

2012 - Mazda6 - Engine

BATTERY RECHARGING [MZR 2.5]

Using GR8-1291:

(See [GR8-1291 INSTANT TRAINING MODULE \(VIDEO\)](#).)

WARNING:

- Keep all flames away from the battery, otherwise evaporated gas from the battery fluid may catch fire and cause serious injury.
1. Remove the battery filler caps and check the water level. If necessary, add water to the appropriate level. Reinstall the caps.
 2. Attach the large red clamp to the positive battery terminal and the large black clamp to the negative terminal.
 3. Select the diagnostic icon in the Main Menu, then press the NEXT key.
 4. Follow the on-screen instructions to input the appropriate information. Refer to the Mazda GR8-1291 Instruction Manual for more information.
 5. The GR8-1291 will test and charge the battery. Before the diagnostic charging results are displayed, use the keypad on the Control Module to input the last 5 digits of the vehicle's VIN and press NEXT to continue.
 6. After the charging is completed, the Mazda GR8-1291 will print out the diagnostic charging results and display one of the following results listed below. Review the results and follow the action step for the displayed result.

Battery Tester Display	Action Step
GOOD BATTERY	Return the battery to service.
REPLACE BATTERY	Replace the battery.
BAD CELL - REPLACE	Replace the battery. WARNING: • Do not charge the battery. Charging a battery with one or more bad cells

	could cause an explosion and serious harm to the user.
SIDE POST TEST	Test data was inconclusive using the side post. Retest using side post adapters.
JUMP START POST	Data was inconclusive using the jump start post. Retest at the battery terminals.

Without Using GR8-1291:

WARNING:

- Hydrogen and oxygen gases are produced during normal battery operation. This gas mixture can explode if flames, sparks, or lighted tobacco are brought near the battery. When charging or using a battery in an enclosed space, always provide ventilation and shield your face and eyes. Failure to follow these instructions may result in personal injury.
- Batteries contain sulfuric acid. Avoid contact with skin or eyes. Also, shield your eyes when working near the battery to protect against possible splashing of the acid solution. In case contact with the skin, eyes, or clothing, flush immediately with water for a period of 15 min. and get prompt medical attention. If acid is swallowed, call physician immediately. Failure to follow these instructions may result in personal injury.
- Wear safety glasses. Battery charging can be dangerous. While being charged, the battery produces a potentially explosive mixture of hydrogen and oxygen gases. Keep sparks, flames and lighted cigarettes away from batteries. In case of acid contact with skin, eyes or clothing, flush immediately with large amounts of water. Get medical attention. Failure to follow these instructions may result in personal injury.

CAUTION:

- Keep the battery and the surrounding parts, particularly the top, clean and dry. If electrolyte is evident on the top of the battery, clean it immediately. Even a weak electrolyte quickly attacks and corrodes the cable connections, battery hold-down clamp and battery ground cable. Use a rag soaked in a weak solution of water and baking soda to counteract the action of the spilled electrolyte.

NOTE:

- If excessive gassing of electrolyte spewing occurs during the charge, discontinue charging. The battery has reached usable charge. If the battery will not accept at least **5 A** after **20 min.** of charging, install a new battery.

1. Before recharging a discharged battery, inspect and repair the following conditions, if they exist:

- a. Loose drive belt
- b. Pinched or grounded generator voltage regulator wiring
- c. Loose connections of generator voltage regulator wiring at the generator or voltage regulator
- d. Loose or corroded connections at battery, grounded starter motor relay or engine

2. Excessive battery drain due to:

a. Interior lamps remaining energized (damaged or misadjusted switch, door ajar, etc.)

b. Lamp switch continuously on

NOTE:

- Cold batteries will not readily accept a charge. Therefore, batteries should be allowed to warm up to **approx. 5 °C { 41 °F}** before charging. This may require four to eight hours at room temperature depending on the initial temperature and battery size.
- A battery which has been completely discharged may be slow to accept a charge initially, and in some cases may not accept a charge at the normal charger setting. When batteries are in this condition, charging can be started by use of the dead battery switch on the charger setting so equipped.
- To determine whether a battery is accepting a charge, follow the charger manufacturer's instructions for use of the dead battery switch. If switch is a spring-loaded type, it should be held in the ON position for up to **3 min.**
- After releasing the switch and with the charger still on, measure the battery voltage using a tester. If it indicates **12 V** or higher, the battery is accepting a charge and is capable of being recharged. However, it may require up to **2 h** of charging with batteries colder than **5 °C { 41 °F}** before the charge rate is high enough to be indicated on the charger ohmmeter. For all non-damaged batteries that cannot be charged by this procedure, install a new battery.
- A rapid recharge procedure has been developed for recharging batteries that have passed the Load Test and only need a recharge. This can be due to: in-use no start battery failures (vehicle will not crank due to low battery charge), or the battery has discharged in the vehicle due to key-off drains; refer to the component test.

3. The battery can be rapidly recharged by using either of the following method:

- a. Perform a **2 h** charge using **20 A** constant current (manual setting on charger)
- b. Perform a **2 h** charge using a constant potential (automatic setting on charger)

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