



TOYOTA

MIDTRONICS

Advancing
Battery Management

Automotive Battery and Electrical System ANALYSER

TOYOTA MDX-650P IN AP



Inspecting the Battery

Before starting the test visually inspect the battery for:

- Cracked, buckled, or leaking case. If you see any of these defects, replace the battery.
- Corroded, loose, or damaged cables and connections. Repair or replace them as needed.
- Corrosion on the battery terminals, and dirt or acid on the case top. Clean the case and terminals using a wire brush and a mixture of water and baking soda.
- Low electrolyte level. If the electrolyte level is too low, add distilled water to fill up to ½ inch above the top of the plates and fully charge the battery. Do not overfill.
- Corroded or loose battery tray and hold-down fixture. Tighten or replace as needed.

Battery Test Results

| Decision | Interpretation |
|------------------|---|
| GOOD BATTERY | Return the battery to service. |
| GOOD-RECHARGE | Fully charge the battery and return it to service. |
| CHARGE & RETEST | Fully charge the battery and retest. Failure to fully charge the battery before retesting may cause inaccurate results. If CHARGE & RETEST appears again after you fully charge the battery, replace the battery. |
| REPLACE BATTERY | Replace the battery and retest. A REPLACE BATTERY result may also mean a poor connection between the battery cables and the battery. After disconnecting the battery cables, retest the battery by cleaning the terminal properly before replacing it |
| BAD CELL-REPLACE | Replace the battery. Risk of explosive gases. Can cause death or serious personal injury. Never attempt to charge a battery with a bad cell. The battery must be replaced. |
| FROZEN BATTERY | The battery being tested is frozen. Allow battery to thaw before attempting test. |

Battery Testing

- 1 Connect Tester Battery Terminals & check voltage
- 2 Battery Location: Out of Vehicle
- 3 Select Battery Post Type : TOP
- 4 Specify Gravity Low Yes / No
- 5 Select Battery Standard
- 6 Enter Rating
- 7 Enter Battery Serial No and Manufacturing code.
- 8 Press Enter to Start Test
- 9 Take Print

Vehicle System Testing

- 1 Connect Tester Battery Terminals & check voltage
- 2 Battery Location: In Vehicle
- 3 Select Battery Post Type : TOP
- 4 Specify Gravity Low Yes / No
- 5 Select Battery Standard
- 6 Enter Rating
- 7 Enter Battery Serial No and Manufacturing code.
- 8 Press for starter test
- 9 Start the Engine & Test the Starter
- 10 Turn load ON & Rev. Engine
- 11 Idle Engine & Turn OFF load
- 12 Charging System Decision Displayed & Take Print

Starter System Test Results

| Decision | Interpretation |
|-------------------|--|
| CRANKING NORMAL | The starter voltage is normal and the battery is fully charged. |
| LOW VOLTAGE | The starter voltage is low and the battery is fully charged. |
| CHARGE BATTERY | The starter voltage is low and the battery is discharged. Fully charge the battery and repeat the starter system test. |
| REPLACE BATTERY | Battery must be replaced before the starting system can be tested. |
| LOW CRANKING AMPS | Cranking voltage is high, but the cranking amps are low |
| NO START | The engine did no start and the test was aborted |
| CRANKING SKIPPED | The tester did not detect the vehicle starting profile and skipped starter test. |

Charging System Test Results

| Decision | Interpretation |
|---------------------------|---|
| NO PROBLEMS | System is showing normal output from the alternator. |
| NO VOLTAGE LOW VOLTAGE | The alternator is not providing charging current to the battery. Check the belts to ensure the alternator is rotating with the engine running. Check all connections to and from the alternator, especially the connection to the battery. If the belts and connections are in good working condition, replace the alternator. |
| HIGH VOLTAGE | The voltage output from the alternator to the battery exceeds the normal limits of a functioning regulator. Check to ensure there are no loose connections and that the ground connection is normal. If there are no connection problems, replace the regulator. A high charging rate will overcharge the battery and may decrease its life and cause it to fail. If the battery test decision is REPLACE and the charging system test shows a HIGH OUTPUT, check the battery's electrolyte levels. A symptom of overcharging is battery fluid spewing through the vent caps, which causes low electrolyte levels and will harm the battery. |

Test Messages

| Decision | Interpretation |
|--------------------------|---|
| BAT. TEMPERATURE | Select ambient temperature above or below 32 °F (0 °C) |
| CHARGE STATE | Select before or after battery has been charged. |
| SURFACE CHARGE DETECTED | Remove the surface charge before it begins testing. Testing will resume after charge has been removed. In-vehicle testing. Tester has detected computer, |
| SYSTEM NOISE CHECK LOADS | ignition noise or parasitic drain. Make sure all vehicle loads are off including open doors and ignition switch. Out-of-vehicle. Weak battery, should be charged and retested. |
| UNSTABLE BATTERY | One or more diodes in the alternator are not functioning or there is stator damage, which is shown by an excessive amount of AC ripple current supplied to the battery. |
| EXCESSIVE RIPPLE | Make sure the alternator mounting is sturdy and that the belts are in good shape and functioning properly. If the mounting and belts are good, replace the alternator. |



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