Two-Rock

Emerald 50

Amethyst 50

Sapphire 100

Owner's Manual

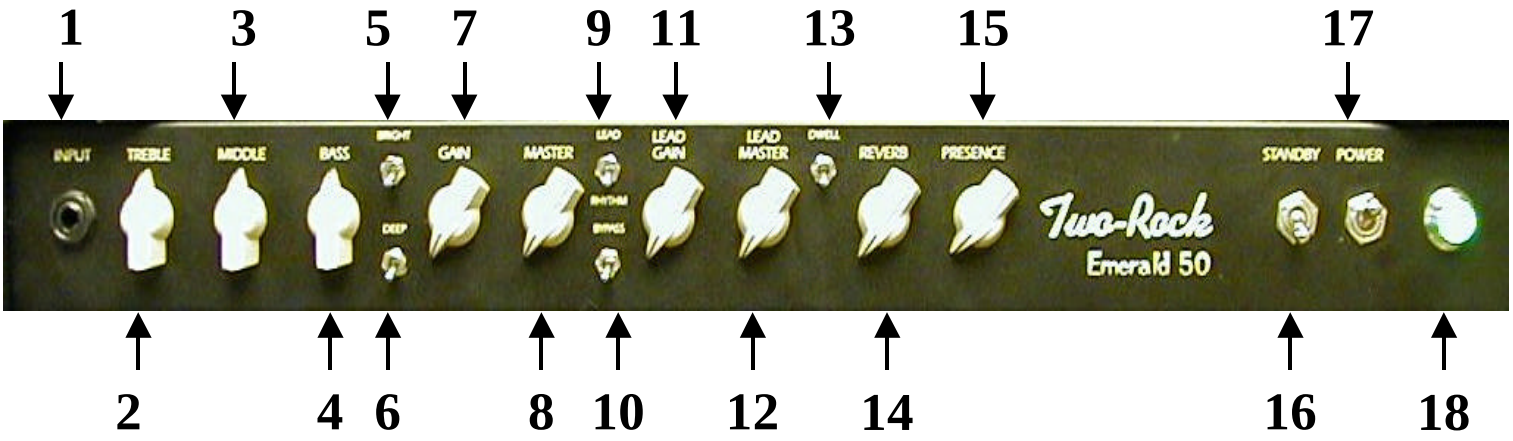
Thank you for your purchase of a Two-Rock amplifier from K & M Analog Designs.

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 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

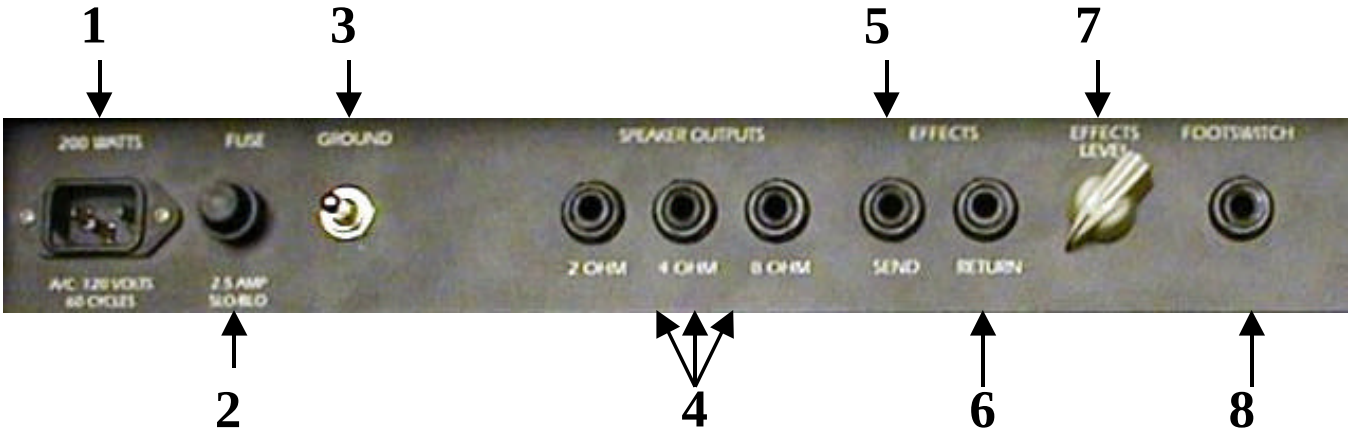


1. **INPUT JACK-** High impedance input to the amplifier. Plug in your instrument here.
2. **TREBLE CONTROL-** Adjusts the high-frequency response. In the full counter-clockwise position, high frequencies are bypassed to ground. In the full clockwise position, high frequencies are allowed to pass to the next gain stage.
3. **MID-RANGE 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.
4. **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.
5. **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.
6. **DEEP SWITCH-** Boosts the low and low-mid frequencies. This is a low frequency contour switch, changing the low and low-mid response.
7. **INPUT GAIN-** Adjusts the overall gain of the amplifier. Start with this control in the 12 o'clock position. Keep in mind that the amount of gain set here determines the signal level feeding the lead channel. Low gain settings of this control will require higher lead gain settings for the same amount of overdrive.

8. **CLEAN CHANNEL MASTER VOLUME-** Adjusts the output level of the clean channel.
9. **LEAD CHANNEL SWITCH-** Sends the instrument signal through the lead circuit, adding extra stages of gain to the signal and enabling the lead gain and lead master controls. To enable foot switch control of this function, switch must be in the down position.
10. **BYPASS SWITCH-** Increases the mid-range response. To enable foot switch control of this function, switch must be in the down position.
11. **LEAD GAIN-** Adjusts the input level (gain) of the lead channel. At lower settings, a slightly overdriven tone can be achieved. As the control is adjusted clockwise, the overdrive effect increases.
12. **LEAD MASTER-** Adjusts the output level of the lead channel.
13. **DWELL SWITCH-** Defeats an internal feedback circuit. The effect is subtle; you will notice a slight increase in high-frequency response and a decrease in dimensionality and articulation.
14. **REVERB-** Mixes the dry signal with a high quality spring-type reverberation effect. This effect is defeated with the control in the full counter-clockwise position.
15. **PRESENCE CONTROL-** Adjusts the contour of high-frequency response. The high-frequency response will increase as you advance the control counter-clockwise.
16. **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.
17. **POWER SWITCH-** Turns the power on.
18. **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



1. **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.
2. **FUSE-** 3 AG Type, slow blow fuse. Refer to the legend below the fuse holder for the proper fuse rating for your amplifier. (50 watt-2.5 amp / 100 watt-3.5 amp)
3. **GROUND SWITCH-** Normally left in the center (Off) position. If you encounter excessive A/C hum or ground loop noise, try the switch in the other 2 positions.
4. **SPEAKER OUTPUT JACKS-** There are 3 speaker output jacks- 2, 4, and 8 ohm. 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.
5. **EFFECTS SEND-** Use this jack to send the amplifiers signal to outboard effects.
6. **EFFECTS RETURN-** Use this jack to connect the output of your effects to the amplifier.
7. **EFFECTS LEVEL-** Adjusts the return signal level. It also acts as a master volume control. Do not set fully counter-clockwise, as this will shut off signal to the output section, resulting in no output level. Normally this control should be set at the 12 o'clock position.
8. **FOOTSWITCH JACK-** Connect the foot switch assembly here to enable remote switching of the lead/rhythm and bypass functions. NOTE: Both the "Lead" and "Bypass" front panel switches must be in the "down" position to enable footswitch function.

FOOT SWITCH

Lead
(Blue LED)

Bypass
(Red LED)

TUBE COMPLEMENT

V1- 12AX7, Rhythm channel
V2- 12AX7, Lead channel
V3- 12AT7, Reverb driver
V4- 12AX7, Reverb / effects
V5- 12AX7, Phase inverter
V6, V7- 6L6, Output
V8, V9- 6L6, Output (100 Watt only)

Tubes are numbered from right to left as you face the rear of the amp. Each fine production tube is tested and matched to our exacting specifications. Individual bias controls are provided for each output, as well as phase-balance adjustment. This ensures maximum tube life, power, and performance.

NOTE: Please do not attempt to adjust tube bias or phase balance. Refer service to qualified service person only.

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

GETTING STARTED

This is designed to be a simple guide. You will, most likely, find your own "sweet spots". Pictured here are some examples of sample settings, including key points to keep in mind.

The input gain (clean channel) will affect the overall gain of the lead channel because the clean signal is fed directly into the lead circuit. For example, low settings of the input gain will keep the clean channel "clean" and require a much higher lead gain setting to put that channel into overdrive. Conversely, setting the input gain control past the 2 o'clock position will send a much hotter signal to the lead channel, requiring a lower setting for the same level of overdrive.

EXAMPLE 1

These settings will give you a clean, fendery rhythm sound and a slightly edgy lead tone. Switching to bypass in rhythm will boost the mids and make it a little honky, but still clean. Bypass in lead will add crunch and mid-boost.

EXAMPLE 2

These settings will give you a more mid-boosted, gainier tone in both rhythm and lead modes.

EXAMPLE 3

These settings will give you a high-gain clean channel that will be very sensitive to the players touch, especially with humbuckers. Playing hard will make the clean channel distort at these levels. In lead this is a fairly high-gain setting and going into bypass will really make the amp sing. For added clarity and harmonics, open the feedback loop (dwell switch) and enjoy the beautiful, rich overtones.

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 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

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Serial Number:_____