Unplug the cords and clear them from the access slots behind the amp, taking care not to drop them on the speaker. Remove the knurled thumbscrew and slide the amp out the back. Replace the thumbscrew for safe keeping. The amp may be rack mounted or set on its rubber feet.



Caring For Your Amplifier

Clean the outer surfaces with a clean, damp cloth or vacuum with a soft brush. Never use any abrasives, harsh cleaners or solvents.

The Steelaire amplifier is manufactured with high quality components using modern industrial processes that greatly reduce production defects. Each amplifier goes through an intensive testing process before it leaves the factory ensuring that your amplifiers will give you years of flawless service. There are no user-serviceable parts inside the amplifier. Any repairs should be performed by a trained service professional.

Always use the amplifier in a well-ventilated environment and protect from external heat sources such as furnaces or direct sunlight.

Prolonged high-volume playing causes heat buildup in the speaker which reduces its working lifetime. If you find it necessary to consistently use the amp at full volume, we recommend using an extension speaker to prolong speaker life and improve sound coverage.

Specifications

Amplifier Module Specifications	
Power Output:	200 watts, 4-8 ohms
AC Power Req.:	100–240Vac, 50–60 Hz, 250 W
Input Connections:	INSTR-1: ¼" mono INSTR-2: ¼" mono
Input Impedance:	INSTR 1 or 2: 2M ohms
Effects Loop:	Output: ¼" mono, 1V FS (-10dB), 1K ohms Input: ¼" mono, 50K ohms
Speaker 1 Output:	4 ohms, 200 W minimum rating
Speaker 2 Output:	4-8 ohms, 200 W minimum rating
Rack Mount Dims:	2RU, 7.75" (19.7cm) deep, 7.2 lbs (3.3Kg)

Cabinet and Speaker	
Speaker:	Custom voiced 15" Eminence, neo magnet, 3" voice coil, 300W rating, in open-back cabinet
Cabinet Dimensions: (H x W x D)	Combo cabinet: 21 x 23 x 9 in (53.4 x 58.4 x 22.9 cm) Rack Mount cabinet: 23 x 21 x 10.5 in (48.4 x 53.4 x 26.7cm) Handle and feet add 0.75 in (2cm) top and bottom.
Weight:	35 lbs. (16 Kg)

Note: Power ratings are provided by the loudspeaker manufacturer and are only a guideline when selecting a suitable speaker. Quilter Labs qualifies our speaker selections using a lengthy full power test that ensures that the speaker can withstand the maximum power output of our amplifiers.

Troubleshooting

Symptom	Action
No power, no lights	<ul style="list-style-type: none"> • Ensure that the AC cord is fully seated and connected to a live source. • Check the AC source by trying another device such as a lamp.
Amp shuts off then after a short time, turns back on	<ul style="list-style-type: none"> • Automatic thermal protection is activating. Reduce the volume at least 30% and keep the amplifier out of direct sunlight or tightly enclosed spaces.
No audio (using a guitar)	<ul style="list-style-type: none"> • Check the MODE switch: confirm that the yellow LED over the intended channel is illuminated. • Confirm that the MASTER control and the correct GAIN 1 or 2 controls are turned up. • Ensure the guitar plug is inserted fully at each end. • Try using a different guitar cable. • Check that the pickup selector switch and volume on the guitar are set correctly. • Remove any cables from the RETURN jack of the Effects Loop. If this corrects the problem, check the effects-chain for a faulty connection. • Ensure that the rear panel speaker plug is fully inserted into the INT SPEAKER jack.
MODE switch operates backwards	<ul style="list-style-type: none"> • Confirm the footswitch setting. The footswitch can reverse the MODE setting.
Limiters, Tremolo, or Reverb don't work	<ul style="list-style-type: none"> • Confirm the footswitch setting. • All effects are active with footswitch unplugged.
Reverb tone is too dark or bright	<ul style="list-style-type: none"> • Adjust the reverb TONE control.
Reverb sound has too much "echo"	<ul style="list-style-type: none"> • Adjust the DWELL control
The signal level is slowly surging.	<ul style="list-style-type: none"> • Check the tremolo effect, and increase the RATE for a more rapid pulsation. • Check that the TREM control is set to its minimum position if this sound is undesired.
Background hum	<ul style="list-style-type: none"> • Ensure the guitar plug is fully inserted. • Try using a different guitar cable. Make sure it is properly shielded. • Connect AC powered accessories to the same receptacle as the amplifier to avoid ground loops. <p>If the hum goes away when you turn down the guitar:</p> <ul style="list-style-type: none"> • Single coil pickups can be a source of hum, especially if near RF sources like light dimmers or neon lights. Some guitars have a mode where two pickups are in reverse polarity to each other. This mode can often reduce hum. • Check that the guitar's cavities are well shielded.

Excessive noise	<ul style="list-style-type: none"> • At high gain settings, some audible hiss or whoosh is normal. • Check your cables, guitar and other effects in the signal chain.
Amp sounds garbled at all volumes	<ul style="list-style-type: none"> • Check speaker by temporarily trying an external speaker. Caution: reduce MASTER volume until sound level has been confirmed.
Desire clean tone, getting too much overdrive	<ul style="list-style-type: none"> • Turn down the GAIN control and turn up MASTER. • Confirm that MODE is not on 1+2. • Turn up LIMITER.
Desire overdrive tone, not getting enough overdrive	<ul style="list-style-type: none"> • Turn down MASTER until the desired overdrive is obtained, then reset to desired loudness. • Turn up GAIN, and/or use MODE 1+2, until overdrive is obtained. • Set LIMITER on zero (or bypass with footswitch). • Turn up guitar volume. • Try higher output pickups.
Tone sounds “dull” with no high frequencies	<ul style="list-style-type: none"> • Confirm EQ settings. • Check your guitar’s tone controls.
<p>Amplifier Requires Service</p> <p>If any of the below occur, immediately unplug the amplifier and refer to a service technician.</p> <ul style="list-style-type: none"> • Amplifier emits smoke • Amplifier is dropped or chassis is dented or bent • Liquid has been spilled into the amplifier • Loose parts inside the amplifier are heard • AC breaker trips 	

Factory Service

To return an amplifier to Quilter Labs for service under the warranty policy, please visit www.quilterlabs.com and fill out the Return Request Form. If you do not have access to the website, you may send a request by letter to Quilter Labs at 1700 Sunflower, Suite A, Costa Mesa, CA 92626. Please include the serial number of the amplifier and a copy of your sales receipt. Instructions on how to send your amplifier will be provided.

Do not attempt to open the amplifier and service it yourself. Any attempt to service the amplifier by a non-authorized service technician may void your warranty.

LIMITED TRANSFERABLE WARRANTY

IMPORTANT: PLEASE READ THIS DOCUMENT COMPLETELY. IT CONTAINS IMPORTANT INFORMATION ABOUT YOUR RIGHTS AND OBLIGATIONS, AS WELL AS LIMITATIONS AND EXCLUSIONS THAT MAY OR MAY NOT APPLY TO YOU. BY ACCEPTING DELIVERY OF THE PRODUCT(S), YOU AGREE TO BE BOUND BY AND ACCEPT THESE TERMS AND CONDITIONS.

Quilter Laboratories, LLC (Quilter Labs) guarantees its products to be free from defective material and/or workmanship and will replace defective parts and repair malfunctioning products under this warranty when the defect occurs under normal installation and use—provided the unit is returned to our factory via pre-paid transportation with a copy of proof of purchase (i.e. sales receipt). This warranty provides that the examination of the return product must indicate, in our judgment, a manufacturing defect. This warranty does not extend to any product which has been subjected to misuse, neglect, accident, or where the date code or serial number has been defaced or removed. Quilter Labs shall not be liable for incidental and/or consequential damages. This warranty gives you specific legal rights.

This limited warranty is freely transferable during the term of the warranty period. The warranty on Quilter products is NOT VALID if the products have been purchased from an unauthorized dealer/online e-tailer, or if the factory serial number has been removed, defaced, or replaced in any way.

Customers may have additional rights, which vary from state to state or from country to country. In the event that a provision of this limited warranty is void, prohibited or superseded by local laws, the remaining provisions shall remain in effect. The Quilter Labs limited warranty in the United States is valid for a period of three (3) years from date of purchase except that footswitches, covers, cabinets, handles, and cabinet hardware are warranted for a period of one (1) year and speakers, and all other included accessory products for a period of ninety (90) days from date of purchase.

IMPORTANT: PLEASE RETAIN YOUR SALES RECEIPT OR ONLINE ORDER RECORD, AS IT IS YOUR PROOF OF PURCHASE COVERING YOUR LIMITED WARRANTY. TO TRANSFER THE WARRANTY TO A SUBSEQUENT PURCHASER, YOU MUST ENDORSE THE SALE OF THE PRODUCT TO THE SUBSEQUENT PURCHASER ON THE FRONT OF THE SALES RECEIPT. THIS LIMITED WARRANTY IS VOID WITHOUT SUCH ENDORSED SALES RECEIPT.

Defective products that qualify for coverage under this warranty will be repaired or replaced, (at Quilter Labs' discretion) with a like or comparable product, without charge. To receive warranty service, return the complete product to Quilter Labs, LLC, with proof of purchase, during the applicable warranty period. The Quilter Labs Dealer from whom you purchased your product may also be authorized for warranty service and should be the first point of contact when service is required. TRANSPORTATION COSTS ARE NOT INCLUDED IN THIS LIMITED WARRANTY. Any repair or service performed by any person or entity other than an Authorized Quilter Labs Electronics Service Center is not covered by this limited warranty.

Other questions regarding this warranty can be answered by calling (714) 519-6114 or by contacting your authorized Quilter distributor.
Email: info@quilterlabs.com

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver
- Connect the product into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Quilter Laboratories, LLC
1700 Sunflower, Suite A
Costa Mesa, CA 92626
(714) 519-6114
www.quilterlabs.com