

# ENGINE COOLANT REPLACEMENT

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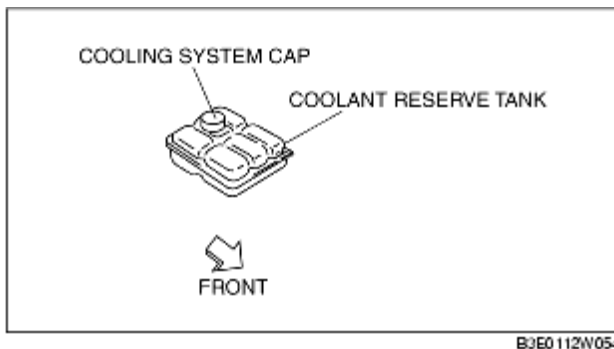
## Warning

- Remove and install all parts when the engine is cold, otherwise they can cause severe burns or serious injury.
- Turn off the engine and wait until it is cool. Even then, be very careful when removing the cap. Wrap a thick cloth around it and slowly turn it counterclockwise 2.5 turns. Step back while the pressure escapes.
- When you are sure all the pressure is gone, turn the cap using the cloth, and remove it.

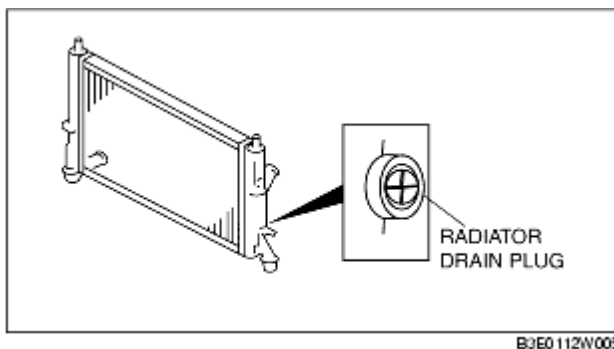
## Caution

- Use engine coolant at a concentration that meets the environmental conditions in which the vehicle is driven, otherwise engine damage could occur.
- The engine has aluminum parts that can be damaged by alcohol or methanol antifreeze. Do not use alcohol or methanol in the cooling system. Use only ethylene-glycol-based coolant.
- Use only soft (demineralized) water in the coolant mixture. Water that contains minerals will reduce the coolant's effectiveness.
- Engine coolant damages paint. If engine coolant does get on a painted surface, rinse it off quickly.

1. Remove the cooling system cap.



2. Remove the under cover.
3. Remove the radiator drain plug and drain the engine coolant into a container.



4. Flush the cooling system with water until all traces of color are gone.
5. Let the system drain completely.

6. Tighten the radiator drain plug.

**Tightening torque**

**1.2-1.5 N·m {13-15 kgf·cm, 11-13 in·lbf}**

7. Referring to the following chart, select proper volume percentage of the water and coolant.

**Antifreeze solution mixture percentage**

Coolant protection	Volume percentage		Gravity at 20 °C {68 °F}
	Water	Coolant	
-16 °C {3 °F} or more	65	35	1.057
-26 °C {-15 °F} or more	55	45	1.072
-40 °C {-40 °F} or more	45	55	1.086

8. Refill the coolant into the coolant reserve tank up to the MAX mark on the tank.

9. Fully install the cooling system cap.

**Caution**

- If the water temperature gauge rises too high, stop the engine and decrease the water temperature to prevent overheating. Then, verify the malfunctioning part and repair or replace it.

10. Start the engine and idle it until the thermometer indicator is in the center when the engine is at **1,500 rpm or less**.

11. After the engine warms up, perform the following steps verifying that engine coolant temperature does not increase too high using the thermometer.

- (1) Run the engine at **2,500 rpm** for **5 min**.
- (2) Run the engine at **3,000 rpm** for **5 s**, then idle.
- (3) Repeat Step (1), (2) approx. two times.

12. Stop the engine and wait until the coolant temperature decreases.

13. Inspect the coolant level.

- If it is low, refill the coolant into the coolant reserve tank up to the MAX mark on the tank.

14. Inspect for coolant leakage.

- If the coolant leaks, specify the malfunctioning part and repair or replace it.