

Model RT-2100

MosValve™ Real Tube Combo Amp

OWNER'S MANUAL

Congratulations on purchasing the most innovative, unique and best performing combo amp in existence. With world-renowned and patented MosValve circuitry for power coupled with a "new design" 4-stage TUBE front-end preamp, your new combo is truly a major advance in the art of guitar sound production.

Please take some time to fully familiarize yourself with the many design features of this amp. It far exceeds the limits of comparably-priced conventional equipment.

FEATURES

- 4-Stage TUBE preamp section. Tubes are individually hand and ear-checked for low microphonics and hum. We reject over 50% of the tubes we receive from our suppliers.
- DC filament operation of preamp tubes to eliminate the common tube hum caused by conventional (and cheaper) AC designs.
- Lower plate voltages insure greatly extended tube life. BK Butler is the pioneer of low-voltage designs for vacuum tubes. Tubes typically will not have to be replaced for 2-3 years under normal conditions.
- Continuous anti-feedback circuitry eliminates over 60% of the typical "squeal" or HF screech apparent in many amps. This allows higher volume levels at closer proximity to the cabinet, as well as a much "fatter" sound in close quarters.
- Two channel operation plus a foot-switchable "stack" function in Channel 1 gives versatility of 3 channels.
- Separate EQ sections for each channel. Channel 1 features a radically expanded range for overdrive incorporating true active response with passive musical tonality.
- MosValve power section. Identical to a single channel of our famous "RT-962" rack-mount MosValve power amplifier. Since its introduction MosValve has become the new standard of musicality by which all other amps beg to be judged.
- MosValve powered full-sized Accutronics® spring reverb system actually driven by a separate onboard 15 watt MosValve power amp. This reverb system is the closest thing to the classic Fender™ style reverbs from the past and utilizes the same specs and reverb tank.
- Special British-coned, USA assembled speakers or optional Celestions™ insure smooth classic response over the entire spectrum of guitar tonality and playing styles.
- Variable send-receive effects loop. Easily adjusts to virtually any signal level of floor or rack-mount device on the market regardless of input/output impedance.
- Front panel "Mix" control allows mixing of processed signal ("wet") from the input of the effects loop and the original ("dry") pre-effect signal. This type of signal mixing is usually done via an outboard mixing console and adds dramatically to the flexibility of effects use.
- Rugged Ozite covered all-plywood enclosures for exceptionally long life and good acoustic isolation properties.

NOTE: This amp is destined to become a classic. Take a few minutes to read the rest of the information. Again, accept our thanks and appreciation for your purchase.

FRONT PANEL FEATURES (left to right)

CHANNEL SWITCH — Selects either Drive (Red LED) or, Clean (Green LED) channels. Switch is bypassed and inoperative when footswitch plug is inserted into either, footswitch jack on the rear panel.

INPUTS — Input 1: 0 dB. - Most sensitive input. Input 2: -8 dB. - Less sensitive input for Steel guitars and extra-high output pickups. NOTE: Inputs have true active summing, therefore two guitars of any impedance may be summed together by using both inputs. It is also possible to use a "Y" cord to give even more gain. (Single guitar Y-ed into the two inputs).

DRIVE CONTROL — Controls gain of tube #1. Tube #1 is biased for a thinner, articulate Tube Driver-like tone reminiscent of British amps. At control settings lower than 3, tube #1 becomes virtually clean allowing the Stack control to completely control the overdrive level through tube #2.

STACK CONTROL — Controls gain of tube # 2. Tube #2 is biased in a more "Blue Tube" manner. Those knowledgeable with the famous Tube Works model 922 and 924 rack-mount will hear a lot of familiar tones as this control is added. As you add more "stack" the sound will become fatter and fatter. This is of great help when practicing at lower volume levels to maintain a well-balanced tone. NOTE. This control is switchable via the back-panel footswitch jack labeled "2". The footswitch will switch between the "0" setting to whatever level you preset the Stack control to. This adds 3rd channel capability to your amp.

Hi, MID, LO — Drive channel EQ. This is an entirely new concept for combo amplifiers. Each control is a separate passive filter summed actively into the (also) active, Master volume. This configuration adds great flexibility and much expanded range over conventional passive designs and prevents any crosstalk into the clean channel when overdrive is switched off. Inter-control loading is greatly reduced as well.

NOTE: Frequencies: Hi 3.5 KHZ (upper shelving)
MID 800 HZ (center)
LO 150 HZ (lower shelving)

ALL HAVE PASSIVE ROLL-OFF CHARACTERISTICS.

MASTER — Active master volume control for the Drive channel. No leakage of signal is present with this master at 0. This insures good definition at the ultra-high gain levels this preamp is capable of with its Stack configuration.

VOLUME — Clean channel gain. This channel is also capable of classic overdrive with the use of its master control.

MASTER — Master volume for Clean (Green) channel.

HI, MID, LOW — Classic Tube Works passive EQ. This EQ is identical to the Channel 2 EQ section found in the Tube Works 922/924 Rack-Mounts. Warmth and tone are the key emphasis for this EQ.

NOTE: Frequencies: Hi 3.5 KHZ (upper shelving)
MID 800 HZ (center)
LO 150 HZ (lower shelving)

ALL HAVE PASSIVE ROLL-OFF CHARACTERISTICS.

EFFECTS MIX — This control mixes the signal present at the "Effects In" Jack on the rear panel. Rotating the control towards "Wet" mixes more and more of the effect's sound while "Dry" mixes more of the pre-effect signal. NOTE: This control functions ONLY when there is a plug inserted into the "Effects Return" jack.

REVERB — Adds desired reverb intensity. Reverb is switchable when using Footswitch jack #1.

REAR PANEL FEATURES (left to right)

AC CORD — Your amp is either wired for 120 VAC or 220-240 VAC. It is possible to rewire for either voltage. Contact factory for directions. **WARNING!! Only a qualified technician should ever attempt this or any other service requiring the chassis to be removed from the cabinet!**

FUSE — Use fast-blo 4 Amp for 120 VAC or fast-blo 2 Amp for 220-240 VAC.

SPEAKERS — Output for speakers. Be sure not to load the amplifier with less than 4 ohms minimum impedance. Operation with less than 4 ohms will eventually cause failure due to overheating.

VENT SLOTS — It is imperative that this amp receives adequate ventilation. Your MosValve power section normally produces more heat than typical solid-state circuits. Treat your investment right — *LET IT BREATHE!*

EFFECTS LOOP — This system provides ultimate flexibility and control for your effects, regardless of type. See the section entitled. "How to properly use the Effects Loop" for further description.

FOOTSWITCH — The two footswitch jacks are provided for switching Channel, Reverb and Stack. Jack #1 is for Reverb and Channel switching. Jack #2 is for Stack and Channel switching. The footswitch supplied will switch either combination of these functions depending on which jack is used. We decided to offer a 2-switch footswitch and stick with a common stereo 1/4" jack rather than going to a less common connector and a 3-switch footswitch. This was for three reasons. First, a 3- button footswitch is more confusing to use on-stage than 2. Second, many musicians leave reverb on all the time and the footswitch function is not as important to them anyway. Third, we would have to raise our retail price in order to produce a 3-switch footswitch. The increase in cost would be more than you would pay for a single footswitch at your dealer. If you find that you must switch all 3 functions, here's how to do it:

1. Plug the Tube Works footswitch into jack #1.
2. Obtain a regular push-on, push-off footswitch with a 1/4" plug and plug into jack #2.

You will now have Reverb/Channel on the Tube Works footswitch, and Stack on the single footswitch.

NOTE: Channel will not function if you reverse the two footswitches.

We have been asked, "Where are the tubes?"

Answer: They are inside the chassis for protection and shielding as they generally will not require any attention for years outside access is not a necessity.

WARNING NOTICE — Use of this device constitutes an agreement. See "Warranty" section for further details.

OPERATION NOTES

- This amplifier was designed primarily for musical instrument amplification. It will add warmth and definition to your sound
- Use with speakers or cabinets capable of at least 100 watts RMS continuous power. Remember that Mos-Valve can easily produce 100 watts per channel under typical overdrive conditions. At least 100 watt speakers or cabinets are highly recommended if you intend to use the amp at high power output.

MANUFACTURER IS NOT RESPONSIBLE FOR ANY SPEAKER FAILURE WHILE USING THIS EQUIPMENT. THIS INCLUDES THE OEM SPEAKER SUPPLIED WITH THE AMP. SINCE TUBE WORKS IS NOT THE MANUFACTURER OF THIS SPEAKER, THE OEM MANUFACTURER'S WARRANTY APPLIES. BURNED VOICE COILS ARE NOT COVERED UNDER ANY WARRANTY.

- A certain amount of heat during operation is normal. The MosValve amplifier is biased in a manner that even when idling there is some heat present. It is best to keep the amplifier away from obstructions which might restrict normal air flow through the cabinet. Never block the vents on either the bottom or back of the chassis.
- Never load the speaker outputs with less than 4 ohm loads. These can be a single speaker cabinet or a combination of two cabinets including the combo enclosure itself. Combinations: One 4 ohm (or higher) or two 8 ohm (or higher) NOTE: Speaker supplied with your amp is 100 watts, 8 ohm.

HOW TO PROPERLY USE THE EFFECTS LOOP

Much confusion exists among musicians as to the proper use of the variable send/receive effects loop. Following these simple procedures will help you to set the levels for the best operation of your particular effects chain.

1. Set both "Send" and "Receive" controls at "5".
2. Insert your effect and activate it. If your effect has input/output levels, set them at "unity gain" - same level activated as bypassed. Use "instrument" level on rack effects.
3. While in the clean channel, play a few chords at normal volume and increase or decrease the "Send" level to a point where there is no distortion noticeable through the effect. If your device has clipping indicators, set the "Send" level just below the clipping level. NOTE: For best S/N (Signal to Noise) ratio, it is important to have as "hot" a drive level as possible. The most common mistake made by musicians is to "send" too low a level to effects, and then "receive" with too "hot" a level. All the noise present in the output circuitry of the effect and the connecting cords are then amplified, and the noise level is increased. Of course, nobody wants more noise than is absolutely necessary.
4. Set the receive level to match unity gain. (Effects device activated level bypassed level). Of course, if you want, it is permissible to increase receive gain above unity but noise will be the result as well as less headroom for the power amp section.
5. A final check for effects loop matching vs. normal levels in your amp is to play a chord then quickly remove the "Effects In" plug and see if there is an increase or decrease in volume. Then further adjust the receive gain to match the normal level within the amp to keep over-all headroom and power at optimum.
6. The use of multiple effect complicates the procedure greatly but the following rule also applies. Simply think of the output of each effect as the "send" for the following unit. GENERAL RULE OF THUMB: "Send with as much level as you can without distorting the effect. "Receive" with the minimum level possible to reach unity gain with or without the effect activated.

NOTE: When using some types of effects such as distortion or overdrives, it may be useful to increase the "Send" level above normal to cause more drive within the device. It is unlikely that damage either to your amp or effects devices would ever occur within the range of levels possible in the effects loop, but the settings affect headroom, distortion level and S/N ratio. — And, when all else seems to make no sense, USE YOUR EARS!!! (That's what designers and engineers ultimately rely on)

WARRANTY

Your MosValve combo amp is warranted for a period of ONE FULL YEAR against defects to the original registered owner provided he/she has returned a completely filled-out OWNER'S REGISTRATION CARD. This warranty covers parts and labor only, shipping charges remain the sole responsibility of the owner. Damage due to modification or abuse is excluded from this warranty. Before returning any unit for service, a RETURN MERCHANDISE AUTHORIZATION NUMBER (RMA#) must be obtained by calling 480-941-0705.

WARNING !!!

As indicated on the rear panel of the MosValve Combo, the following are additional warnings:

- The use and operation of this device constitutes an agreement of full release of any and all liability connected with such use. Only personnel familiar with high-power audio equipment should attempt to operate this device.
- In addition, by the use of this device, the user agrees to hold Tube Works, its designers, sales agents and all other affiliates and related parties harmless in the event of any accident, injury, damage or loss resulting from such use.
- Manufacturer's sole responsibility is to provide a warranty on the specified performance of the product under normal conditions for a one-year period.

A division of Genz Benz Enclosures, Inc.

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