

# CARR AMPLIFIERS



## OWNER'S MANUAL

*Revised 22 Mar 2011*



## **The Artemus Instructions**

Thank you for purchasing a Carr Artemus amplifier. The Artemus employs pure and simple, classic 60s British AC-style circuits combined with a fixed-bias output section for added punch, and a cascode input circuit (the 12AX7 cascode circuit emulates the tone of an EF86 pentode without the microphonics associated with that type of tube). Using this classic circuit heritage as a springboard, we have refined and innovated, creating our own unique blend of circuitry which yields rich, clean tones and chunky, smooth overdrives. You will find the Artemus works exceptionally well with pedals – staying dimensional and bringing out the best from your guitar. Please take time to familiarize yourself with this manual.

**Volume** – Adjusts the loudness of the amplifier. Clean sounds are generally at settings less than 11 o'clock on the dial while higher settings yield more overdrive.

**Edge Toggle** – Adds top and upper mids for more of a bite when in the down position. The Edge Toggle will have a more pronounced effect when the Bass is set higher as there is then a fuller spectrum signal to emphasize.

**Bass** – Varies low end from lean to full. Generally, the louder the Volume, the less Bass you will need as the amp sounds increasingly full as you turn it up. To retain clarity, it is best to turn the Bass down at high volumes.

**Mid Toggle** – In the up position, the Mid Toggle engages a circuit filter to scoop some of the mids, yielding a 60s American amp vibe. In the down position, the midrange is flat – without a scoop, sounding more like AC-style British amps.

**Treble** – Varies the level of high frequencies from dark to bright.

**15/30 watt Power Switch** – The Artemus has two output power levels. When set to 30 watts, all 4 of the matched EL84 tubes are engaged, but in the 15 watt setting only the outer pair is engaged. The most appropriate setting will depend on the venue and on how much clean headroom you need for a given volume. You may want to select 15 watts so the amp can be cranked into overdrive at more moderate loudness.

**Standby** – Set the amp to Standby (switch baton *down*) before turning on the power switch (see *On-Off-On* below). After 1 minute of warm up, switch the Standby baton *up*. The amp is ready to be played. Using the Standby switch every time the amp is turned on will prolong tube life. It is not necessary to engage the Standby when powering Off the amp, only when powering On.

**On – Off – On** – Selects between two ON positions and the OFF position (middle). The two ON's are wired in opposite phase of each other. If you receive a shock from another piece of equipment (a microphone or another amp) that is not properly grounded, or if you hear static, switching to the opposite ON may solve the problem. This is sometimes called “switching polarity”.

## **Bottom Panel**

**Fuse** – The fuse is located on the bottom of the chassis by the power cord. In the unlikely event that a tube fails, the amp is protected by a 1.5 Amp slow blow fuse for 120v and 100v (North America and Japan) models or a 0.75 Amp slow blow fuse for 220v and 240v (Europe and Asia) models. Please consult us or a qualified tech for further instruction or assistance in the event of a fuse blowing.

**Speaker output jack** – The speaker output jack is located near the first power tube on the back of the chassis (see *Chassis Diagram*). The Artemus is designed to drive an 8 ohm load, and the speakers in Artemus combos and extension cabinets are configured to provide an 8 ohm load. Maximum power and tone will be realized when connected to an 8 ohm speaker or extension cabinet.

When the power is set to 30 watts, the Artemus will work with a 16 or 4 ohm speaker cabinet with the following caveat - you will lose a little power from the impedance mismatch, and the power tubes will have to work a bit harder and thus age slightly faster. Do not use a speaker configuration resulting in less than 8 ohms in the 15 watt setting. The Artemus can be damaged by attempting to drive loads less than 8 ohms in the 15 watt setting.

To run an external cabinet, turn the Artemus OFF, unplug the internal speaker (in combo amps) and plug in the external cabinet's speaker cord. Alternatively, a “Y” speaker cord can be used to run an 8 ohm external cabinet along with the internal speaker(s) of a combo amp when the power is set to 30 watts (the total impedance or speaker load in this case will be 4 ohms – see the previous paragraph).

Damage will result from operating the Artemus without a speaker load.

**Bias Adjustment Pot** – Varies the amount of bias current applied to the power tubes. We recommend setting the bias current to 140 milliamps in the 30 watt setting. See *Biasing Your Artemus* below.

**Bias Test Points** – Use with the test probes of a multimeter to measure bias current as voltage. See *Biasing Your Artemus* below.

## **Biassing Your Artemus**

The Artemus is a fixed-bias amplifier and requires a bias adjustment any time the EL84 power tubes are replaced. Please use well-matched quads of EL84s. The following power tube types are compatible with the Artemus: EL84 and 6BQ5.

To adjust the bias you will need a multimeter to measure DC voltage. These are readily available for as little as \$10 from an electronics supply store. Looking at the amp from the back, you will find two test points on the bottom of the chassis between the 5AR4 rectifier and the last EL84 power tube. Insert the red meter probe into the red test point and the black probe into the black test point. Set the meter to read DC millivolts or DC volts. Set the amp to the 30 watt setting (all 4 power tubes engaged) and turn it on in standby mode. After a minute, switch the amp out of standby into the play mode, and allow it to warm up for about 5 minutes. When the amp is in the play mode, the multimeter will display a voltage—usually near 140 millivolts (0.140 volts). As the amp warms up the voltage may drop a little. Once the amp is warmed up, you can begin to make adjustments. On the back of the chassis near the bias test points is the shaft of a potentiometer. This is the bias adjustment control. Turn it one way to increase the voltage, turn it the other way to decrease the voltage. Adjust the bias control until the meter reads 140 millivolts (0.140 volts). Unplug the meter probes from the test points and your Artemus is ready to play.

The voltage displayed on the meter may oscillate slowly up and down in very small increments. This is not uncommon and is due to fluctuations in your household voltage.

Our factory bias point is 140 ma. You may wish to experiment with setting the bias a little higher or lower. Lower bias current will give a cleaner sound, and higher settings will give more break-up. We suggest staying within the range of 130 ma to 150 ma.

Measuring bias current directly can be too complicated and even dangerous for the average amp owner. The method described above is safe and easy. By measuring voltage across an internally mounted 1 ohm resistor, voltage and current are in one-to-one correspondence: 1 volt = 1 amp, therefore 140 millivolts = 140 milliamps of bias current (each of the 4 tubes draws a moderate 35 ma totaling 140 ma).

**Note:** The bias pot can be inadvertently turned if you are reaching up into the back of the cabinet. If you think you may have turned the bias pot by mistake, simply follow the above directions to rebias the Artemus.

If you are uncomfortable with the above instructions, please see a qualified electronics technician for bias adjustments.

*Carr Amplifiers selects and tests the finest current production tubes specifically for each amplifier model. Caution should be used when buying replacement tubes from any dealer who does not have a return policy as all tubes can have problems (NOS tubes are susceptible to microphonics and failure too).*

## **Recommended Settings**

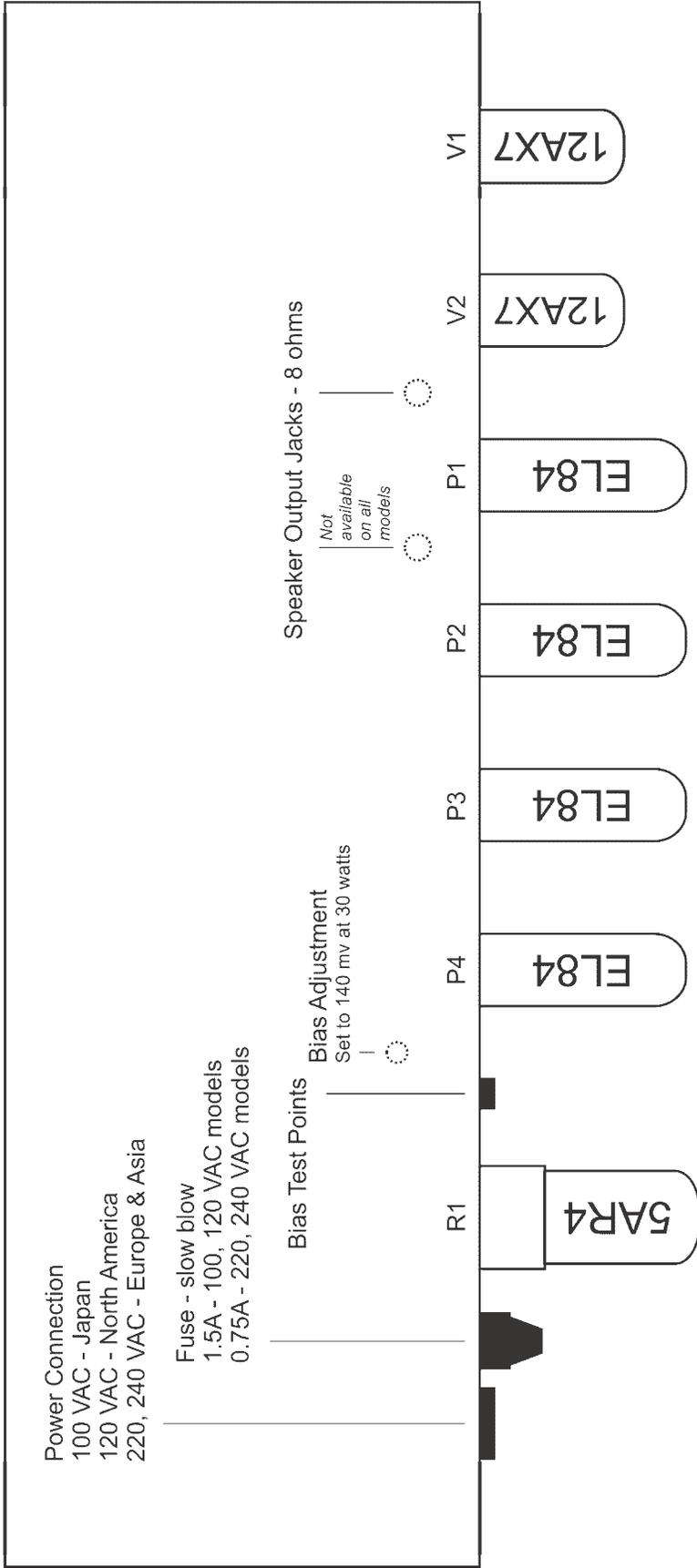
Both of the Artemus power levels will work well with the settings below. You can overdrive the amp at lower listening levels when on the 15 watt setting, though the amp has more overdrive potential and a somewhat fuller sound on the 30 watt position. As you try these settings, you will need to tailor the tone controls to your guitar. In general, humbucking pickups have more bass and volume output compared to single coil types. For humbuckers, less bass and less volume on the amp will keep you sound cleaner. The Mid toggle will affect the clean headroom of the amp. When in the down position (full mids), the amp will overdrive more quickly. In rooms with full bass response, you may like the amp sitting on a chair for better dispersion. Conversely, the Artemus will have more low-end when set on the ground near a wall or in a corner. Please use quality guitar cables for the best tone.

Sound	Volume	Edge	Bass	Mid	Treble	15/30 Watt
60's American Clean						Either
Pushed American						Either
AC Drive						Either
Direct Drive						Either



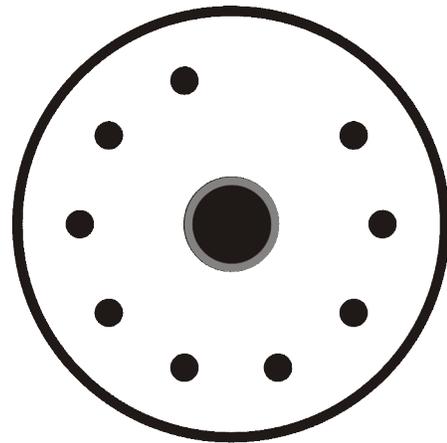
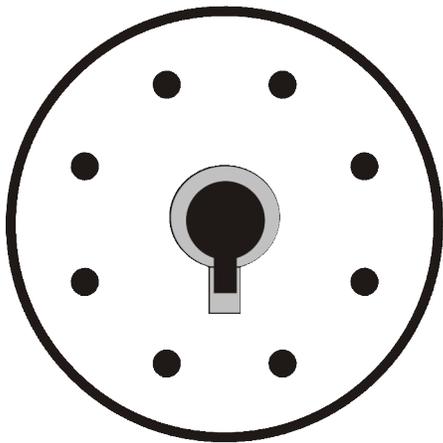
# CARR AMPLIFIERS CHASSIS DIAGRAM

Items marked in a dashed line ( ..... ) are on the back of the chassis.



# IMPORTANT REMINDERS

- Please keep the original packing materials in case your amp needs to be shipped for service.
- When inserting the rectifier tube, the tube key must line up with the tube socket keyway.
- When inserting power and preamp tubes, the tube pins must line up with the tube socket holes.



- Do not insert tubes with missing or damaged pins. Do not insert an EL84 into a 12AX7 socket or vice versa. See the Chassis Diagram or Tube Chart sticker for the correct tube placement.
- To reduce the risk of electric shock, keep the unit away from excess moisture.
- No user serviceable parts inside.
- Potentially lethal voltage present.

# CARR AMPLIFIERS WARRANTY

**All Carr amplifiers are warranted to be free from defects in workmanship (solder joints, hardware assembly etc.) for the lifetime of the original owner, and free from defects in materials (including cabinet) for three years from the date of purchase by the original owner, provided that:**

- The owner mails the signed warranty registration card (next page) and a copy of the original sales receipt to Carr Amplifiers within thirty days of purchase.
- Problems are not the result of misuse, abuse, tampering, circuit modification, improper tube installation (incorrect orientation of tubes can damage the amp), or spilled beverages, as these will void the warranty.
- The amplifier is shipped to Carr Amplifiers in the original packing materials with freight paid by the purchaser. We pay the return shipping after the warranty work is complete.

**Tubes, speaker(s), and reverb tanks carry a ninety-day warranty, and are subject to the same terms and conditions as above.**

Please call us at 919-545-0747 if you have a warranty claim. Be prepared to provide the model and serial number of your amp. We will issue a Return Merchandise Authorization number (RMA#) before the amplifier is shipped for service.

*For customers outside of North America, warranty and repair service is provided through the dealer where the amp was purchased.*

**Shipping address:**

Carr Amplifiers  
23 Rectory St., Suite E  
Pittsboro, NC 27312

**Mailing address:**

Carr Amplifiers  
433 W. Salisbury St.  
Pittsboro, NC 27312

**Tel:** 919-545-0747

**Fax:** 919-545-0739

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