

## PRODUCT INSTRUCTIONS

### Model VC-2 Voltmeter Verifier

#### 1. VOLTMETER VERIFIER

The Model VC-2 Voltmeter Verifier provides highly accurate output voltage to verify voltmeters used for Cathodic Protection testing. The VC-2 will work with any voltmeter or multimeter on DC volts setting. The VC-2 offers the following voltage outputs: 0.001v, 0.01v, 0.1v, 1.0v, 2.5v, 5.0v

The VC-2 is a portable, battery operated instrument. With the VC-2, you can test voltmeters on a scheduled basis or at each use, and this performance check allows you to send voltmeters that are out of calibration on an exception basis rather than a time based schedule.

The VC-2 is a very accurate instrument and should be put on an annual calibration cycle. Tinker & Rasor performs calibration services in its Southern California factory with a 24-hour turn around.

#### 2. INSTRUCTIONS FOR UNPACKING & INSPECTION

- A. Open the package and ensure you have received all items stated on the packing list, usually in a plastic pouch on the outside of the packing box.
- B. INSPECTION should be made upon receipt. If damage has occurred during shipment, file a claim with the carrier immediately.
- C. If it is necessary to contact your supplier or the Tinker & Rasor concerning damaged or missing items, be sure to include the serial number, purchase order number, and invoice number of the instrument in question.

#### 3. USE INSTRUCTIONS

- A. Make sure that the instrument is turned OFF.
- B. Connect the voltmeter to be verified to the VC-2. Connection to the VC-2 should be made using the leads from the voltmeter being tested. (The voltmeters leads are an important part of verifying the performance of the instrument. For this reason, the VC-2 does not come with leads of its own.)
- C. When connecting the leads polarity must be observed. The RED terminal is positive and the BLACK terminal is negative.
- D. Prior to turning the VC-2 to on, move the voltage selector knob all the way counter clockwise to the 0.001v setting.
- E. Adjust the voltmeter to the proper scale for the selected output voltage of the VC-2 instrument.
- F. Turn the VC-2 on by pressing the power button until the RED LED lights.
- G. The voltage output will begin immediately as soon as the VC-2 is turned on.
- H. Observe the reading on the voltmeter and compare the knob position on the VC-2.
- I. Move the knob clockwise and at each knob setting, observe the voltmeter display reading against the VC-2 knob position.
- J. It is recommended to always turn the VC-2 OFF when adjusting, connecting or disconnecting lead wires.



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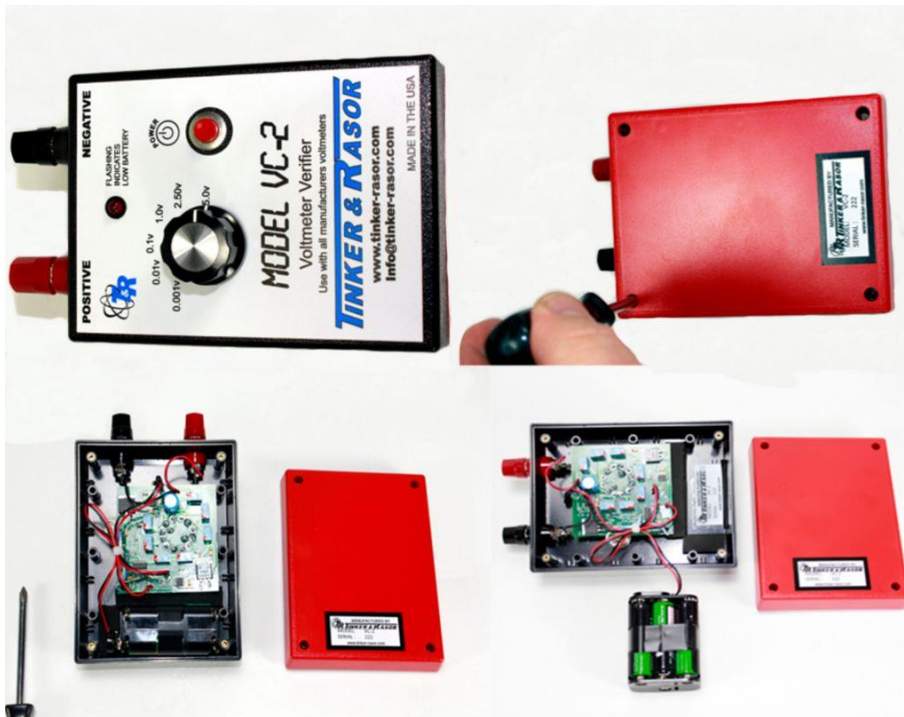
### 4. POLARITY

Many Cathodic Protection reads are made in the negative (-) range of CP voltmeters. Because of this, it is recommended that the lead wires being connected to the VC-2 be reversed, and the above test procedure be repeated, observing the now negative display voltages on the voltmeter.

### 5. BATTERY

The VC-2 operates using six (6) AA batteries, located inside the case of the Model VC-2. The VC-2 has a low battery feature to inform when the batteries are low. The RED power LED will begin to blink when the batteries are in need of replacement. It is important to note that the accuracy of the VC-2 will be affected by using batteries that provide less than 7.0v. (AA battery is 1.5v x 6 = 9.0v)

To access the batteries, turn the instrument over, so that the Red side of the case is exposed. You will note the four inset holes for the connecting screws. Remove the #4 Phillips (cross) –style screws with an appropriate screw driver and set them aside in a safe location. Carefully pull the halves of the case apart. You will easily notice the battery holder inside the case. Replace batteries as needed, observing polarity, as shown on the battery holder. Close the case by carefully mating the two halves of the case and replacing the (4) screws. See Photos Below.



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### 6. CALIBRATION

It is recommended that the VC-2 instrument be returned to the Tinker & Rasor factory on an annual basis for calibration check. When the instrument is returned for calibration services, Tinker & Rasor technicians put the instrument through the test procedures and ensure all performance checks are made.

After passing all calibration checks, the VC-2 is given a calibration sticker that shows the instrument name, serial number, date of calibration and recommended return date for the next calibration service. A formal calibration document is also provided with the instrument when it is returned.

Calibration and repairs services are offered on a 24 hour turnaround.

### 7. FACTORY REPAIRS

Instruments returned to the factory for repairs should be sent TRANSPORTATION PREPAID. In most cases the instrument can be serviced and returned the next day it is received at the factory.

#### **Shipping Address**

Tinker & Rasor  
ATTN: Repairs  
791 S. Waterman Ave.  
San Bernardino, CA 92408

101-034

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