



RK1 NoiseDrum

user's manual

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Please read all of this before using it!

RETAIN INSTRUCTIONS: The safety and operating instructions should be retained for future reference.
HEED WARNINGS: All warnings on the RK1 and in the operating instructions should be adhered to.
FOLLOW INSTRUCTIONS: All operating instructions should be followed.

WATER AND MOISTURE: The RK1 should not be used near water (e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool etc.). Care should be taken so that liquids are not spilled onto or near the enclosure.

VENTILATION AND COOLING: The RK1 normally operates warm to the touch. The tube and a zener diode inside the module generate considerable heat. It **MUST** be situated so that its location or position does not interfere with convective cooling. The RK1 **MUST NOT** be used on a bed, sofa rug or similar surface which may prevent proper cooling. It is **NOT** a toy. If the RK1 is mounted in a synthesizer rack or other built-in installation, space *must* be left around it to allow convection cooling. Use great caution if handling the RK1 when it is powered up.

HEAT: The RK1 **MUST** be situated away from heat sources such as radiators, heat registers, stoves, or other devices (including power amps) that produce heat.

POWER SOURCE: The RK1 should be connected to a power supply **ONLY** of the type described in the operating manual or as marked on the RK1. **WARNING:** Each RK1 requires +12v at 300 mA and -12v at 10 mA, with a brief transient consumption of 800 mA at first power-on. The cabinet power supply *must* be able to deliver this current. Many switch-mode power supplies will have difficulty powering Metasonix tube modules. **WARNING:** The tube gets hot in normal operation and should not be touched after 10 minutes with power applied.

CLEANING: The RK1 should only be cleaned with a soft cloth moistened with water. Disconnect all possible power supplies before attempting to clean or handle.

NON-USE PERIODS: The RK1 should be shut off when left unused for a long period of time.

MECHANICAL: protect the RK1 vacuum tube from damage. Use of a Eurorack cabinet with a removable lid tall enough to protect the tube is recommended, if the synthesizer is to be moved or transported.

DAMAGE OR TUBE REPLACEMENT REQUIRING SERVICE:

The RK1 should be serviced by qualified service personnel when:

- The power supply has been damaged;
- The RK1 has been dropped, physically damaged, or subjected to force;
- Liquid has been spilled onto the RK1 or it has been exposed to rain;
- The RK1 does not appear to operate normally or exhibits a marked change in performance.

SERVICING: The user should not attempt to service the RK1. All servicing should be referred to qualified service personnel.

METASONIX LIMITED WARRANTY and standard legal disclaimer

Thank you for purchasing this Metasonix product. The following terms and conditions apply:

1. Warranty period is for ONE YEAR from date of purchase with proof of purchase submitted. Warranty covers electrical failure of vacuum tubes and gas-filled tubes, except in cases explained in 3 below.

2. Operating instructions must be followed. This device was intended **ONLY** for use by **AUDIO AND MUSIC PROFESSIONALS**.

IT IS NOT INTENDED FOR USE BY ORDINARY CONSUMERS!!

Product must not have been damaged as a result of defacement, misuse, abuse, neglect, accident, destruction or alteration of the serial number, improper electrical voltages or currents, repair, alteration or maintenance by any person or party other than our own service facility or an authorized service center, use or installation of non-Metasonix replacement parts in the product, or the use of this product outside of the U.S.A. or Canada (except as a product distributed by an authorized Metasonix dealer), or modification of the product in any way, or incorporation of the product into any other products, or damage to the product caused by accident, fire, floods, lightning, or acts of God, or any use violative of instructions furnished by Metasonix.

3. Obligations of Metasonix shall be limited to repair or replacement with same or similar unit, at our option. To obtain repairs under this warranty, present the product and proof of purchase (e.g. bill or invoice) to the authorized Metasonix service center, transportation charges prepaid. When returning the product for repair, please pack it very carefully, preferably using the original packaging materials. Please also include an explanatory note.

IMPORTANT:

To save yourself unnecessary cost and inconvenience, please check carefully that you have fully read and followed the instructions in this instruction manual.

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What it does:

The RK1 is intended to serve as a "cymbal" sound for synthesis of electronic drums. It uses a special selected noise diode to generate white noise, and a vacuum-tube pentode to gate the noise on and off. A built-in envelope generator allows adjustment of the attack and decay time. Long attack times will require triggering with a long positive pulse, while "typical" cymbal sounds can be made with a short trigger pulse. A trigger of at least +5 volts is recommended for best performance.

Trigger and CV inputs have 100k ohm impedance. The audio output is able to drive a 600-ohm load. The CV input affects the DECAY time, and may be anywhere in the -10v to +10v range – the effective range is +1.5v to +5v.

USAGE

Connect the RK1 to an adequate Euro cabinet power supply. Connect a positive trigger/gate pulse to the INPUT, and connect the OUTPUT to a monitor amplifier or mixer. (Watch the volume level! The RK1 is designed to put out a very hot audio signal.) Trigger sequencers such as the ALM Pamela's Workout, Deltronics Trigger Man, Tiptop Trigger Riot, or the trigger outputs of the Doepfer A-155 sequencer may be used to trigger the RK1. Most of these devices produce short pulses, so the ATTACK control's range will be limited. (If a wider attack range is desired, you must use a "pulse stretcher" such as the Doepfer A-162 trigger delay before the RK1. This function is built into the Tiptop Trigger Riot. See the user manual for whichever sequencer is desired.)

Turn ATTACK, DECAY and TONE fully counterclockwise. Allow the RK1 tube to warm up, then start triggering it. Adjusting DECAY will allow a full range of ordinary cymbal effects (short decay for ride, medium for hi-hat, long for crash), while ATTACK can offer a slow-attack cymbal which is normally impossible in real-world drumkits. The TONE control is a simple low-pass filter; fully CCW is "white" noise, and fully clockwise is "red" noise. Various shades of "Pink" are available, mostly at the clockwise side of the control's rotation (no, it's not linear).

By gating the RK1 on at all times with a DC voltage, it can be used as a conventional white/pink noise source for other modules. It is also possible to process audio through the RK1; feed a VERY hot audio signal to the Trigger input, turn ATTACK and DECAY fully CCW, and you should be able to hear the noise signal being gated by the audio signal. Because the signal is very strong and tube "squash" distortion occurs, the RK1 will NOT sound like a conventional solid-state noise source.

MAINTENANCE

The RK1 requires a power supply producing +12v DC at 800 mA cold, and 300 mA after warmup, plus -12v at 10 mA. When first powered on, the RK1 briefly draws greater current, so be aware of this when using a power supply to run it plus other modules. You MUST assure the power supply is able to handle the RK1 load plus the load of other modules. We do not recommend the use of Tiptop microZeus or "Happy Ending" power supplies, due to their limited peak current capacity. We DO recommend use of the Metasonix RKP power system, which has ample power capacity to run Metasonix modules.

The tube in the RK1 is being run VERY conservatively. It should last for tens of thousands of hours of normal use. Still, the RK1 produces a lot of waste heat, so we recommend shutting it off when not in use.

UNLESS YOU KNOW EXACTLY WHAT YOU ARE DOING, DO NOT REPLACE OR SUBSTITUTE THE TUBE YOURSELF!

Please note: not all tubes have easily visible heaters. They were not designed to offer pretty cosmetics. If you can't see a heater glowing, DO NOT assume that tube is bad. If you hear an output signal, the RK1 tube is working. We get many foolish complaints of this type!

TUBE REPLACEMENT: despite their expected long lifetime, the tube might be damaged or develop faulty internal wiring connections, requiring replacement. This particular RK1 was shipped, and wired for, a 6CB6 pentode. Other pentodes with the same pinout, such as the 6AU6 or 6AK5, will also work. Do NOT attempt to substitute other tube types. 6CB6s are still quite easy to find and are available from distributors such as Radio Electric Supply (vacuumtubes.net) or Antique Electronic Supply (tubesandmore.com).

If you are confused or have ANY technical questions, feel free to contact us. Please DO NOT ASSUME and if you are not an experienced technician, DO NOT TRY RANDOM TUBES OR MODIFY THE CIRCUIT IN ANY WAY!

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