



# OPERATION MANUAL

*Spectraverb*

**16**



**Thank you for purchasing an Andrews Amplifier. The Spectraverb name signifies a full spectrum of tones and reverberation. As with all Andrews amps, these models are built to the highest standards of craftsmanship and are finely tuned for the ultimate tone. This manual will help you to get the most from your new amp. Please feel free to contact us with any questions at [andrewsamps.com](http://andrewsamps.com)**

## **FEATURES;**

- **CLASSIC TUBE TONE WITH LUSH SPRING REVERB** - Featuring tube driven spring reverb with an innovative reverb drive limiter control.
- **HAND-WIRED CONSTRUCTION** – Also sometimes called “point-to-point” wiring, the Spectraverb amps utilize a very high quality turret board made of super-tough G10 composite. This glass-epoxy laminate is specified for its extremely high strength and high dimensional stability over temperature. The extra-thick board material will never warp or melt, and there are no copper traces to peel away from the board over time. All wiring and soldering is done by hand and quality-checked to ensure many years of trouble free operation.
- **AMERICAN-MADE TRANSFORMERS** – We utilize only the best transformers to meet our specifications. They are chosen for superior tone and are rated to withstand extreme heat for high reliability. Output impedance is available at 4, 8 or 16 ohms.
- **HIGH QUALITY CABINET** – The cabinet is made of solid pine with a Baltic birch plywood baffle. The components are precision cut using high-tech equipment and are hand assembled with care. Finger joints are used at the edges for maximum strength.
- **EXTERNAL BIAS ADJUSTMENT POT** – The Spectraverb amps are equipped with an externally accessible adjustment control. This makes output tube replacement fast and economical. See the section about the rear panel for more information.

# Warnings and Precautions

**During operation, vacuum tubes can reach temperatures over 400 degrees F. Do not touch hot tubes. Insure plenty of ventilation behind the amp. Keep the amp away from children as well as curtains and other flammable objects.**

**Do not expose your amplifier to rain. Never set any cups, glasses, bottles or cans of liquid on your amplifier.**

**Do not use any solvents to clean your amplifier.**

**Never operate your amplifier without a proper speaker load or damage may occur. See the section about the rear panel features for more information.**

**Make sure the amplifier is always properly grounded. Never remove or defeat the ground pin from your power cord. Always unplug the amplifier before changing tubes or fuses.**

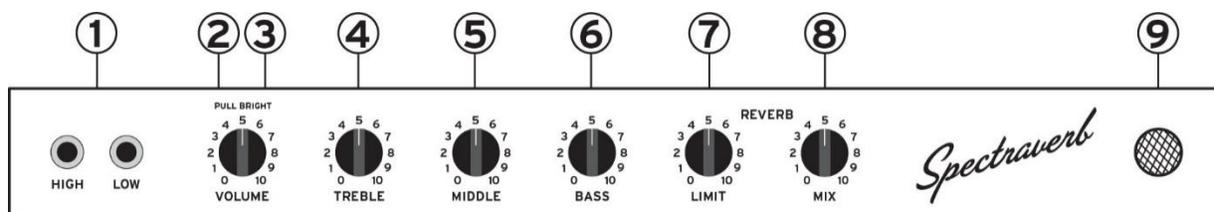
**Use only correctly rated fuses. See the rear panel and this manual for proper fuse ratings.**

**This amplifier can create high sound pressure levels. Please use proper hearing protection and/or maintain an adequate distance from the amplifier to avoid hearing damage.**

**Tube amps contain lethal voltages (even when unplugged). There are no fuses or other user serviceable parts inside. Please refer servicing to qualified service personnel.**

**Never insert any tool or other object into ventilation holes, tube sockets or other openings unless instructed to do so in this manual. Otherwise, you may come in contact with dangerous high voltages inside the chassis.**

# Front Panel



- 1. INPUT JACKS** – For maximum versatility, we have provided two input jacks (labeled High and Low). The High jack provides a bit more drive and sensitivity. The Low jack provides a slight (6dB) attenuation and is useful when a cleaner and slightly darker tone is desired, especially with high output pickups.
- 2. VOLUME CONTROL** – Use this control to adjust the volume and gain of the amp. Try using each input jack to widen the range of the Volume control.
- 3. BRIGHT SWITCH** – This switch is enabled when the volume control is pulled outward. It is used to slightly increase the brightness (treble) when playing at lower volume settings. The “pull” position will produce a bit more sparkle and treble articulation, especially when the control is set to the lower numbers.
- 4. TREBLE CONTROL** - This control varies the amount of treble.
- 5. MIDRANGE CONTROL** – The Midrange control adjusts the midrange level. Keep the setting low for vintage American tones. Turn it up for a warmer tone or to add more midrange grind at higher gain settings.
- 6. BASS CONTROL** – This control varies the amount of bass. In general, it is suggested to increase the bass setting when volume is decreased to compensate for the way the human ear hears bass at different volume levels and to allow for tighter high-volume usage. Bass should generally be turned down a bit at high volume settings to keep the low end “tight”. If playing at extremely high volume settings, the best tone can be achieved by turning the Bass control down a bit more, especially when playing on the neck pickup with humbucking pickups.

## **7. REVERB LIMITER CONTROL – An Andrews Exclusive!**

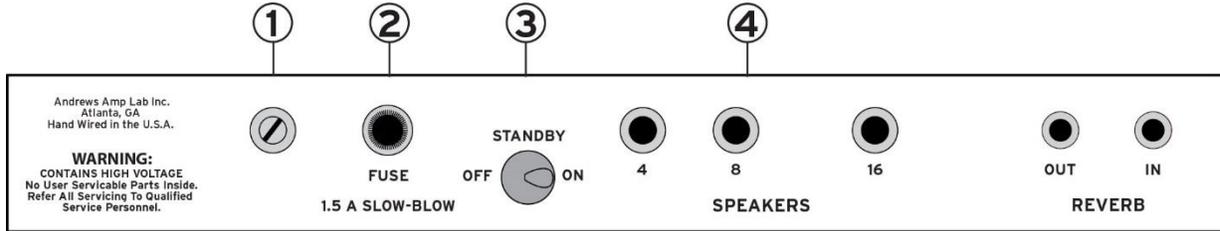
When the LIMIT control is turned fully clockwise, the reverb functions as it would on other amps with spring reverb. At this setting, you are operating without any limiting. This will provide maximum drive to the spring unit resulting in a very lush, long lasting reverberation. As you play louder or drive the amp harder with an external pedal, the reverb sound will increase. When playing cleaner or at lower volume, the reverb level will be reduced because the reverb tank is not driven as hard. When you adjust the reverb level to get the perfect reverb setting for clean tones, you may find the reverb too strong when you turn up for a solo. This can be annoying when playing dynamically so we have added the option to limit the reverb drive. This is why we have added the limit control.

When the reverb LIMIT is turned fully counterclockwise, the reverb is limited so that there will be very little increase in reverb when your guitar or pedal volume is increased. The range of settings in between “0” and “10” allow for varying degrees of limiting. Use in conjunction with the reverb MIX control (see below). The Limit control allows you to set your level for clean tones and keep approximately the same level for higher volume settings such as solos.

**8. REVERB MIX CONTROL –** For adjusting the mix of reverb signal compared to the dry signal. Use in conjunction with the Reverb Limit control (see above). On most amps, this control is labeled simply “reverb”. Turning the control clockwise increases the volume of the reverb signal as it mixes with the dry signal.

**9. PILOT LIGHT –** This light indicates when the main power is turned on. For bulb replacement, simply unscrew the red lens, grab the bulb with your fingers, push in while turning counterclockwise and release. Replace with a standard #47 bulb. The lens thread fits many standard lamp lenses and “jewels” allowing you to customize the color if you desire.

# Rear Panel



## 1. BIAS CONTROL – see below

2. **FUSE** – Always use correctly rated fuses or severe damage to the amp may occur. Refer to the rear panel for fuse ratings. Always unplug the amp before replacing any fuses. When installing a new fuse, first insert it into the cap of the fuse holder, then while holding only the cap, insert the fuse into the holder, push in and turn clockwise to lock the cap and fuse in place.

3. **POWER SWITCH** – The power switch has 3 positions. They are “off”, “standby” and “on”. The standby position keeps the tubes warmed up while silencing the amp. The amp can be warmed up in the standby mode or it can be turned fully on. The rectifier tube will provide a delay in delivering high voltage to the other tubes until they are warmed up. It is unnecessary to put the amp in standby mode before powering off. Standby mode is most useful for silencing the amp during breaks/.

4. **SPEAKER JACKS** – The Spectraverb 16 is equipped with 3 speaker jacks labeled 4, 8 and 16. These provide properly matched output impedances for 4, 8 and 16 ohm speaker cabinets. Always use the jack labeled “8” for the built-in speaker. If an additional cabinet is to be used, unplug the built-in speaker and connect the external speaker cabinet to the jack that matches the ohm rating of the cabinet. If operating two cabinets at the same time, it will be necessary to connect a junction box or “Y” cable. See chart below. *NEVER OPERATE THE AMPLIFIER WITHOUT A SPEAKER CONNECTED OR DAMAGE MAY OCCUR AND THE WARRANTY WILL BE VOID.*

5. **USING VARIOUS SPEAKER COMBINATIONS** – Always use the proper speaker jack to match the speaker(s) being used according to the chart below. When using 2 cabinets, it will necessary to connect them through a junction box or “Y” cable.

Jack	For One Cabinet	For Two cabinets
4	One 4 ohm cabinet	Two 8 ohm cabinets
8	One 8 ohm cabinet	Two 16 ohm cabinets
16	One 16 ohm cabinet	

# ***FOR TECHNICAL TYPES***

We have provided this information for those who have a technical interest, proper equipment and a DIY attitude. **CAUTION! GUITAR AMPLIFIERS CONTAIN LETHAL VOLTAGES.** If you have any doubt about your ability to safely perform this procedure, refer the job to a qualified technician!

## **TUBE REPLACEMENT**

### **Precautions:**

**Always unplug the amplifier and allow the tubes to cool completely before touching them.**

**It is absolutely necessary to adjust the bias (see below) when replacing the output tubes.**

### **When to replace tubes:**

Preamp tubes such as 12AX7 and 12AT7 will generally last for many thousands of hours but occasionally problems can develop before they “wear out”. If you hear crackling, popping, humming, ringing, or other strange noises, try replacing your preamp tubes one at a time. This may resolve the problem. Preamp tubes can be replaced at any time without any adjustment.

Output tubes usually have a shorter life. They will often start to sound bad long before they fail. If you notice that your amp is gradually losing volume, headroom or “punch”, or if you notice that low notes are sounding a little “flabby”, it might be time for a new matched set of high quality output tubes. This could happen after a several months or it might take several years depending on how much and how hard the amp is played. Don’t forget about biasing the output tubes when replacing them. Rectifier tubes generally fail all at one time causing a fuse to blow. Also, some brands of 6V6 tubes, even brand new ones, tend to develop high pitched mechanical rattles. The rattling may sound metallic or glassy and is not heard through the speaker but will be heard coming from behind the amp. This sound generally does not indicate a failure or danger to the amp but is common to modern 6V6 tubes. Installing a new pair of tubes may or may not provide better results.

Sometimes an output tube will fail before it “wears out”. A tube failure will usually result in a blown fuse. If you find a blown fuse in your amp, the most likely cause is a bad output tube or rectifier tube. If your amp is blowing fuses, try a new rectifier tube or a matched set of output tubes and adjust the bias. **Always use the correct fuse rating.**

## **Bias Adjustment Procedure:**

### **Precautions:**

- *Lethal voltages are present inside the chassis and at the tube pins. Do not open the chassis or insert any objects into any openings other than where directed by these instructions. The entire procedure can be accomplished without opening the amp.*
- *Vacuum tubes get very hot. Always allow the tubes to cool completely before touching them.*
- *When replacing output tubes, use only the very highest quality tubes or the amplifier may be damaged. For more details, see the section below regarding tube replacement.*

### **Bias Adjustment – Necessary when replacing 6V6 tubes output, regardless of brand.**

- 1) Unplug the amplifier and allow the tubes to cool. The output tubes are the two matching tall tubes labeled 6V6.
- 2) Spread open the retaining clips that hold the output tubes in place and remove the tubes.
- 3) Connect a “bias probe” (available online) to the empty tube sockets and install 6V6 tubes into the sockets on the bias probe.
- 4) Insert a small flat blade screwdriver into the adjustment control hole and gently turn the control to its mid position. The adjustment control is located on the back of the chassis between the power cord and the fuse.
- 5) Plug in the AC cord and turn on the amplifier’s main power switch. After waiting about one minute, switch the amp into play mode and observe the reading on the bias probe.
- 6) While taking care not to touch any hot tubes, insert the screwdriver into the adjustment control slot and slowly turn the adjustment until the probe shows a bias current of about 22mA (milliamps) per tube. Allow the amp to warm up for about 10 minutes and check again.
- 7) It’s a good idea to re-check the bias periodically (every 500 hours of use) as the idle current can drift over time as the tubes age.

## LIMITED WARRANTY – Valid in USA and Canada only

Andrews Amp Lab Inc. warrants this product to be free of defects in materials and workmanship for a period of five (5) years from the original date of purchase **to the original purchaser**. For subsequent owners, the length of warranty shall be for a period of 1 year *from the original date of purchase*. During the warranty period, in the unlikely event that a defect occurs, Andrews Amp Lab will at its discretion, repair or replace the product at no charge to you for parts or labor. You must provide a copy of the original purchase receipt in order to receive warranty service.

### What is covered:

- All components other than vacuum tubes and footswitches are covered for the periods listed above.
- Vacuum tubes and footswitches are covered for a period of 90 days from the original date of purchase.

### What is not covered:

- Any damage due to abuse, accident, improper AC power, lightening, AC power surge, flood, moisture, rain, solvents and other liquids, fire, smoke, improper connections, improper bias adjustment, improper service, failures of tubes not installed Andrews Amp Lab or its authorized agent, normal wear and tear
- Any amp with altered, defaced or removed serial numbers
- Any product that has been altered or modified in any way not authorized in writing by Andrews Amp Lab Inc.
- Andrews Amp Lab Inc. shall not be liable for any consequential and/or incidental damages.

How to obtain warranty service: Contact Andrews Amp Lab to arrange for service by calling 770-671-0485 or e-mailing amps@andrewsamplab.com or check the web at andrewsamplab.com or andrewsamps.com for the latest contact information. After confirming warranty status, send or bring your amp to the location specified. If shipping, you are responsible for the cost of getting the amp to us and we will pay the return shipping costs.