

# OPERATION MANUAL

for the

## BO1999-10 BLASTER'S OHMMETER

SEE PAGE 6 FOR USER INFORMATION AND LIMITED WARRANTY



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## INTRODUCTION

The REO B01999-10 Blaster's Ohmmeter is a TEN CIRCUIT model designed for REO Sequential Blasting Systems and includes a SPECIAL SET OF TERMINALS for SINGLE-CIRCUIT testing. The sequential blasting cable is connected to a socket on the ohmmeter thus allowing rapid resistance measurement of each circuit selected by a rotary switch. Long battery life, a rugged water resistant enclosure and heavy duty terminals provide the blaster with a dependable unit. This user-friendly digital ohmmeter speeds up circuit check-out and provides vital information necessary to assure a successful blast.

## GENERAL INFORMATION

The REO B01999-10 Blaster's Ohmmeter provides nominal values of circuit resistance on a large easy-to-read digital display. A rotary switch selects one of ten sequential blasting cable circuits, or selects the two terminals on the ohmmeter for single circuit testing. The B01999-10 Blaster's Ohmmeter measures resistances of 0 - 1999 ohms in one ohm increments, with an accuracy of +/- 1 ohm. The maximum test current is 2 milliamperes. The ohmmeter turns on automatically when a circuit is detected, and turns off automatically when the circuit is disconnected.

## OPERATION

### Operational Test

1. Do not connect a sequential blasting cable to the B01999-10 Blaster's Ohmmeter until this Operational Test has been performed.
2. Short the SINGLE CIRCUIT terminals on the ohmmeter with a short piece of wire.
3. Rotate the CIRCUIT switch to the SINGLE position. The ohmmeter should turn on and indicate 000 (+/- 1)ohm.
4. If the battery is in need of replacement, BAT appears on the display.
5. Rotate the CIRCUIT switch to positions 1 - 10. The ohmmeter should turn off and remain off for all positions.

### General Operating Procedure

Note: The following procedure is intended as a guide only, and each user must prepare and verify his own procedure consistent with Local, State, and Federal regulations. Complete Operating Instructions appear in the lid of the B01999-10 Blaster's Ohmmeter.

**CAUTION - USE OF THIS EQUIPMENT REQUIRES THAT THE OPERATOR HAS BEEN TRAINED AND CERTIFIED IN BLASTING TECHNIQUES.**

WARNING: BATTERIES ALONE CAN FIRE ELECTRIC DETONATORS. KEEP BATTERIES AWAY FROM THE BLASTING CIRCUITS.

WARNING: KEEP THE BLASTING CIRCUITS (SEQUENTIAL BLASTING CABLE AND SINGLE CIRCUITS) SHUNTED WHEN NOT CONNECTED TO THE OHMMETER. MINIMIZE THE TIME THE BLASTING CIRCUITS ARE CONNECTED TO THE OHMMETER BY TAKING RESISTANCE VALUES QUICKLY. RECORD THE DATA IN A LOG BOOK FOR ANALYSIS AND FUTURE REFERENCE.

#### Sequential Circuit Testing

1. Perform the Operational Test.
2. Verify that all personnel have been removed from the blast area and that the electric detonator circuits are ready to be checked.
3. Connect the sequential blasting cable to the CABLE 1-10 connector on the BO1999-10 Blaster's Ohmmeter.
4. Rotate the CIRCUIT switch to positions 1 through 10, noting the resistance displayed for each circuit.  
  
Note: 1--- will be displayed if the resistance exceeds 1999 ohms.
5. Disconnect and shunt the sequential blasting cable after testing.

#### Single Circuit Testing

1. Perform the Operational Test.
2. Connect the blasting circuit to the SINGLE CIRCUIT terminals on the BO1999-10 Blaster's Ohmmeter.
3. Rotate the CIRCUIT switch to the SINGLE position. Note the resistance displayed.  
  
Note: 1--- will be displayed if the resistance exceeds 1999 ohms.
4. Shunt the blasting circuits after testing.

## BATTERY

#### Battery Life

Under normal use, an Alkaline type battery will last more than 2000 hours of operation. During use of the ohmmeter, BAT will appear on the display when the battery is in need of replacement.

### Battery Type and Replacement

The BO1999-10 Blaster's Ohmmeter uses one 9 volt Alkaline battery, Eveready 522 or equal, available in most department stores, drug stores, and electronic supply stores.

To replace the battery, loosen the two captive screws on the battery cover on the top panel of the tester. Remove the battery cover. Remove the old battery and insert the new alkaline battery, observing polarity. After battery replacement, make sure that the gasket on the battery cover is sealing properly and that the two captive screws are securely tightened.

**WARNING: USE ONLY AN ALKALINE TYPE BATTERY. Do not use a carbon-zinc type battery as it does not have the capacity to operate the BO1999-10 Blaster's Ohmmeter.**

**CAUTION: OBSERVE POLARITY WHEN REPLACING THE BATTERY. INCORRECT POLARITY WILL DAMAGE THE BLASTING MACHINE.**

**CAUTION: EXAMINE BATTERY AT LEAST EVERY 3 MONTHS FOR CHEMICAL LEAKAGE. REPLACE THE BATTERY AT LEAST YEARLY EVEN IF NOT EXHAUSTED. REMOVE THE BATTERY FROM THE BLASTER'S OHMMETER IF IT IS NOT GOING TO BE USED FOR TWO OR MORE MONTHS.**

## REPAIRS

The BO1999-10 Blaster's Ohmmeter must be repaired only at the factory to ensure quality workmanship, and for updating to current production standards. Quality control tests are performed and exact replacement parts are used. Each item repaired is subjected to the same quality control tests as new production. Such procedures and the specialized test equipment required are not available in the field or at other generalized repair shops.

If repair is required, please return the item with shipping charges prepaid to the factory at the address listed below. Include a note or letter describing the problem and include the name and telephone number of the person(s) knowledgeable of the problem. If the equipment is sent by Greyhound Bus Lines, there is a pickup charge that will be added to your repair charges.

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## USER INFORMATION AND LIMITED WARRANTY

### Disclaimer

The information contained in this manual is the instructions and recommendations of Research Energy of Ohio, Inc. Federal, State and/or Local laws, rules and regulations may alter the sequence of operating the equipment. It is the responsibility of the purchaser and user to ensure use consistent with Federal, State and/or Local laws, rules and regulations. It is the responsibility of the receiving office to register this document to the appropriate department and person(s) responsible for mine and blasting safety.

WARNING: BLASTING PROCEDURES, ELECTRIC DETONATOR SELECTION, ELECTRIC DETONATOR CIRCUIT DESIGN, SHOT LAYOUT AND TIMING ARE THE RESPONSIBILITY OF THE USER. Consult with the Explosives Engineer and with the explosives suppliers for necessary information and training for safe, efficient blasts.

### Limited Warranty

Each unit is tested extensively before shipment and carries a 90 day LIMITED WARRANTY. If the unit fails to test or perform due to a defect in material or workmanship, please return it to the factory. The unit will be repaired or replaced at our option. This LIMITED WARRANTY is void if the equipment has been dismantled, altered, or otherwise abused in any way.

The above LIMITED WARRANTY is exclusive and in lieu of all warranties, express or implied, including any implied warranty of merchantability or fitness for a particular purpose. Under no circumstances shall Seller or Manufacturer be liable for damages of any description occasioned by or resulting from operation or use of this equipment.

We cannot anticipate all conditions under which this information and our products, or our products in combination with the products of other manufacturers, may be used and therefore accept no responsibility for the results obtained, or the suitability or the safety of our products when used alone or in combination with other products. The user must make his own tests to determine the suitability and safety of each product and product combination for his own purpose. We sell the product without warranty and the buyers and users assume all responsibility and liability for all losses (including anticipated profits), consequential damages, or incidental damages arising from the use of our products alone or in combination with other products.

Use of this equipment by persons not trained in blasting techniques will make the warranty null and void.