

If the vehicle was running prior to testing, turn on the headlights for 30 seconds to remove the surface charge. Let the battery rest for 1 minute to recover before testing.

inaccurate readings.

Ignition switch on or vehicle loads on may cause

Testing In-Vehicle:

Clean the battery posts or side terminals with a wire brush. For testing side-post batteries, install and tighten the lead terminal stud adapters. 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:

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

CAUTION



PRIOR TO TESTING THE BATTERY

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. As a battery ages, the plate surface can sulfate or shed active material which adversely affects its ability to perform. In addition, conductance can be used to detect cell defects, shorts, and open circuits, which will reduce the ability of the battery to deliver current.

PBT Testing Advantage:

The PBT-200 battery tester uses Midtronics patented 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.

Service

For service, contact Midtronics for a Return Authorization number, and return the unit to Midtronics freight prepaid, Attention: RA#. 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; Canadian patents: 1,280,164; 1,295,680; United Kingdom patents: 0,417,173; 0,672,248; German patents: 689 23 281.0-08; 693 25 388.6; 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 our 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.

MIDTRONICS

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MIDTRONICS



PBT-200
Advanced Battery Conductance/Electrical System Tester

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

INSTRUCTION MANUAL

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(+), black to negative (–). 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.

GREEN



Fully charge the battery and
return to service

YELLOW



YELLOW



Fully charge the battery and
retest. If reading repeats after
charging, replace the battery.

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 **CONN** message means there is a bad connection. Disconnect the clamps and reconnect. Make sure to rock the clamps back and forth to make a good connection.

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.
3. Rev the engine at 2000 rpm for 15 seconds.
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.