

*Two-Rock*

*Custom Clean*

OWNER'S MANUAL

Thank you for your purchase of a *Two-Rock* amplifier from *K&M Analog Designs, LLC*.

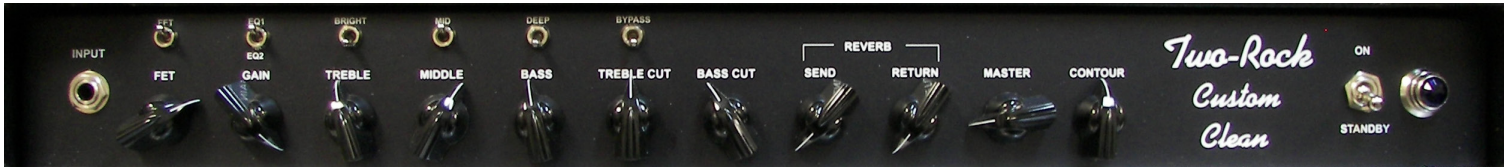
As a discerning guitarist, you know the road to great tone begins with great components.

Our Classic Design, carefully selected parts and hand-built approach combine to make an extremely versatile instrument.

Please take the time to read this manual. We hope it will answer any questions that you may have.

We extend a warm welcome to you as a member of a select group of musicians who have chosen a Two-Rock amplifier.

# Front Panel Functions



**Input Jack-** High impedance input to the amplifier. Plug in your instrument here.

**FET Gain-** The FET (Field Effect Transistor) feature consists of a single stage high impedance preamp/buffer. This feature can be switched in and out via the front panel switch (“ON” is “up” position) or footswitch. This mode offers an additional buffered gain stage, and can be used to buffer the input from high output pickups or increase the signal of low output pickups. The FET GAIN control controls the amount of signal fed to the following stage(s){gain control}

**FET Switch-** enables or defeats the FET feature. (“ON” is “up” position)

**EQ1/EQ2-** This switch allows you to choose between 2 completely different equalization settings. **EQ1** is a lower gain setting, with extended midrange and bass available when used in conjunction with the middle and bass controls as well as the deep switch. This setting is suitable for any style requiring a pure clean tone with a nice round bottom and plenty of headroom.

**EQ2** is a higher gain setting, allowing a greater signal level to pass to the lead channel. This setting is suitable for any style requiring a clean to slightly distorted tone in clean mode, and more gain in the lead mode.

**Gain-** Adjusts the overall gain of the amplifier. Start with this control in the 12 o’clock position.

**Treble Control-** Adjusts the high frequency response. In the full counter-clockwise position, high frequencies are bypassed to ground. In the full clockwise position, high frequencies are allowed to pass to the next gain stage.

**Bright Switch-** Boosts the high frequency response. This is most effective when the input gain is set at 12 o’clock or lower. The effect is less dramatic as the input gain control is adjusted past the 12 o’clock position.

**Middle Control-** Adjusts the mid-range response. In the full counter-clockwise position, the tone will be somewhat “scooped” of mid-range response, emphasizing the highs and lows. In the full clockwise position, mid-range frequencies are allowed to pass to the next gain stage.

**Mid Switch-** Boosts the mid range frequency response.

**Bass Control-** Adjusts the bass response. In the full counter-clockwise position, low frequencies are cut. In addition, the response of the treble and mid-range controls is greatly reduced. In the full clockwise position, low frequencies are allowed to pass to the next gain stage.

NOTE: All switches are ON in the “up” position (except reverb switch, see description)

**Deep Switch-** Boosts the low and low-mid frequencies. This is a low frequency contour switch, changing the low and low-mid response.

**Treble/Bass Cut-** The treble and bass cut controls are 7 position switches, offering more tone shaping(EQ adjustment) if desired.

**NOTE-** With the the treble cut control in the full counter-clockwise position, BOTH controls are disabled. Turning the TREBLE CUT control clockwise reduces high frequency response. Turning the BASS CUT control clockwise reduces the bass response.

**Master-** Adjusts the output level of the amplifier.

**Bypass Switch-** This switch bypasses the tone controls, increasing both level and mid-range response. To enable footswitch control of this function, switch must be in the down position.

**Reverb Send-** The reverb drive control determines the amount of signal applied to the reverb tank. Low settings will create a very open, small room reverb effect with a short decay time. Advancing the control clockwise increases the signal applied to the driver, and a very saturated effect with a sharp attack and a long decay can be obtained.

**Reverb Return-** The reverb return control mixes the reverb effect signal with the dry signal. At full counterclockwise rotation, the reverb effect is defeated. Using the return control in conjunction with the reverb drive control, a wide range of natural reverb effects can be produced.

**Bypass Switch-** This switch bypasses the tone controls, increasing both level and mid-range response. To enable footswitch control of this function, switch must be in the down position.

**Contour Control (Presence)-** The contour control is an active wide band sweep. In the 12 o'clock position, the amps' frequency response is flat. Counterclockwise rotation reduces high end response and increases low frequencies. Counterclockwise rotation decreases low end and increases the high frequency response. This control is very useful for maintaining preamp tone control settings, while allowing a global adjustment to compensate for differences in room acoustics, speaker cabinets, or bright to dark guitars (PRS Humbucker to Strat, for example). This control also actively reduces the articulation available, allowing a softer setting, or extremely open and revealing, depending on your individual style and requirements.

**Stand-by Switch-** Should be in the "down" or "stand-by" position when you apply power to the unit. After a few seconds, place the switch in the "up" position to use the amplifier. You may leave the unit "powered up" and place this switch in the "stand-by" position to mute the output.

**Indicator Lamp-** This lamp will illuminate when the power switch is in the "up" position, indicating the unit is receiving A/C power.

NOTE: All switches are ON in the "up" position

# Rear Panel Functions



**A/C Input-** Connects the amplifier to A/C power via the power cord supplied. Unless otherwise specified, your amplifier is designed to operate on 120 volts A/C, 60 cycles, ONLY.

**Fuse-** See Fuse Chart

**Power Switch-** Turns power on.

**Power Selector** - On 50 Watt Models, the HIGH power mode is Class A/B, the LOW power is Class A. On 100 watt (4x6L6) models, the HIGH power mode is 100 watts, the LOW power mode is 50 watts. On 150 watt models, the HIGH power mode is 150 watts, the LOW power mode is 75 watts.

**Speaker Output Jacks-** There are 3 speaker output jacks; 4,8, and 16 ohms. **NEVER OPERATE YOUR AMPLIFIER WITHOUT A PROPER SPEAKER LOAD CONNECTED.** Be sure to match the impedance of your cabinet with the impedance (output) of the amplifier.

**Footswitch Jack-** The footswitch connects here. The FET function, tone bypass, and Reverb defeat functions can be activated via the footswitch. The respective front panel switches(FET and bypass) must be in the “off,” or down position, to enable the footswitch functions.

**Effects Send-** Use this jack to send the amplifiers signal to outboard effects.

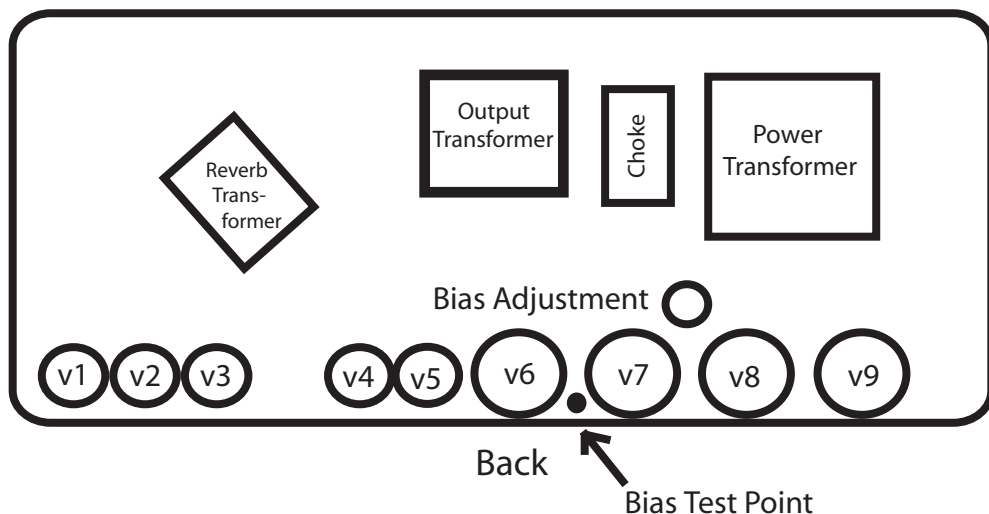
**Effects Return-** Use this jack to connect the output of your effects to the amplifier.

**S/N-** Your serial number is located here. We strongly suggest that you record this number and have it handy in case you need service, or in the event that your amp is lost, stolen, or damaged.

# Tube Complement

Front

- V1- Clean Preamp 12AX7
- V2- Reverb send, reverb return 12AX7
- V3- Reverb drive 12AT7
- V4- Reverb /clean mix 12AX7
- V5- Phase Inverter 12AX7
- V6-V9- 6L6GC (50/100 Watt) and KT88 (150 Watt) Output



Each fine production tube is tested and matched to our exacting specifications. External bias adjustment and test points are located on the chassis near the output tube sockets. A digital voltmeter and small screwdriver are required for bias adjustment.

## BIAS ADJUSTMENTS:

Power up unit and connect proper speaker load.

Set master volumes and effects return controls to zero.

**DO NOT** apply any signal to the input during the biasing procedure!

Take unit off standby and allow a few seconds for the circuit to stabilize.

Set voltmeter to Millivolt scale (or lowest volt scale 60 millivolts=.060 volts.)

With meter grounded to chassis and + probe at test point, measure voltage.

A reading of 0.055 to 0.060 volts is normal for 50 Watt amplifiers with (2) 6L6's. A reading of 0.115 to 0.120 volts is normal for 100 Watt amplifiers with (4) 6L6's. If not in this range, adjust by turning bias screw SLOWLY a small amount. **Do not set above .070!**

For other tube types (5881, 6550, EL34) check with the manufacturer or contact us for recommendations.

Settings higher than .065 with 6L6 tubes may cause premature tube wear and possibly damage the amplifier.

Keep in mind that tubes vary in quality, and some tubes can handle upwards of 40 ma each (a reading at the test point of .080!) However, to be on the safe side, use the above as a guide.

**NOTE:** Some amps are equipped with 2 bias pots, one for low power, the other for high power. Adjust bias in both hi and low power settings!

**NOTE:** Some amps are Class A/AB. In LOW POWER MODE(CLASS A), you will not get a proper reading-adjust bias in high power mode only.

**WARNING! No user serviceable parts inside! Refer to qualified service person only.**

LINE CORD- For your safety, connect to grounded A/C receptacle only.

# Fuse Chart

All Fuses are 3AG Type 250 Volt, SLO-BLO

## **Export 100 Volt**

3.5- 100 Watt Signature

2.8- 50 Watt Signature

## **Domestic Fuses:**

3.25- 100 Watt Signature

2.5- 50 Watt Signature

## **Export 220, 230, 240 Fuses:**

1.6- 100 Watt Signature

1.25- 50 Watt Signature

# Footswitch Functions



FET	-	Blue LED
BYPASS	-	Red LED

*K&M Analog Designs* amplifiers are brought to you by Bill Krinard and Joe Mloganoski.

We know your new *Two-Rock* amplifier will provide many hours of enjoyment and inspiration in the years to come. This manual is a resource for some of your questions. Please contact us with any other questions or comments that you may have. We look forward to hearing from you!

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#### PRECAUTIONS:

DO NOT expose to rain or any other moisture.

DO NOT use cleaning solvents. Wipe exterior with a clean, dry cloth only.

Refer servicing to a qualified service technician.

This is a product of

*K&M Analog Designs, LLC*

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