

# SNAKECHARMER

## **Legends Series**

50-Watt or 100-Watt

Fixed-Biased Tube Amplifier

## Owner's Manual

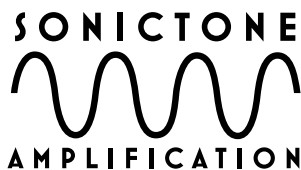
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Made in the USA

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# Introduction

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The year 1987 was a banner year for music. The sheer number of incredible albums released, particularly in the rock and metal genres, was astounding. At the forefront was a rude and brash band that was destined to rule the airwaves. And at the center of that band's sound was a guitar player with tremendously soulful skills and a tone that had a venomous bite. The Snakecharmer is an amp that encapsulates that tone and delivers searing overdrives that transport you right back to the Sunset Strip.

The tone of this amp stands out differently than other high-gain models. It has a pronounced mid-range bite with crisp highs. In the '87 mode, it has a tight low-end with tight gain. In the '91 mode, the tone shifts to a thicker, more modern tone with more gain. Either way, it's a versatile amp that suits the player's style very well. It accentuates each and every note and gives it what it needs to cut through the mix. It truly is a "raunch n roll" tone and suited for a style of playing with tons of attitude to spare. And, the amp can be powered by either EL34 or 6550 power tubes, as the player was known to use amps with both. The EL34s accentuate the mid-range while the 6550s deliver a little more low-end with more top-end clarity as well.

I'd like to personally thank you for purchasing the SonicTone Legends Series Snakecharmer tube amplifier. I know how important every player's tone is to them and that consideration goes into every amp. Carefully designed and hand-built here in the U.S., the Snakecharmer gives you the debauchorous tones of the late '80's. From rich crunches to harmonically rich overdrives, this amp will deliver some fantastic tones for you to use when playing live or in the studio.

Good luck and enjoy the amp!

Sincerely,



Nick Sagona

**⚡ WARNING! ⚡**

Dangerous and potentially lethal voltages may be present in the amplifier even after it has been turned off and unplugged. Do not open the amp yourself or touch the inside of it. Only have a qualified service technician open up and work on the amplifier.

# Safety Instructions

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1. Always use the correct types of tubes for this amplifier.
2. Always match the impedance to correct value of the speaker load.
3. Do not attempt to bypass the fuses or use different fuse values.
4. Please only use the provided SonicTone footswitch, which is compatible with this amplifier.
5. Please only use an active 5-pin DIN cable to connect the footswitch to the amplifier.
6. Please operate the amplifier in dry and safe conditions.
7. Please store the amplifier in a reasonable, climate-controlled environment.
8. If you are experiencing issues with the amplifier, please have it worked on by a qualified service technician only. Do not attempt to open the amp and work on it yourself.

# Features

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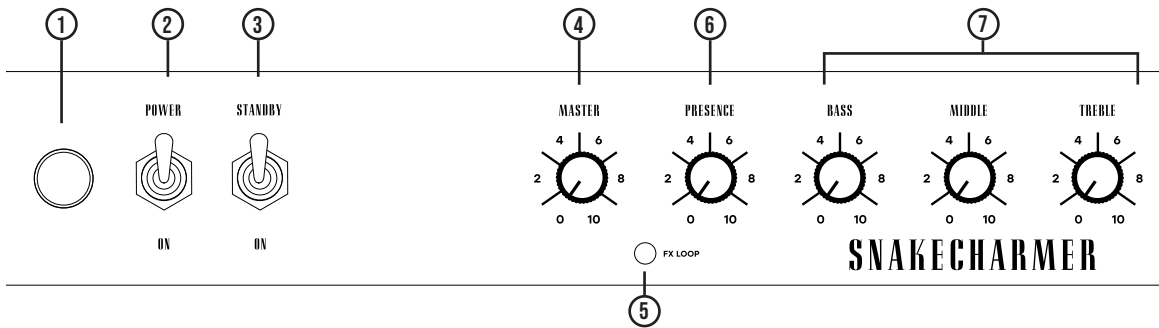
The Snakecharmer is a fixed-biased tube amplifier that uses four (4) 12AX7 preamp tubes. The 50-watt model uses two (2) power tubes and the 100-watt model uses four (4) power tubes. The power tubes can either be EL34s or 6550s. The features include:

- 2 channels with independent gain controls (footswitchable)
- Shared 3-band EQ with presence
- Bright switch on channel 1
- '87/'91 switch
- Master volume
- Solo boost control, footswitchable
- Custom value, vintage-spec choke
- Buffered FX loop, bypassable and footswitchable
- FX loop series/parallel switch with send and return controls
- Half-power switch
- 3-way output impedance switch (16, 8 or 4 ohm)
- Birch plywood cabinet with finger-jointed construction
- 3-button footswitch

## Footswitch Operation:

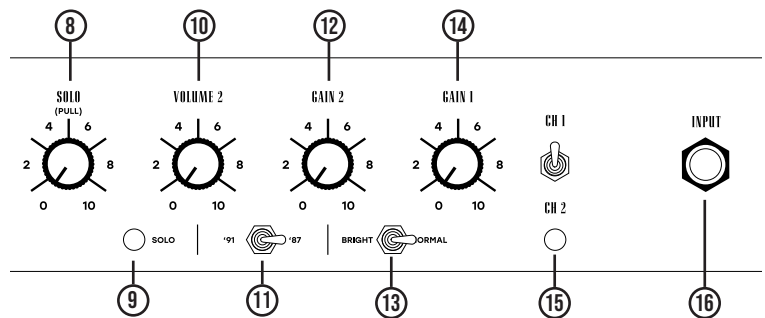
The footswitch requires the active 5-pin DIN cable to be inserted into the footswitch jack on the rear panel as well as the jack on the footswitch. In order for the footswitch to operate correctly, the corresponding switches on the amp must be set to the OFF position. The left button (orange LED) engages channel 2. The middle button (red LED) engages the solo boost. The right button (green LED) engages the FX loop.

# Front Panel



- Pilot Light** - illuminates when the amp is turned on.
- Power Switch** - turns the amp on.
- Standby Switch** - allows the amp to be played. When the standby is off, the tubes are kept warm, but the amp will not make any sound.
- Master** - the overall master volume of the amp.
- FX Loop LED** - illuminates when the FX loop is engaged.
- Presence** - active tonal control that can be used to brighten up the amp's overall sound.
- Bass, Middle and Treble** - passive equalization controls to adjust the tone of the amp.

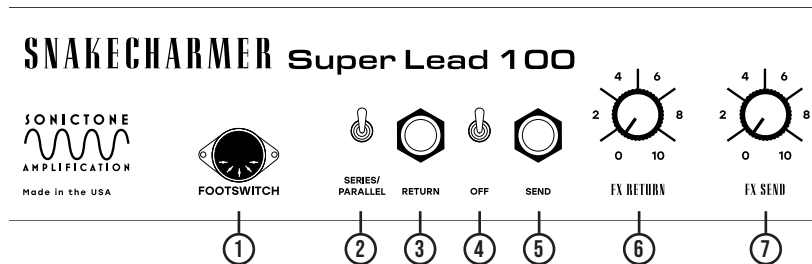
- Solo Boost Level & Switch\*** - control to adjust the level of the solo boost. Pull out to activate.
- Solo Boost LED** - illuminates when the solo boost is engaged.
- Volume 2** - control to adjust the overall volume on channel 2.



- '87/'91** - switch to engage a bolder tone on channel 2. In "'91" mode, channel 2 will have additional gain and a more aggressive, thicker voicing.
- Gain 2** - control to adjust the amount of gain on channel 2.
- Bright Switch** - switch to engage a slightly brighter tone for channel 1.
- Gain 1** - control to adjust the amount of gain on channel 1.
- CH 1 / CH 2 Switch & LED** - switch to change between channels 1 and 2 when not using the footswitch. The LED illuminates when channel 2 is engaged.
- Input Jack** - mono input jack to plug your guitar into.

\* The solo boost is an additive volume boost for channel 2 and works in conjunction with volume 2. The higher volume 2 is set, the less of an effect the solo boost will have. When volume 2 is set at a lower setting, the boost can be as much as 12 dB. When volume 2 is set at a higher setting - for example, past half way - the boost will be around 2 or 3 dB.

# Rear Panel



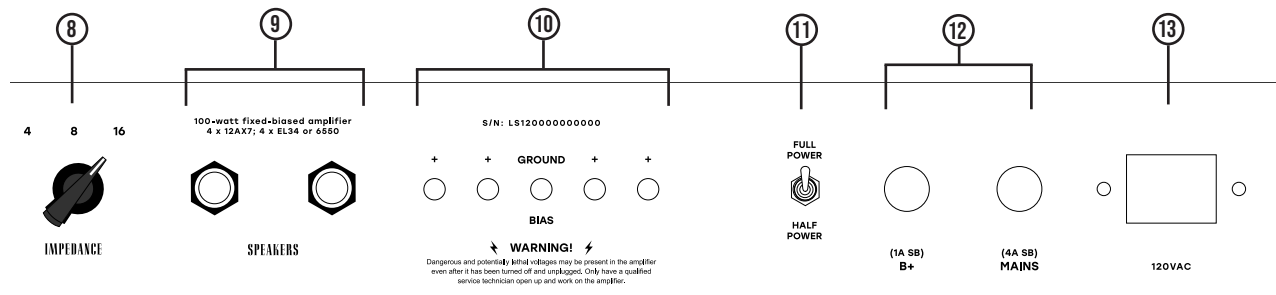
1. **Footswitch Jack** - 5-pin DIN jack to plug the provided footswitch cable into.
2. **FX Series/Parallel Switch** - switch to operate the FX loop in either series or parallel mode. In parallel mode, the original signal is allowed to pass through unaffected and the send control acts as a “wet/dry blend” to mix the level of affected signal into the mix with the unaffected signal. In parallel, depending on the amount of “wet” signal set by the send control, the overall signal may be louder due to the dry and wet signals being mixed together. In this scenario, it is recommended to use the return control to balance out the overall volume.
3. **FX Loop Return Jack** - mono input jack for the FX loop return signal.
4. **FX Loop Bypass Switch** - switch to fully bypass the FX loop circuit.
5. **FX Loop Send Jack** - mono input jack for the FX loop send signal.
6. **FX Loop Return Level** - control to adjust the level of the return signal to the amp.
7. **FX Loop Send Level** - control to adjust the level of the send signal to the outboard FX chain.

**A note about the FX Loop** - When the FX loop is off (bypassed), the entire signal will bypass the FX loop circuit altogether. However, the send and return jacks are switched jacks that are connected together when nothing is plugged into them. Therefore, when the circuit is on, signal will be allowed to pass through the FX loop if nothing is plugged into it. This allows the ability to use the send jack as a “preamp out” signal to feed other power amps. Once a cable is inserted into the return jack, that connection is broken and the loop will accept the incoming return signal only. If the FX loop is not being used, the return control can be used as an additional volume control to reduce the volume when the FX loop is on, and then boost the volume when the FX loop is switched off. This will effectively provide a volume “boost” option.

## ! NOTICE !

Tube amplifiers are voltage-sensitive devices that require a certain amount of AC input voltage (VAC.) If the provided input voltage is too low, the amplifier may not function properly. If the provided input voltage too high, it may damage the amplifier. Please take care to ensure that the correct AC input voltage is provided to the amplifier. See the **specifications** section of this manual for more info.

## Rear Panel *(continued)*



8. **Impedance Selector Switch** – switch to select the correct impedance of the speaker load hooked up to the amp.
9. **Parallel Speaker Jacks** – mono input jacks to plug the speaker(s) into. PLEASE NOTE: The jacks are in parallel, so if you plug two equal impedance speaker loads into them, you must set the impedance switch to half their impedance. For example, with two 16 ohm speaker loads plugged in, the impedance switch should be set to 8 ohms.
10. **Bias Probes** – test jacks to check the approximate bias values of the power tubes in millivolts (mV).\*
11. **Full/Half Power Switch** – switch to change the power setting between half and full power. The amount of power reduction in wattage is approximate.\*\*
12. **Fuse Holders** – receptacles for the amp’s fuses.
13. **AC Jack** – jack to plug the provided AC cord into.

### **\*Important Note About Biasing The Snakecharmer:**

Actual bias values are measured in milliamps (mA). The number given in millivolts (mV) by the bias probes represents the voltage drop across an internal 1 ohm resistor attached to the cathode of each power tube. Using Ohm’s law ( $V = IR$ ), the value in millivolts (mV) can easily be converted to milliamps (mA) to get an approximate bias value in milliamps (mA). For example, a reading of 40mV equals 40mA. This is only an approximation to guide you in checking and setting the bias of the amp. Before leaving the shop, all SonicTone amps are properly biased by measuring the plate voltage and voltage drop across the primary output transformer windings to get an accurate bias setting directly in milliamps (mA) from the plate current.

This amp circuit is designed to accommodate standard EL34 power tubes, as well as larger 6550 power tubes. In order to achieve this, the bias supply is designed such that it allows for a wide range of bias voltage to accommodate biasing different sets of power tubes with different ratings and requirements. It is imperative that the bias be set correctly so that the power tubes do not run too hot (or too cold.)

A general safe bias guide would be that if the wall voltage is approximately 120VAC, the bias probe reading for EL34s should be approximately 35-40mV. For 6550s, the bias probe reading should be approximately 40-45mV.

The bias pot is located on the top of the amp chassis near the power tubes. As always, please have a qualified technician service the amp and set the bias accordingly.

### **\*\*A Note About Power Reduction:**

The power reduction circuit in this amp works exponentially with the master volume. When the half-power mode is engaged, it will have an increased effect at reducing the amp’s output as the master volume is turned up. When the master volume is low, it will have less of an effect.

Please note, the power reduction in wattage **does not** equate to a 50% reduction in overall loudness (dB.)

# Sample Settings

## Channel 1 - Chimey Clean:

MASTER PRESENCE BASS MIDDLE TREBLE SOLO (PULL) VOLUME 2 GAIN 2 GAIN 1

FX LOOP

SOLO | '91 | BRIGHT | NORMAL

CH 1  
CH 2

## Channel 1 - Blues Crunch:

MASTER PRESENCE BASS MIDDLE TREBLE SOLO (PULL) VOLUME 2 GAIN 2 GAIN 1

FX LOOP

SOLO | '91 | BRIGHT | NORMAL

CH 1  
CH 2

## Channel 2 - G.N.R. (Gain Normalization Resistance):

Of course, the key to this amp and the tone it's trying to achieve from the late '80s is the use of the G.N.R., or gain normalization resistance circuit. That circuit, of course, came in two versions:

### '87 A.F.D. (Anode-Forward Diode):

The first version of G.N.R. appeared in 1987 giving us A.F.D., which provided a tight guitar tone with a good amount of gain. With the '87/'91 switch on '87, setting the bass, middle and treble all to 7 and gain 2 to about 8 is a good place to start.

MASTER PRESENCE BASS MIDDLE TREBLE SOLO (PULL) VOLUME 2 GAIN 2 GAIN 1

FX LOOP

SOLO | '91 | BRIGHT | NORMAL

CH 1  
CH 2

### '91 U.Y.I. (Unity Yoke Inductance):

The upgraded G.N.R. circuit came out in 1991 and gave us a more aggressive and thicker tone with more gain. Again, with the bass, middle and treble set at 7, you can set gain 2 to 10 and the '87/'91 switch to '91 and tailor your sound from there. If you want a thicker, more modern sound, turn the presence down to about 3, increase the bass and lower the mids.

MASTER PRESENCE BASS MIDDLE TREBLE SOLO (PULL) VOLUME 2 GAIN 2 GAIN 1

FX LOOP

SOLO | '91 | BRIGHT | NORMAL

CH 1  
CH 2



## 2-Year Limited Warranty

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This amplifier is protected with a limited, 2-year warranty for any and all defective issues with the build workmanship and parts, excluding tubes, transformers and speakers. The warranty does not cover general wear and tear, neglect, misuse or abuse, damage from liquids (water, alcohol, etc.), disasters, acts of God or unauthorized modifications. Any modifications made to the amp by the owner or a technician will void the warranty. The owner is responsible for all warranty shipping costs. Once the warranty work is completed, the customer will be notified and sent a final shipping invoice. The owner then is required to pay the shipping invoice to have the repaired amp shipped back to them. Returned warranty shipping will be insured and will require a signature.

# Specifications

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**Product Series:** Legends Series

**Product Model:** Snakecharmer Head

## AC Input & Fuses:

- U.S. Standard IEC jack rated for 120V @ 60Hz
- Slo-blo mains fuse: **50W** - 3A; **100W** - 4A
- Slo-blo high voltage (B+) fuse: **50W** - 0.5A; **100W** - 1A

## Tubes & Power Output:

### 50-watt Model

- Four (4) 12AX7 preamp tubes
- Two (2) EL34 or 6550 power tubes  
50W @ 16, 8 or 4 ohms

### 100-watt Model

- Four (4) 12AX7 preamp tubes
- Four (4) EL34 or 6550 power tubes  
100W @ 16, 8 or 4 ohms

## Footswitch:

- 3-button SonicTone footswitch
- 5-pin active DIN cable required for proper operation

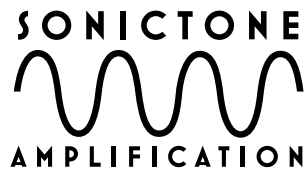
## Dimensions:

### 50W Head

- Width: 30 in
- Height: 10.75 in
- Depth: 9 in
- Weight: 36 lbs

### 100W Head

- Width: 30 in
- Height: 10.75 in
- Depth: 9 in
- Weight: 42 lbs



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