SONICTONE AMPLIFICATION®

BA-103 / BA-303

BA Series

Fixed-Biased

100-Watt or 300-Watt

Bass Tube Amplifier Head

Owner's Manual

www.sonictoneamps.com

Made in the USA

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Introduction

I'd like to personally thank you for purchasing the SonicTone BA bass 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 BA bass tube amp delivers a warm, well-balanced bass tone with great response and a thick low-end. This version is based on the same circuit in the Highway, which is a full-range circuit that works well with both guitar and bass. Using that circuit in this bass amp is a throwback to the first high-powered vintage bass amps of the 60s and 70s. It comes with a classic parallel 2-channel preamp that lets you dial in as much clean or dirt as you want between the 2 channels. All in all, this bass amp delivers the goods and will give you some fantastic tones when playing live or in the studio. Good luck and enjoy the amp!

Sincerely,

Nick Sagona

Safety Instructions

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 the correct 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. Prolonged exposure to high sound levels may cause permanent hearing loss. Please take the necessary precautions. See page 8 for more information.
9. 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.

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.

Features

The BA-103 & BA-303 amps are fixed-biased bass tube amplifiers that use four (4) 12AX7 preamp tubes. The BA-103 uses four (4) power tubes, of which you can choose either EL34, 6L6GC or 6550 power tubes. The BA-303 uses six (6) power tubes, of which you can choose between 6550 or KT88 power tubes (42W versions only.) The features include:

- 2 channels with independent parallel gain controls (footswitchable)
- Shared 3-band EQ with presence
- Master volume
- -15dB input pad switch
- Bright switch on channel 1
- Mid cut/boost switch
- Buffered FX loop
- Unbalanced 1/4" preamp out
- Unbalanced 1/4" power amp in
- Balanced XLR preamp out with a ground lift switch
- 3-way output impedance switch
- Birch plywood cabinet with finger-jointed construction

(BA-303 model only)

- Two separate bias controls, one for each trio of power tubes
- High-quality, low-noise, high-volume fan

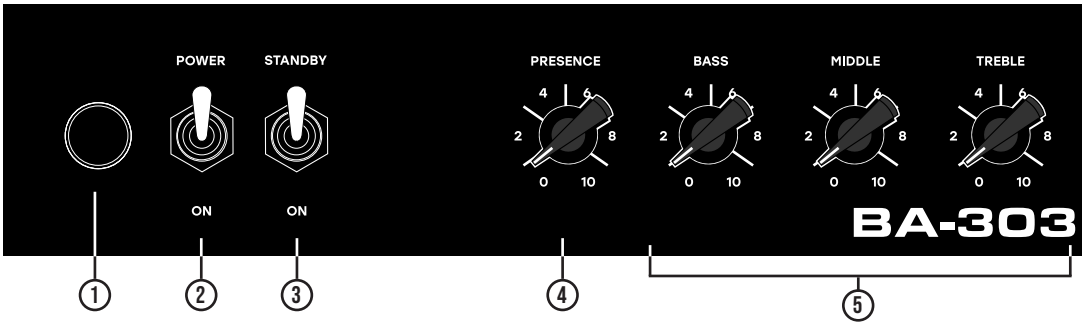
Independent Parallel Gain Structure:

The independent parallel gain structure between channels 1 and 2 offers a unique voicing between the channels. It is fashioned after the design of vintage multi-channel amplifiers with multiple input jacks. In those designs, the channels could be run separately, or they could be "linked" together with a patch cable which that would produce more gain. The preamp design of the BA-103 and BA-303 eliminates the need for multiple input jacks and patch cables and allows you to control the mixing of the 2 channels via the footswitch or front panel switches.

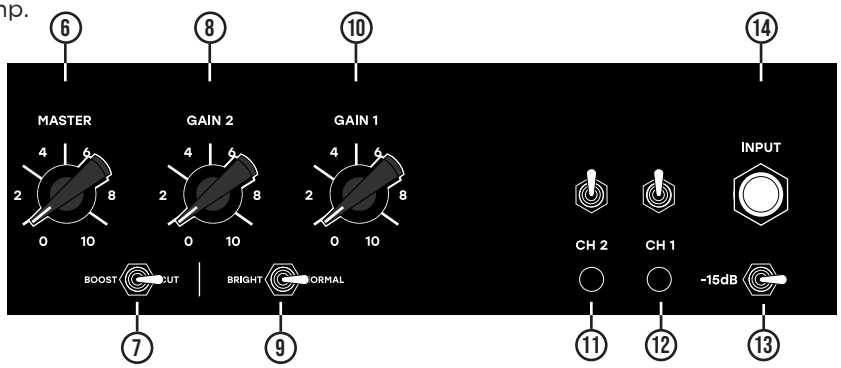
Footswitch Operation:

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 switches on amp must be set to the OFF position. The orange LED button engages channel 1. The red LED button engages channel 2. Both can be engaged at the same time for a blend of gain from both channels. Both can be turned off at the same time which will mute the amplifier.

Front Panel

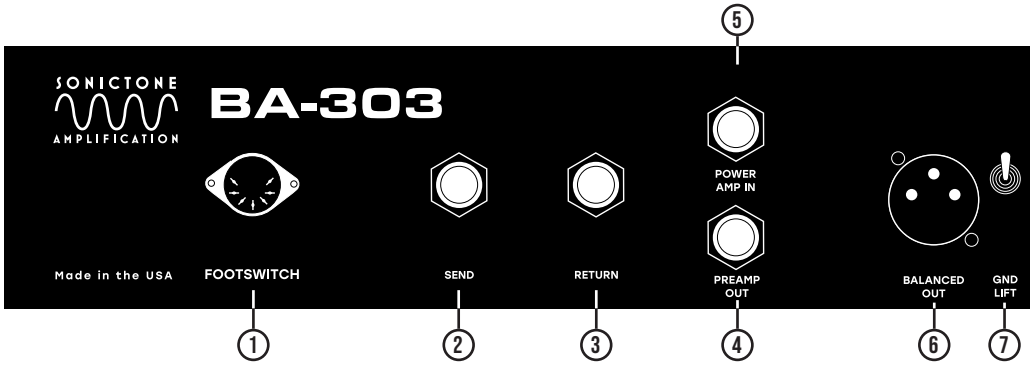


1. **Pilot Light** – illuminates when the amp is turned on.
2. **Power Switch** – turns the amp on.
3. **Standby Switch** – allows the amp to be played. When the standby is off, the tubes are kept warm, but the amp will not make any sound.
4. **Presence** – active tonal control that can be used to brighten up the amp's overall sound.
5. **Bass, Middle and Treble** – passive equalization controls to adjust the tone of the amp.
6. **Master** – the overall master volume of the amp.
7. **Mid Cut/Boost Switch** – switch to engage a mid-range cut or boost
8. **Gain 2** – control to adjust the amount of gain on channel 2 (the brighter channel.)
9. **Bright Switch** – switch to engage a slightly brighter tone for channel 1.
10. **Gain 1** – control to adjust the amount of gain on channel 1 (the darker channel.)



11. **CH 2 Switch & LED** – switch to engage channel 2 in the mix. The LED illuminates when channel 2 is engaged. (The switch must be set to OFF for the footswitch to operate.)
12. **CH 1 Switch & LED** – switch to engage channel 1 in the mix. The LED illuminates when channel 1 is engaged. (The switch must be set to OFF for the footswitch to operate.)
13. **-15dB Pad Switch** – switch to engage a pad for hotter input signals, such as a bass with active pickups.
14. **Input Jack** – mono input jack to plug your guitar into.

Rear Panel



1. **Footswitch Jack** – stereo input jack to plug the provided footswitch cable into.

2. **FX Loop Send Jack** – mono input jack for the send FX loop instrument level signal.

3. **FX Loop Return Jack** – mono input jack for the return FX loop instrument level signal.

4. **Preamp Out** – mono unbalanced output jack to send the post-FX loop line level signal to another external unit or power amp.

5. **Power Amp In** – mono unbalanced input jack to send a line level preamp signal from another amp into the power amp of this amp. Once a line is plugged into this jack, the internal preamp is disconnected and the power amp will only amplify the incoming external preamp signal.

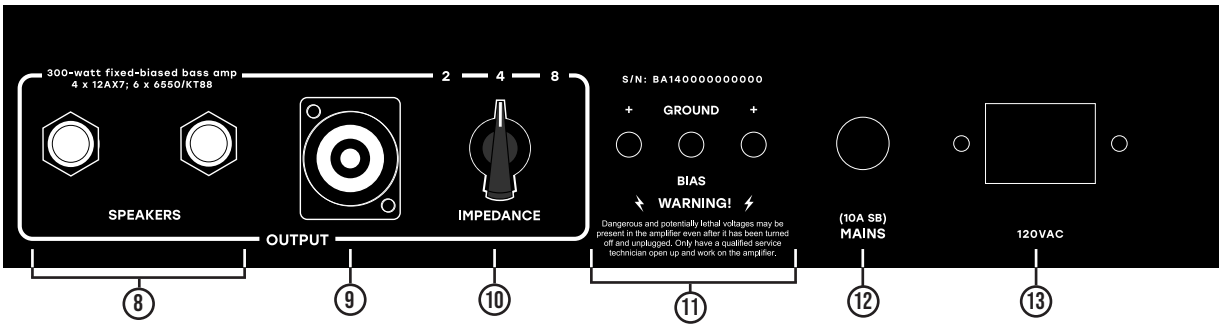
6. **Balanced Out** – a transformer-driven balanced XLR output jack to send the post-FX loop signal to a PA or mixer.

7. **Ground Lift** – switch to engage a ground lift to attempt to mitigate any ground buzz or hum that may occur in the balanced out signal.

A note about the insert points – It is important to make a distinction between the FX loop and the "preamp out/power amp in" jacks. The FX loop is a lower instrument level signal designed for FX units and requires the "make-up" gain of the return stage. The "preamp out/power amp in" insert point is post-FX loop and is a higher line level signal that needs no recovery stage. The two insert points have different purposes and behave differently because of this.

In summary, the FX loop is designed to feed external FX units via the send jack and receive the processed instrument level signal to the return jack. The "preamp out/power amp in" insert point is designed to feed other power amps, or receive a line level signal from another preamp.

Rear Panel *(continued)*



8. **Parallel 1/4" TS Speaker Jacks** – mono input jacks to plug the speaker(s) into.

9. **SpeakON NL4 Jack (BA-303 Model Only)** – four-pole SpeakON jack to provide a sturdier connection against vibrations for louder, high-powered applications.

   PLEASE NOTE: All of the speakers 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 8 ohm speaker loads plugged in, the impedance switch should be set to 4 ohms.

10. **Impedance Selector Switch** – switch to select the correct impedance of the speaker load hooked up to the amp. (4/8/16 ohms on the BA-103. 2/4/8 ohms on the BA-303.)

11. **Bias Probes** – test jacks to check the approximate bias point of each power tube in millivolts (mV).* Each positive bias probe is connected to one half of the power tubes. To estimate the value per tube, divide the measured value by the number of tubes on one side of the power section (Divide by 2 for the BA-103; divide by 3 for the BA-303.) For example, a measurement of 90 mV on the BA-103 would imply that each tube in that pair is at approximately 45mV. A measurement of 150mV on the BA-303 would imply each tube in that trio would is at approximately 50mV.

12. **Fuse Holders** – receptacle for the amp's main fuse. There's an additional the high voltage fuse located inside the amp.

13. **AC Jack** – jack to plug the provided AC cord into.

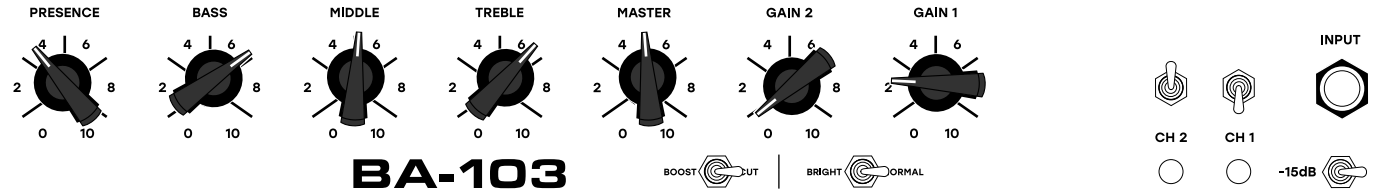
***Important Note About Biasing:**
The value given at the bias probes represents the voltage drop across an internal 1 ohm resistor attached to the cathode of each power tube. Using Ohm's law (V = IR), the value in millivolts (mV) can easily be converted to milliamps (mA) to get the approximate cathode current. For example, a reading of 40mV would equal 40mA. Power tube cathode current can act as a set point for adjusting the amplifier's bias. This is only an approximation to guide you in checking and setting the bias of the amp, as other factors go into calculating an amp's bias, such as the available plate voltage and max plate dissipation of the power tubes. Before leaving the shop, all SonicTone amplifiers are biased by measuring the plate voltage and plate current, and using those values to properly set the plate dissipation of the power tubes at idle.

The bias pot is located on the top of the amp chassis near the power tubes. (The BA-303 has 2 separate bias pots, one for each trio of power tubes.) As always, please have a qualified technician service the amp and set the bias accordingly. When biasing the amp, all measurements should be performed with the amplifier warmed, set to play mode and with all controls set to zero.

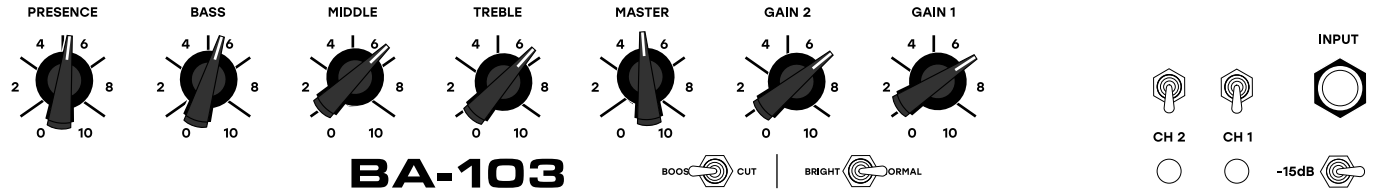
Sample Settings

Since the BA-103 and BA-303 share the same preamp, the following settings will work for both amps. However, please note the position of the master volume, as it may need to be lowered when applying these settings to the BA-303.

Channel 1 - Clean

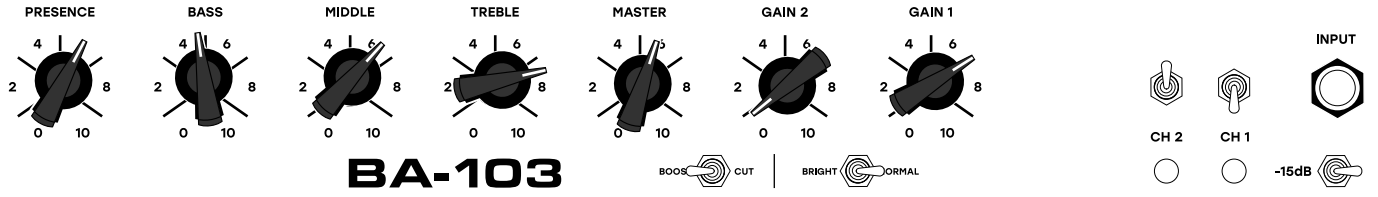


Channel 1 + 2 - Rock Grit



Channel 1 - "The Ox"

(Warning - Very Loud!)



! HIGH SOUND LEVEL WARNING !

Guitar amplifiers produce extremely high sound levels. Any prolonged exposure to high sound levels may cause permanent hearing loss. Please take care to use proper hearing protection when operating and playing through a SonicTone amplifier. For more information on exposure to extreme sound levels and its effects, please visit the **OSHA website here**.

2-Year Limited Warranty

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.

! 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.

Specifications

Product Series: BA Series

Product Model: BA-103 or BA-303 Bass Head

AC Input & Fuses:

- Standard IEC jack for U.S. 120VAC
- Slo-blo mains fuse: US 120VAC **100W** - 4A; **300W** - 10A
- Slo-blo high voltage (B+) fuse: **100W** - 1A; **300W** - 3A

Tubes & Power Output:

100-watt Model

- Four (4) 12AX7 preamp tubes
- Four (4) power tubes (EL34, 6L6GC or 6550)
- 100W @ 16, 8 or 4 ohms

300-watt Model

- Four (4) 12AX7 preamp tubes
- Six (6) power tubes (6550 or KT88)*
- 300W @ 8, 4 or 2 ohms

* *The 300 model requires 42W output tubes with a max plate voltage of at least 680V.*

Footswitch:

- 2-button SonicTone footswitch
- 5-pin active DIN cable

Dimensions:

100W Head

- Width: 24 in
- Height: 10.75 in
- Depth: 9 in
- Weight: 38 lbs

300W Head

- Width: 24 in
- Height: 10.75 in
- Depth: 11 in
- Weight: 66.5 lbs

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