

INSTRUCTIONS FOR THE
CG Model RT1-3V TONE RECEIVER

Manufactured by
CG ELECTRONICS CORPORATION
15000 Central Avenue East
Albuquerque, New Mexico

I N T R O D U C T I O N

The CG Model RT1-3V tone receiver was designed for remote control of models where one channel of control is desired. A transistorized super regenerative detector and two transistors used as audio amplifiers form a highly stable sensitive circuit. The antenna length will not affect the performance of the receiver and the adjustments are not critical. The receiver is adjusted at the factory and under normal conditions should require no further adjusting. An operator's license is not required to operate this receiver. This receiver was designed to fill the requirement for a compact reliable receiver. The battery drain is extremely low and a minimum number of batteries is required, making the RT1-3V receiver very economical to operate. Bonding of escapements used with this receiver is normally not required.

The CG RT1-3V receiver uses transistors and is intended for use where the temperature will not exceed 130° F or drop below 0° F. The receiver will accept audio modulation that has a frequency of no lower than 300 CPS and no higher than 600 CPS. The transmitter must be capable of at least 95% modulation. The CG Model T-12 is recommended for use with the RT-1 receiver.

S P E C I F I C A T I O N S

Weight: 2 oz. Receiver alone
Power: 3 Volts 10 MA Approx. 40 MA Approx.
Carrier Frequency: 27.255 MCS
Modulation Frequency: 300 to 600 CPS

B A T T E R I E S

The recommended voltage for the receiver is 3 volts. Two pen light cells are recommended. This battery should give many days of flying without replacement. Do not exceed 3 volts for the receiver supply as damage could result. The 3 volt battery should be replaced when the voltage falls below 2.2 volts measured with the receiver turned on. Care should be exercised in connecting the batteries to the receiver. If the polarity is reversed, the receiver could be damaged. No bias battery is required with this equipment.

Where a very light installation is desired the receiver can be operated on the same batteries used for the escapement. If this is done replace the batteries when they drop below 2 volts with the escapement energized.

A N T E N N A

The antenna length of the CG Model RT1-3V receiver is not critical. Length of antenna may vary from 18 to 36 inches including length of wire used to connect receiver to antenna. A vertical antenna made of music wire and allowed to extend above fuselage works nicely. A trailing wire will, also, work satisfactorily if kept clear of fuselage containing wiring and push rods.

I N S T A L L A T I O N

The CG Model RT1-3V tone receiver can be mounted in any convenient position within the model. The receiver should be shock mounted by any one of the common methods; rubber-band suspension, sponge rubber or Lord Mounts should be satisfactory. Connect the wires as shown in figure 1 and allow enough slack in the wires to permit the receiver to move freely within its mounting limits. If this isn't observed, a rough landing could break the wiring free from the receiver. Solder all connections securely and do not depend upon the solder to hold the wire to the terminal; always wind the wire around the terminals first, then solder it in place. Locate the batteries where necessary to balance model. All batteries may be mounted in the same compartment of model. Spark suppression is necessary to prevent the relay from sticking. A .1 mfd capacitor with a 10 ohm resistor in series can be connected across the relay points. Another method that works nicely with escapements or motors is to connect a 100 ohm $\frac{1}{2}$ watt carbon resistor directly across the motor or actuator leads.

T U N I N G A N D T E S T I N G

Upon completion of the wiring, double check to make certain it is wired correctly.

A jack can be used for metering but must be of the shorting type. If it isn't the shorting type, a plug with a jumper must be used when the meter is not in the circuit. A meter with a range of zero to 100 MA or larger should be used for tuning.

Install the meter into the jack, observing the polarity as indicated in Figure 1. Turn the receiver on, and the meter should read approximately 15 MA with a slight movement of the needle. The idle current will drop to approximately 10 MA when the transmitter is turned on and the key is NOT depressed. Remove the antenna from the CG T-12 transmitter and place it about 6 inches from the receiver antenna. Turn the transmitter on and depress the key. The receiver current should rise to a level between 30 and 60 MA. Adjust the tuning slug for maximum current. Remove the transmitter far enough from the receiver antenna to allow a sharp adjustment which is indicated by detuning of the receiver with a very small movement of the tuning slug. While tuning the receiver BE CERTAIN THAT THE TUNING TOOL HAS NO METAL ON THE END THAT FITS INTO THE RECEIVER. BE CERTAIN TO TUNE THE RECEIVER WITH THE TOP COVER IN PLACE.

Metal on the tuning tool will detune the receiver when the tool is removed. This tuning adjustment is done at the factory, and it should not be necessary to turn the slug more than a half turn in either direction. The receiver is now ready to use. It will be noted that at different temperatures the idle current may vary, which is normal for transistors.

Using the RT1-3V in the field, the transmitter may block the receiver when it is used within 10 ft. of the receiving antenna. This may be confusing when preflighting the equipment. To eliminate this condition, hold the transmitter in such a manner that your bare hand comes in contact with the transmitter case with one or two fingers hooked around the antenna at the point where the antenna comes through the case. This short circuits the transmitter output, and cannot harm the operator. Be certain to release the antenna for flying.

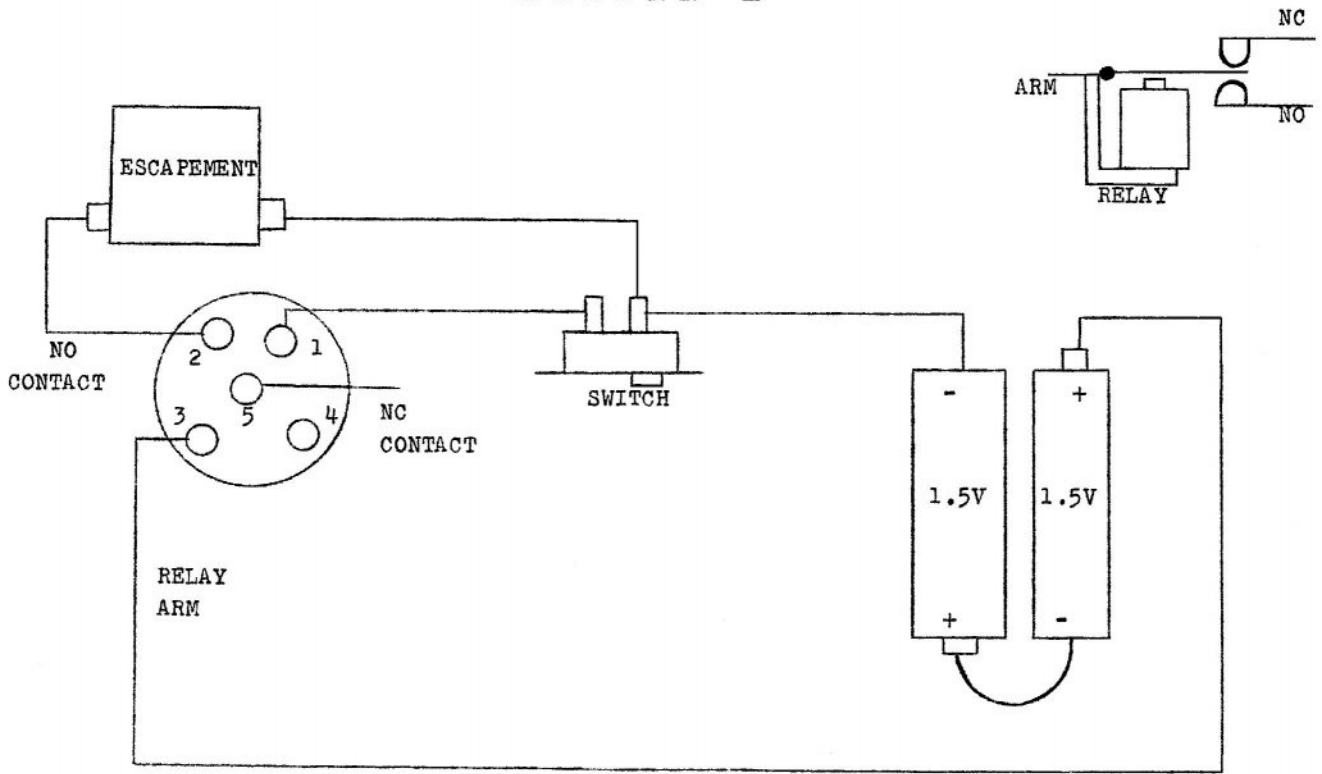
W A R R A N T Y

The CG Model RT1-3V receiver is guaranteed against defective parts and workmanship for a period of 30 days from the date of purchase. If for any reason the receiver fails to operate, send it directly to the manufacturer for inspection and repair. The guarantee applies only when used with a CG Transmitter or one approved by CG Electronics Corporation. If the receiver has been tampered with or shows evidence of abuse the warranty is void. Enclose 35¢ for postage and handling with each receiver returned under our warranty. We are not responsible for equipment damaged in shipment.

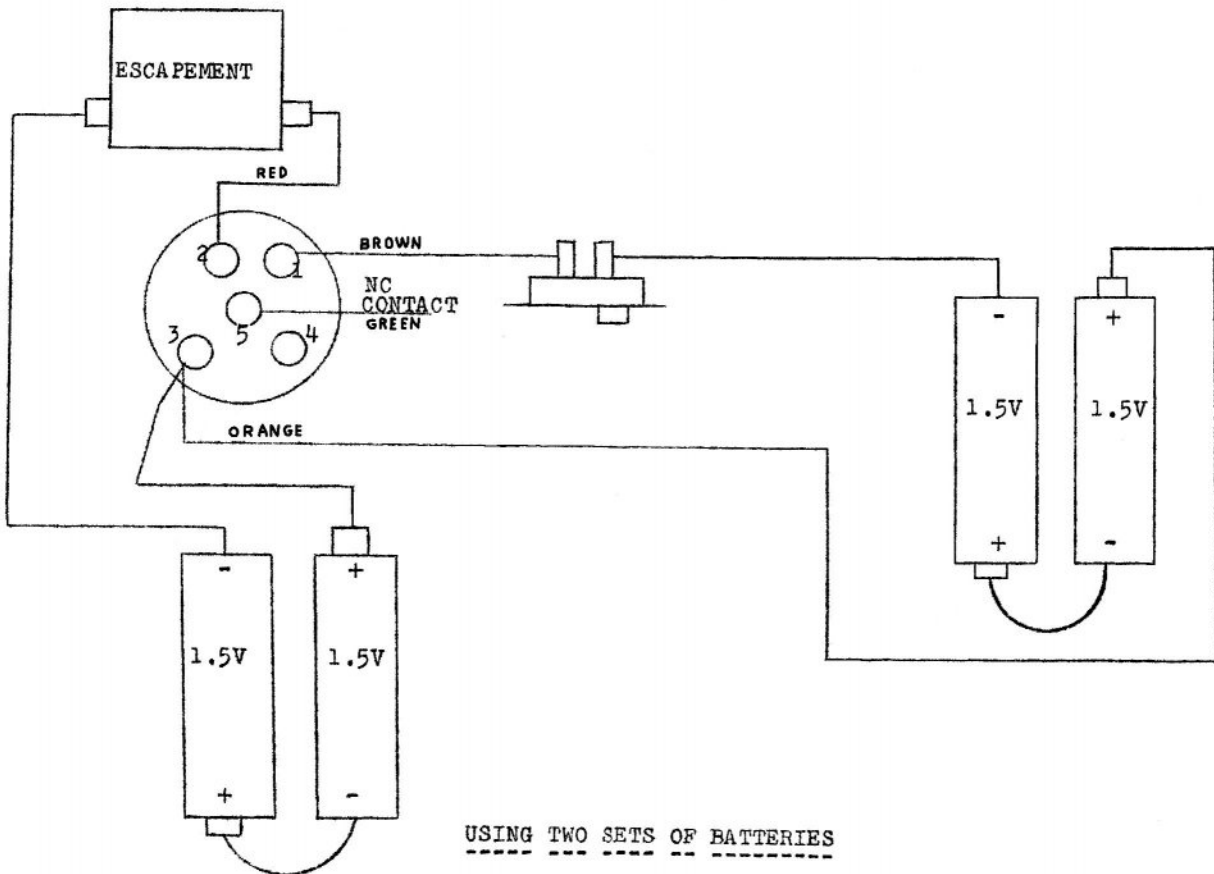
R E P A I R S E R V I C E

The factory will repair your receiver and check it for a minimum charge of one dollar and thirty-five cents (\$1.35). Send the damaged receiver to: CG Electronics Corporation, 15000 Central Avenue East, Albuquerque, New Mexico. Include one dollar and thirty-five cents with the receiver and if for any reason the charge is to be more, you will be advised before the receiver is repaired.

FIGURE I



USING ONE SET OF BATTERIES



USING TWO SETS OF BATTERIES