For testing 12-volt automotive starting batteries rated in CCA, SAE, DIN, IEC, and EN

P/N 168-138A 01/02 © 2002 Midtronics, Inc.

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Before testing batteries on a vehicle, do not use steel bolts.

Service
For service, contact Midtronics for a Return Authorization number, and return the unit to Midtronics freight prepaid. Attention: R.A.. Midtronics will repair or replace the tester and reship, the next scheduled business day following receipt, using the same type carrier and service as received. If Midtronics determines that the failure was caused by misuse, alteration, accident, or abnormal condition of operation or handling, purchaser will have the option of purchasing a replacement tester or the unit will be returned freight collect. Battery testers beyond the warranty period are subject to the repair charges in effect at that time.

Patents
This tester is made in the U.S.A. by MIDTRONICS, INC. and is protected by one or more of the following U.S. Patents: 6,323,650; 6,316,914; 6,304,087; 6,249,124; 6,163,156; 6,091,245; 6,051,976; 5,831,435; 5,821,756; 5,757,192; 5,592,093; 5,585,728; 5,572,136; 4,912,416; 4,881,038; 4,825,170; 4,816,768; 4,322,685; 4,295,680; United Kingdom patents: 817,614; 672,248; German patents: 689 23 281 0-08; 693 23 388 6; 93 21 638 6; and other U.S. and Foreign patents issued and pending. This product may utilize technology exclusively licensed to Midtronics, Inc. by Johnson Controls, Inc. and/or Motorola, Inc.

Limited Warranty
This battery tester is warranted to be free of defects in materials and workmanship for a period of one year from the date of purchase. Midtronics will, at its option, repair the unit or replace the unit with a remanufactured tester. This limited warranty applies only to Midtronics battery testers and does not cover any other equipment, static damage, water damage, overvoltage, dropping unit or damage resulting from extraneous causes including owner misuse. Midtronics is not liable for any incidental or consequential damages for breach of this warranty. The warranty is void if owner attempts to disassemble the unit, or to modify the cable assembly.

CAUTION
Because of the possibility of personal injury, always use extreme caution when working with batteries.

Prior to Testing the Battery

Test the PBT-200 battery tester uses Midtronics patented conductance

test results. Do not use steel bolts.

Test In-vehicle:
Turn off the vehicle and all accessory loads. Testing with the ignition switch on or vehicle loads on may cause inaccurate readings.

For testing side-post batteries that are dirty or worn, remove side-post battery terminals and refresh the lead. Clean the battery posts or side terminals with a wire brush.

Testing Out-of-Vehicle:
Clean the battery posts or side terminals with a wire brush.

Conductance Technology:
Conductance is a measurement of the plate surface available in the battery, which determines how much power (or current) the battery can supply. The conductance test looks at the ability of the plate surface to deliver current. A conductance tester does not put a load on the battery, which means you can safely, quickly, and accurately test a battery anywhere.

CAUTION
Failure to properly install the stud adapters, or using stud adapters that are dirty or worn, may result in false test results. Do not use steel bolts.

Testing Out-of-Vehicle:
Prior to testing the battery, rest for 1 minute to recover before testing.

If the vehicle was running prior to testing, let the battery rest for 30 seconds to remove the surface charge. Let the battery cool to room temperature before testing. Turn off all accessories and the engine.

Testing In-vehicle:

Clean the battery posts or side terminals with a wire brush.

Conductance technology to determine if the battery is good or bad, even when discharged. This means you can safely, quickly, and accurately test a battery anywhere.
**PBT-200 BATTERY RATING SYSTEMS**

- 200 – 850 CCA
- 200 – 900 A SAE
- 120 – 550 A DIN
- 120 – 550 A IEC
- 200 – 900 A EN

*For JIS, use the conversion table on the back of the PBT-200.*

**RATING SYSTEM SELECTION PROCEDURE**

1. Connect the tester clamps to the battery: red to the positive (+) terminal, black to the negative (–) terminal. Rock each clamp back and forth to make a good connection.

2. The battery rating system last selected will appear on the display for 3 seconds, then the default rating.

3. If the rating system is correct, go to Step 3 in Battery Test Procedure.

4. To change the rating system, disconnect the clamps and connect the black clamp to the negative (–) terminal.

5. Press and hold the TEST key.

6. Connect the positive clamp (red) to the positive (+) terminal.

7. After the display shows the letters of the rating system with dots (for example, .C.C.A), release the TEST key.

8. Use the ARROW keys to scroll to the correct standard.

9. Press the TEST key to select the standard, and the default rating will appear.

10. Continue with Step 3 in Battery Test Procedure.

**BATTERY TEST PROCEDURE**

1. If testing in-vehicle, make sure vehicle loads (lights, etc.) are off and the key is removed. Connect the tester clamps to the battery: red to positive(+) terminal, black to negative (–) terminal. Rock each clamp back and forth to make a good connection.

2. The battery rating system last selected will appear on the display for 3 seconds, then the default rating. (To change the rating system, follow the steps above.)

3. Use the ARROW keys to scroll to the battery’s rating.

4. Press the TEST key.

5. One or more LEDs (green, green and yellow, or red) will light to indicate the battery’s condition, and the display will toggle between the voltage and available power.

**BATTERY CONDITION INDICATORS**

- **GREEN**
  - Good battery. Return to service.

- **YELLOW**
  - Fully charge the battery and return to service.

- **RED**
  - Battery has failed or is weak and may soon fail. Replace battery.

**DISPLAY MESSAGES**

If the display flashes or shows one flashing letter, the battery is too low (< 8 volts) to test. Fully charge the battery and retest.

If the display shows lines ( – – – – ), see Troubleshooting below.

A message that toggles between BAD and CELL means one or more battery cells are bad. Replace the battery.

A **REPLACE** message **when testing in the vehicle** may mean a poor connection between the vehicle’s cables and the battery. Disconnect the battery cables and retest before replacing the battery.

**STARTER SYSTEM TEST PROCEDURE**

1. Connect the tester clamps to the battery: red to the positive (+) terminal, black to the negative (–) terminal. Rock each clamp back and forth to make a good connection.

**NOTE: The battery must be good and fully charged for this test.**

2. Press the V button to read the live voltage.

3. Start the vehicle.

4. Press and hold the DOWN ARROW to read the cranking voltage.

   - If the Volts reading is greater than 9.6 volts = Starting System OK
   - If the Volts reading is less than 9.6 volts = Starting System Problem. Check connections, wiring, and starter

**CHARGING SYSTEM TEST PROCEDURE**

1. When the vehicle is running, connect the tester clamps to the battery: red to the positive(+) terminal, black to the negative (–) terminal. Rock each clamp back and forth to make a good connection.

**NOTE: The battery must be good and fully charged for this test.**

2. Press the V button to read the live voltage.


4. Press and hold the UP ARROW to read the highest average charge.

   - If the Volts reading is between 13.3 and 15.5 volts = Charging System OK
   - If the Volts reading is greater than 15.5 volts = Charging System Problem Check regulator
   - If the Volts reading is less than 13.3 volts = Charging System Problem Check connections, wiring, and starter

**TROUBLESHOOTING**

Excessive electromagnetic interference may cause the tester to reset. If the tester resets during testing, simply disconnect from the battery, reconnect and start the test process again.

If the PBT-200 detects excessive system noise, the display will show lines ( – – – – ) and the tester will reset:

- Make sure all vehicle loads are off and the ignition is in the off position.
- You may be testing too close to a noise source, i.e., a charger or other high-current device. If so, move away and retest.
- If no noise source is identified, fully charge the battery and retest. If the message appears after recharging, replace the battery.