



TECHNICAL SERVICE BULLETIN

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BATTERY MAINTENANCE FOR VEHICLES IN DEALER INVENTORY Page 1 of 3

BACKGROUND

A battery in a stored vehicle is subject to conditions which can reduce its performance and life. These conditions include storage period, temperature, E.C.U. parasitic drain, and battery load. Because of these factors, battery maintenance is recommended for proper operation and optimal battery life.

Under Toyota's current battery warranty, there are no discharged batteries due to lack of maintenance. It is considered the dealer's responsibility to prevent a discharge by keeping the battery fully charged while in stock.

BATTERY MAINTENANCE RECOMMENDATIONS

1. A monthly battery maintenance is recommended under normal conditions. If your dealership is located in an area subject to extreme temperatures (hot or cold), periodic maintenance may need to be performed on a more frequent basis.
2. To reduce battery drain during long storage of in-stock vehicles, the dome light fuse of each vehicle should be removed. It is recommended that the fuse remain disconnected until time of delivery. This procedure can reduce battery drain 60 – 80 percent.

Note 1: For your reference, the electrical systems made inoperative by removing the dome light fuse are indicated in the electrical wiring diagram and current pre-delivery technical service bulletins for each vehicle model.

Note 2: Additional battery maintenance information is available in the warranty policies and procedures manual.

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TEST PROCEDURES

Two test procedures are available for evaluating battery state of charge. These include:

- Open-circuit voltage (can be used on all types of batteries).
- Specific gravity (for maintenance type batteries).

OPEN-CIRCUIT VOLTAGE TEST PROCEDURE

1. In preparation for this evaluation, wait at least 20 minutes after a load test or charging has been applied to the battery. This will allow the voltage to stabilize.
2. With the key out of the ignition, connect the voltmeter across the battery terminals.
3. Read the voltmeter.

TEST RESULTS

1. A fully charged battery will have an open-circuit voltage of 12.6 volts or greater.
2. The minimum acceptable voltage is 12.2 volts. If the reading is less than 12.2 volts, a charge is needed.

CHARGING PROCEDURES

1. If test results indicate a charge is necessary, a slow-constant 5 amp charge rate is recommended until the battery reaches a full state of charge (12.6V or greater). Be sure to maintain proper electrolyte level.
2. Ensure that the charger is turned off before connecting or disconnecting the leads. Always connect the negative lead last and disconnect it first.
3. Prior to retesting, discharge the battery using a 150 amp load for 15 seconds to remove surface charge.

SPECIFIC GRAVITY TEST PROCEDURE

1. Remove vent caps or covers from the battery cells. **NOTE:** Do not attempt to remove covers from maintenance-free batteries if so equipped. Instead, utilize the open-circuit voltage test procedure described in this TSB.
2. Using a hydrometer, measure the specific gravity, (corrected to 80°F {26.7°C}) of the electrolyte in each cell. Follow the procedure described by the manufacturer of your hydrometer.

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3. Record the specific gravity of each cell.

Note: If a non-temperature corrected hydrometer is being used, the readings need to be adjusted to compensate for electrolyte temperature. For each 10°F (5.5°C) above 80° (26.7°C), add 0.004 to your readings. For each 10°F below 80°F (26.7°C), subtract 0.004 from your readings.

TEST RESULTS

1. A fully charged battery will have a specific gravity reading of approximately 1.265.
2. The minimum standard for this test is a reading of 1.200. If the lowest cell reading is less than 1.200, a charge is needed. Follow the previously noted procedures for charging.
3. A difference of 50 points (0.050) or more between highest and lowest cell readings indicates a problem battery. Should you encounter this situation, attempt one recharge using the slow charge method described in this TSB. If the deviation in cell readings still exceeds 0.050, the battery must be replaced.