Inspection

Radiator hoses

1. Check radiator hoses for the following
   (1) Improper attachment
   (2) Leaks
   (3) Cracks
   (4) Damage
   (5) Loose connections
   (6) Chafing
   (7) Deterioration

Coolant level

1. Check the coolant level in the coolant reservoir. Make sure it is between the "F" mark and "L" mark.
2. If the coolant level in the coolant reservoir is at or below the "L" mark, add coolant to bring it between the "L" and "F" marks, then inspect the cooling system for leaks.

Coolant quality

1. Remove the pressure cap.
2. Check if there are any excessive deposits of rust or scale around the pressure cap sub-assembly and radiator filler hole. Also, the coolant should be free of oil.
   If excessively dirty, clean the coolant passage and replace the coolant.
3. Install the pressure cap.

Engine Coolant Refilling And Bleeding

[Theta-II 2.0 T-GDI]

⚠ CAUTION
Never remove the radiator cap when the engine is hot. Serious scalding could be caused by hot fluid under high pressure escaping from the radiator.

NOTICE
When pouring engine coolant, be sure to shut the relay box lid and not to let coolant spill on the electrical parts or the paint. If any coolant spills, rinse it off immediately.

1. Make sure the engine and radiator are cool to touch.
2. Remove the radiator cap (A).

3. Remove the engine room front under cover.
   (Refer to Engine Mechanical System - "Engine Room Under Cover")
4. Loosen the drain plug (A) and drain the engine coolant.

5. Tighten the radiator drain plug securely after draining the engine coolant.
6. After draining engine coolant in the reservoir tank, clean the tank.
7. Fill the radiator with water through the radiator cap and tighten the cap.

> **Information**
> To most effectively bleed the air, pour the water slowly and press on the upper/lower radiator hoses.

8. Start the engine and allow to come to normal operating temperature. Wait for the cooling fans to turn on several times. Accelerate the engine to aid in purging trapped air. Shut engine off.
9. Wait until the engine is cool.
10. Repeat steps 1 to 9 until the drained water runs clear.
11. Fill fluid mixture with coolant and water (55 - 60%) (except for North America, Europe and China : 45-50%) slowly through the radiator cap. Push the upper/lower hoses of the radiator so as bleed air easily.

> **NOTICE**

- Use only genuine antifreeze/coolant.
- For best corrosion protection, the coolant concentration must be maintained year-round at 55% (except for North America, Europe and China : 45%) minimum.
  Coolant concentrations less than 55% (except for North America, Europe and China : 45%) may not provide sufficient protection against corrosion or freezing.
- Coolant concentrations greater then 60% will impair cooling efficiency and are not recommended.

NOTICE

- Do not mix different brands of antifreeze/coolants.
- Do not use additional rust inhibitors or antirust products; they may not be compatible with the coolant.

12. Start the engine and run coolant circulates.
    When the cooling fan operates and coolant circulates, refill coolant through the radiator cap.
13. Repeat step 12 until the cooling fan 3-5 times and bleed air sufficiently out of the cooling system.
14. Install the radiator cap and fill the reservoir tank to the "MAX" (or "F") line with coolant.
15. Run the vehicle under idle until the cooling fan operates 2-3 times.
16. Stop the engine and wait coolant gets cool.
17. Repeat steps 11 to 16 until the coolant level doesn"t fall any more, bleed air out of the cooling system.

Information

As it is to bleed air out to the cooling system and refill coolant when coolant gets cool completely, recheck the coolant level in the reservoir tank for 2-3 days after replacing coolant.

Coolant capacity :

Approx. 8.8 L (2.32 U.S.gal., 9.30 U.S.qt., 7.74 Imp.qt.)

[Lambda-II 3.3 T-GDI]

CAUTION

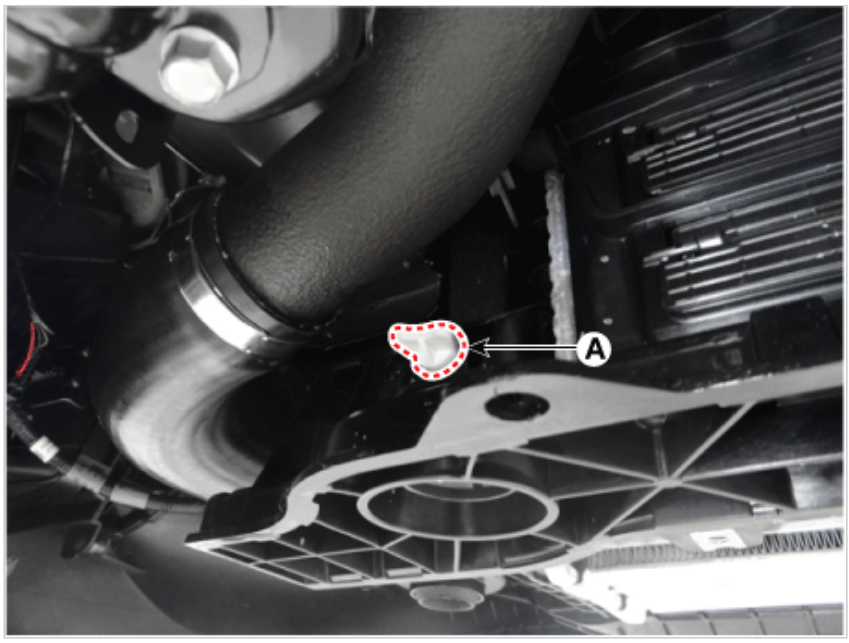
Never remove the radiator cap when the engine is hot. Serious scalding could be caused by hot fluid under high pressure escaping from the radiator.

NOTICE

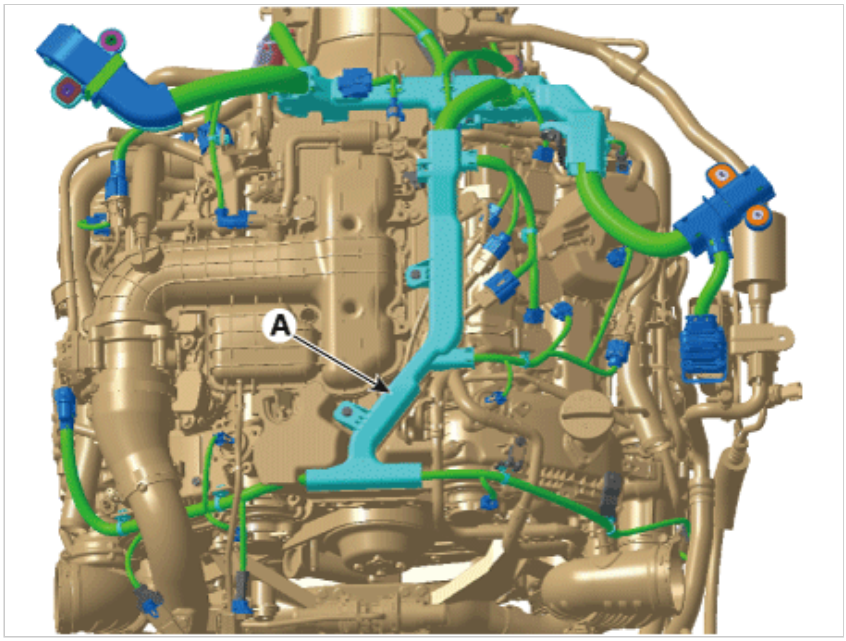
When pouring engine coolant, shut the relay box lid and be careful not to spill coolant on the electrical parts or the paint. Rinse off any spilt coolant immediately.

1. Make sure the engine and radiator are cool to the touch.
2. Remove the radiator cap (A).

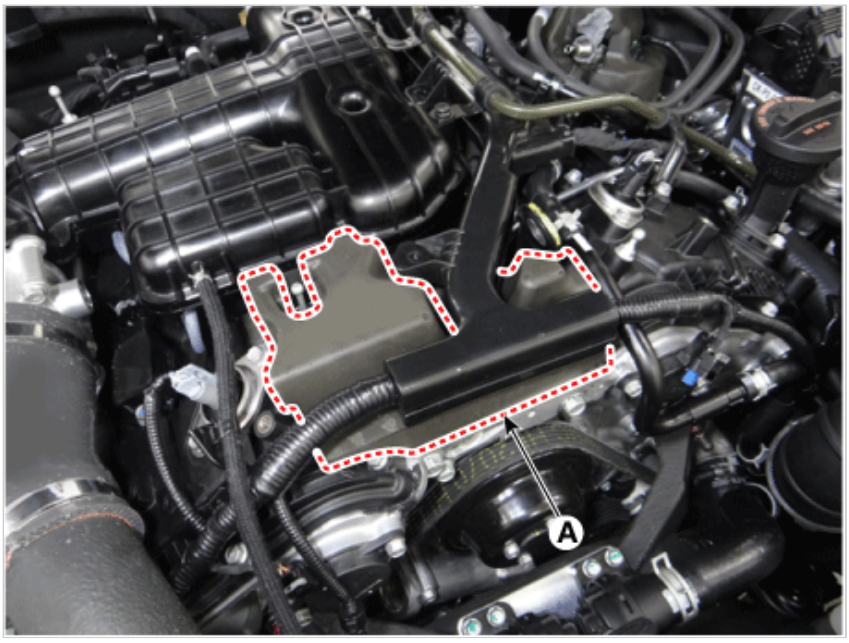
3. Remove the engine room front under cover.
   (Refer to Engine Mechanical System - "Engine Room Under Cover")
4. Loosen the drain plug (A), and drain the coolant.



5. Tighten the radiator drain plug securely.
6. Remove the reservoir tank.
   (Refer to Engine Mechanical System - "Reservoir Tank")
7. Drain the coolant from the reservoir tank, and clean the reservoir tank.
8. Install the reservoir tank.
   (Refer to Engine Mechanical System - "Reservoir Tank")
9. Separate the wiring protector (A).



10. Remove the foam (A).



11. Disconnect the coolant vent hose (A).

12. Fill with fluid mixture of coolant and water (55 - 60% / or 45 - 50% in North America, Europe and China) slowly through the radiator cap. Push the upper/lower hoses of the radiator so as to bleed air easily.

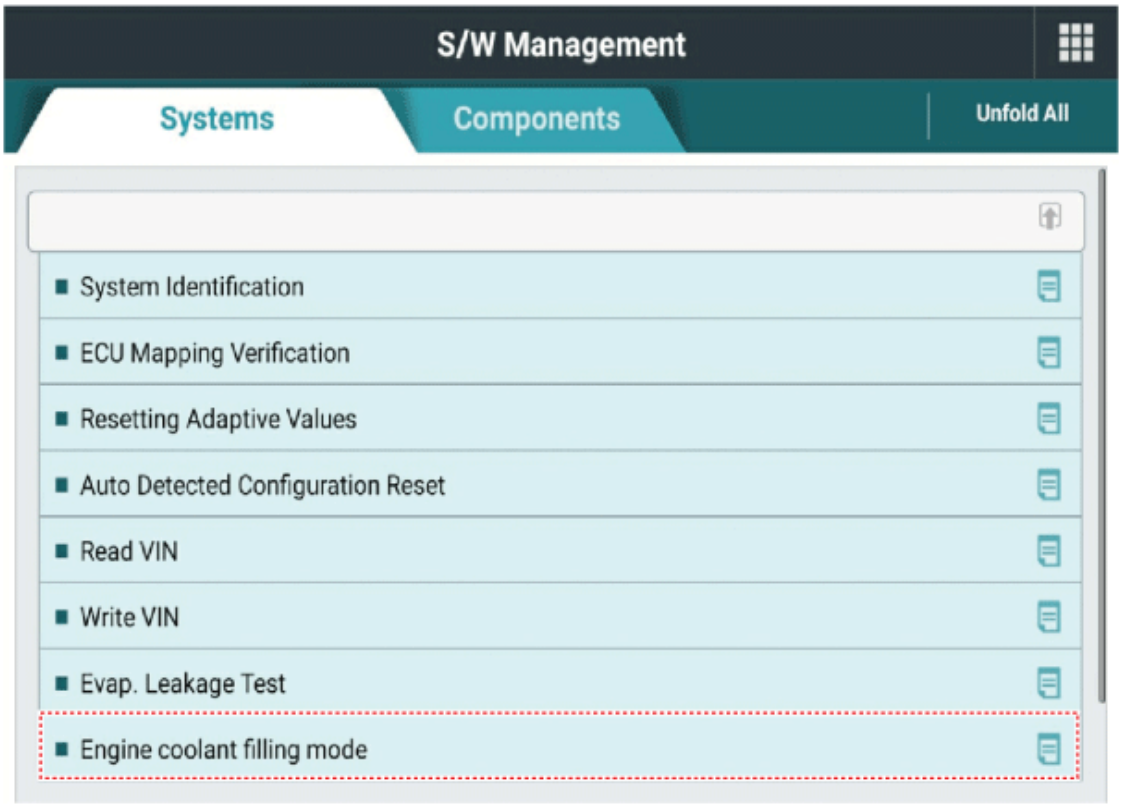
Coolant capacity :
Approx. 11.6 L (3.06 U.S.gal.,12.26 U.S.qt., 10.20 Imp.qt.)

NOTICE

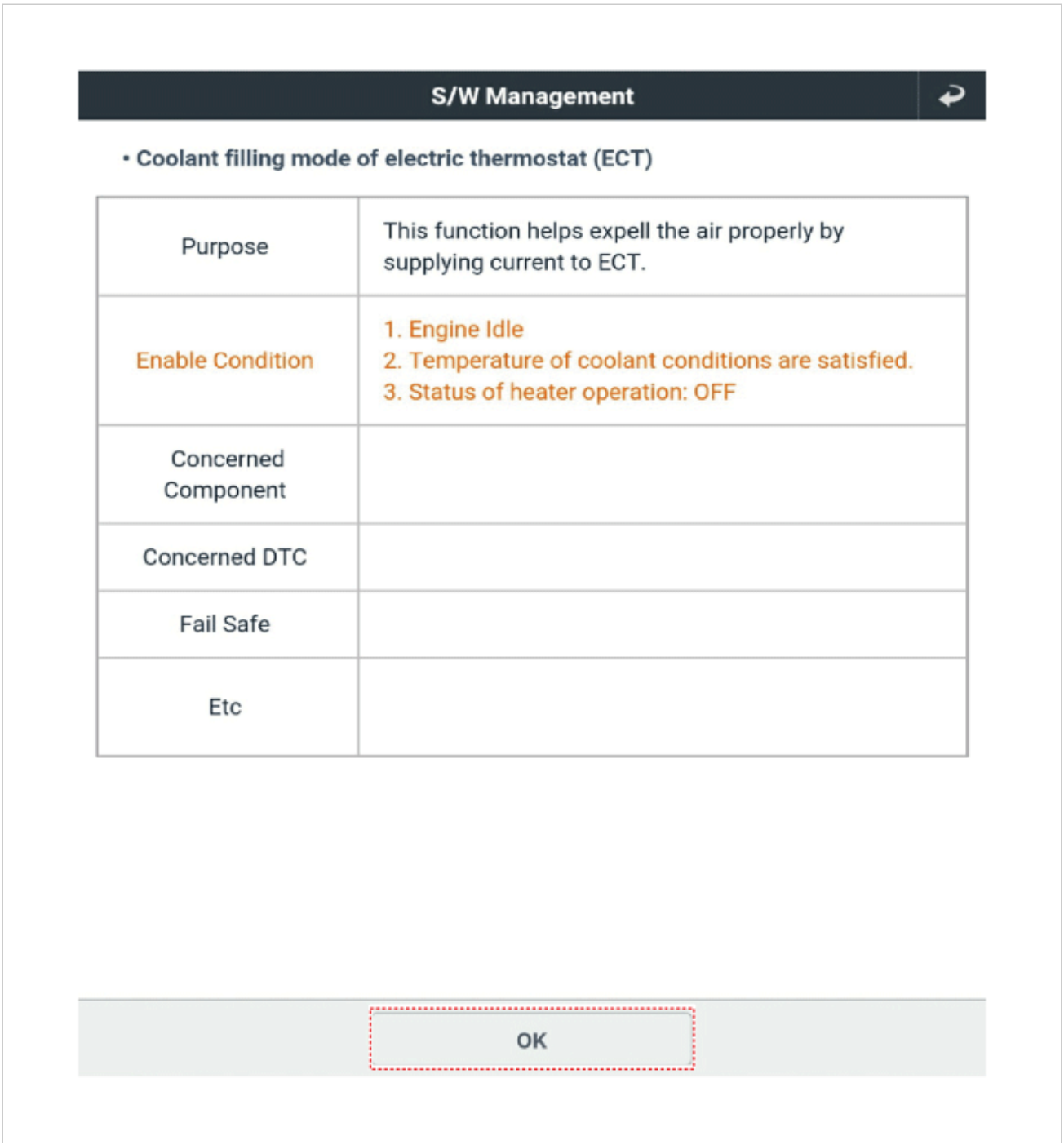
- Use only the specified antifreeze/coolant.
- For best corrosion protection, the coolant concentration must be maintained year-round at 55% (or 45% in North America, Europe and China) minimum. Coolant concentrations less than 55% (or 45% in North America, Europe and China) may not provide sufficient protection against corrosion or freezing.
- Coolant concentrations greater then 60% will impair cooling efficiency and are not recommended.
- Do not mix different brands of antifreeze / coolants.
- Do not use additional rust inhibitors or antirust products; they may not be compatible with the coolant.

13. When the coolant flows out through the disconnected vent hose, connect the vent hose securely to the nipple.
14. Connect the KDS
15. Start the engine.
16. Turn off the A/C and heater, and then keep it idle for 10 minutes to raise the engine coolant temperature.

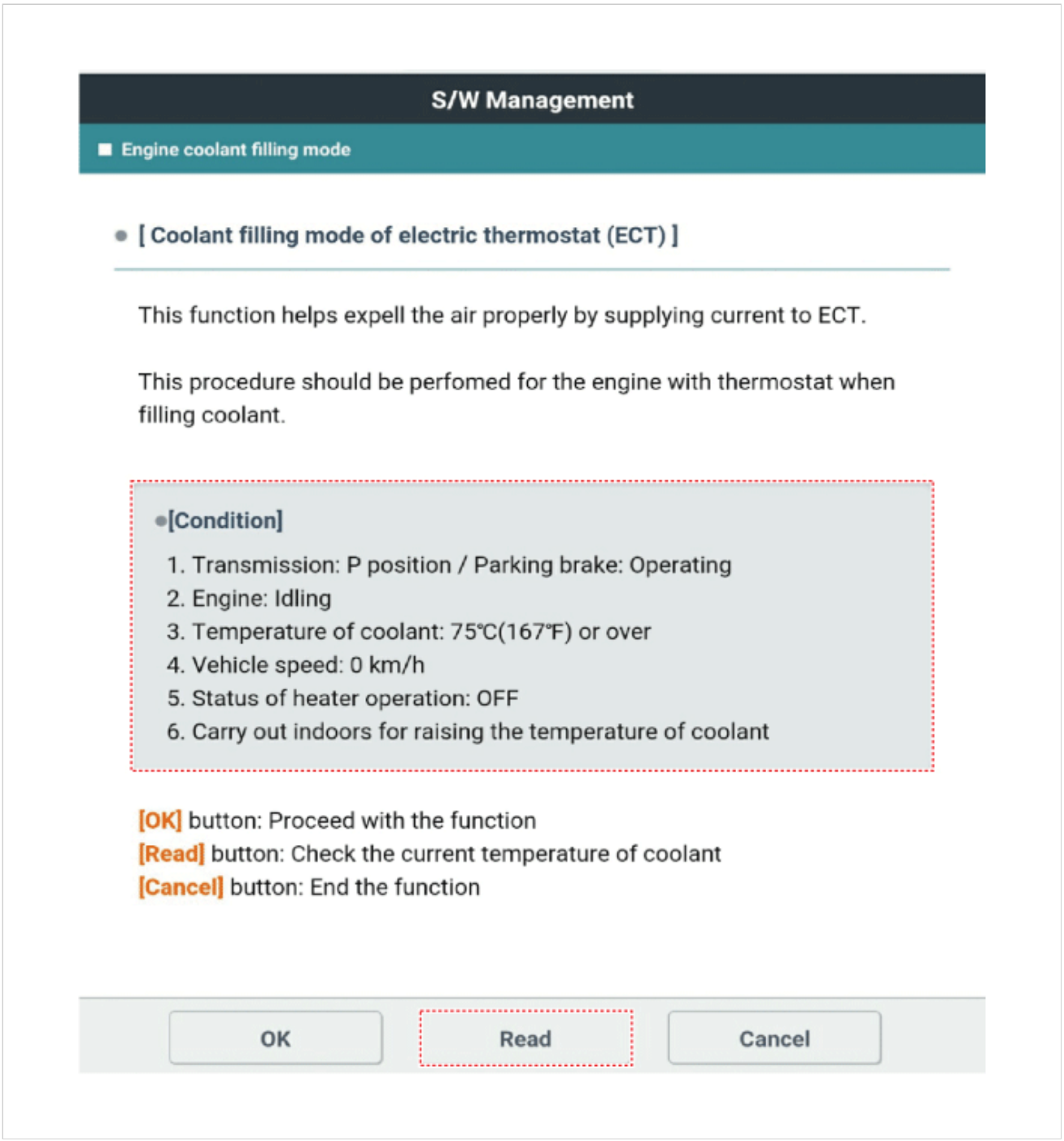
17. Perform the "Engine coolant filling mode".



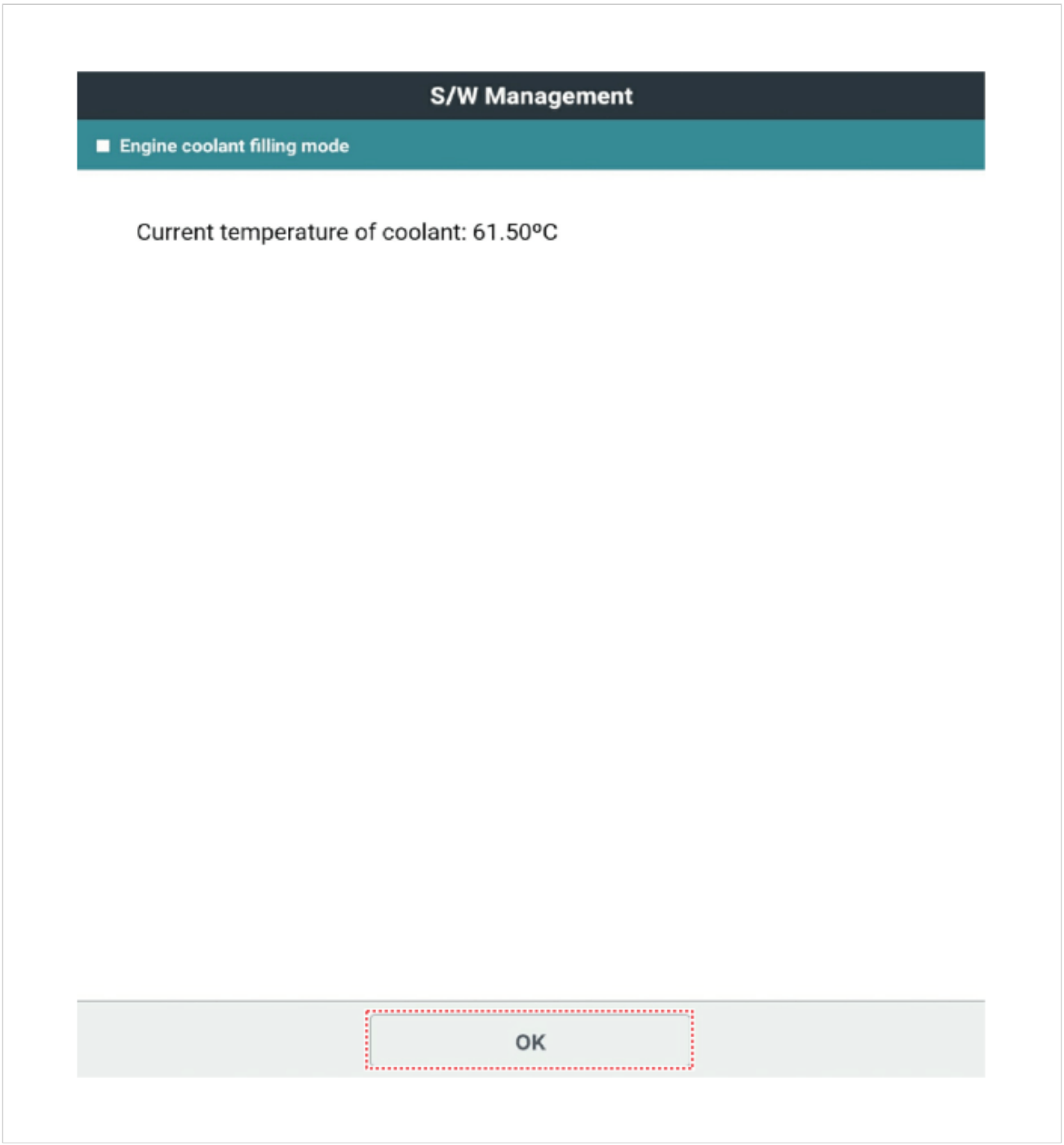
18. After confirming that the condition of the vehicle is satisfied with the inspection condition, and then press the "OK" button.



19. Check the engine coolant filling mode entry conditions and then press the "Read" to check the current coolant temperature.



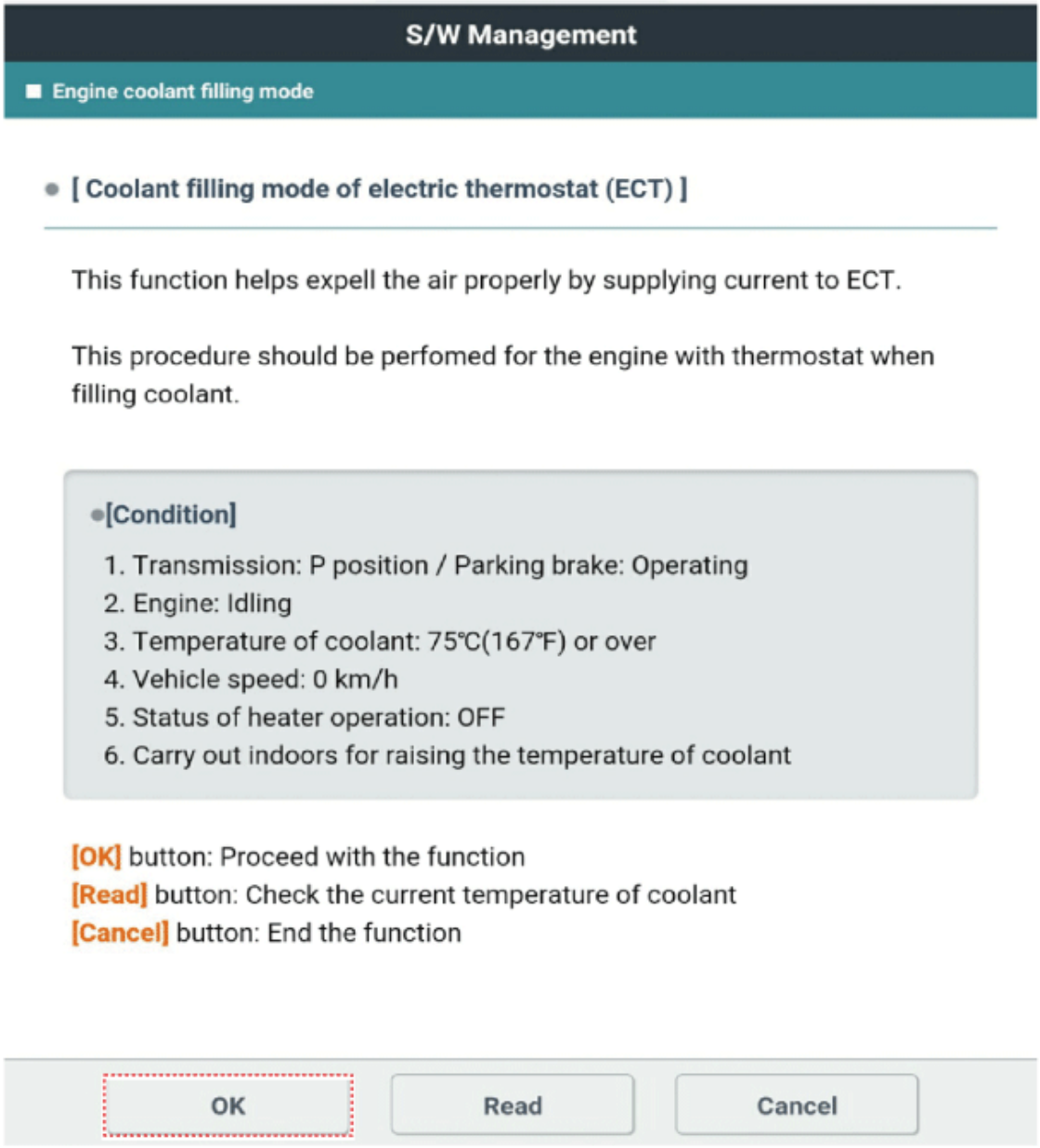
20. Check the current coolant temperature and then press the "OK".



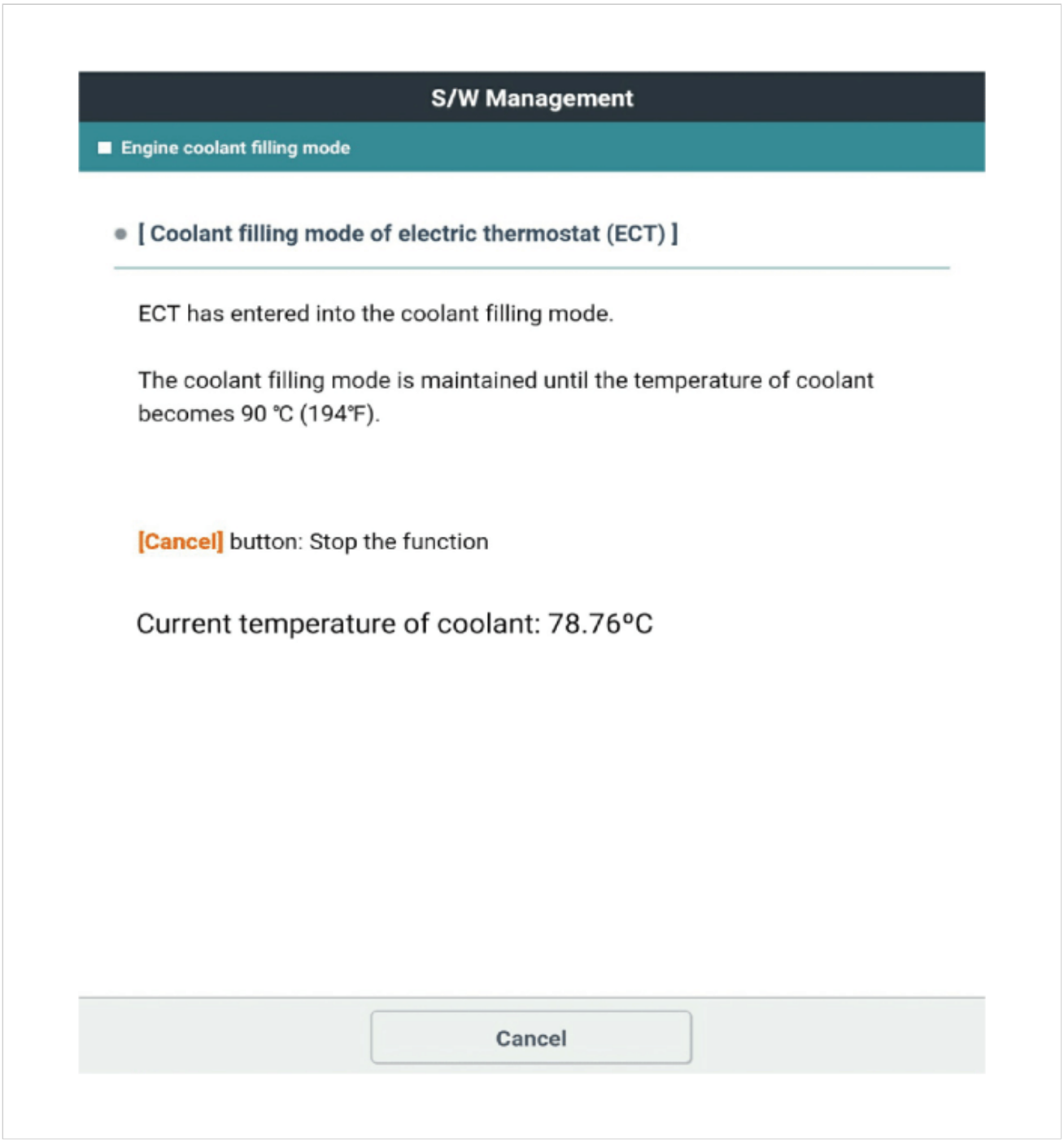
NOTICE

The current temperature of coolant is above 75°C (167°F), engine coolant filling mode can be performed.

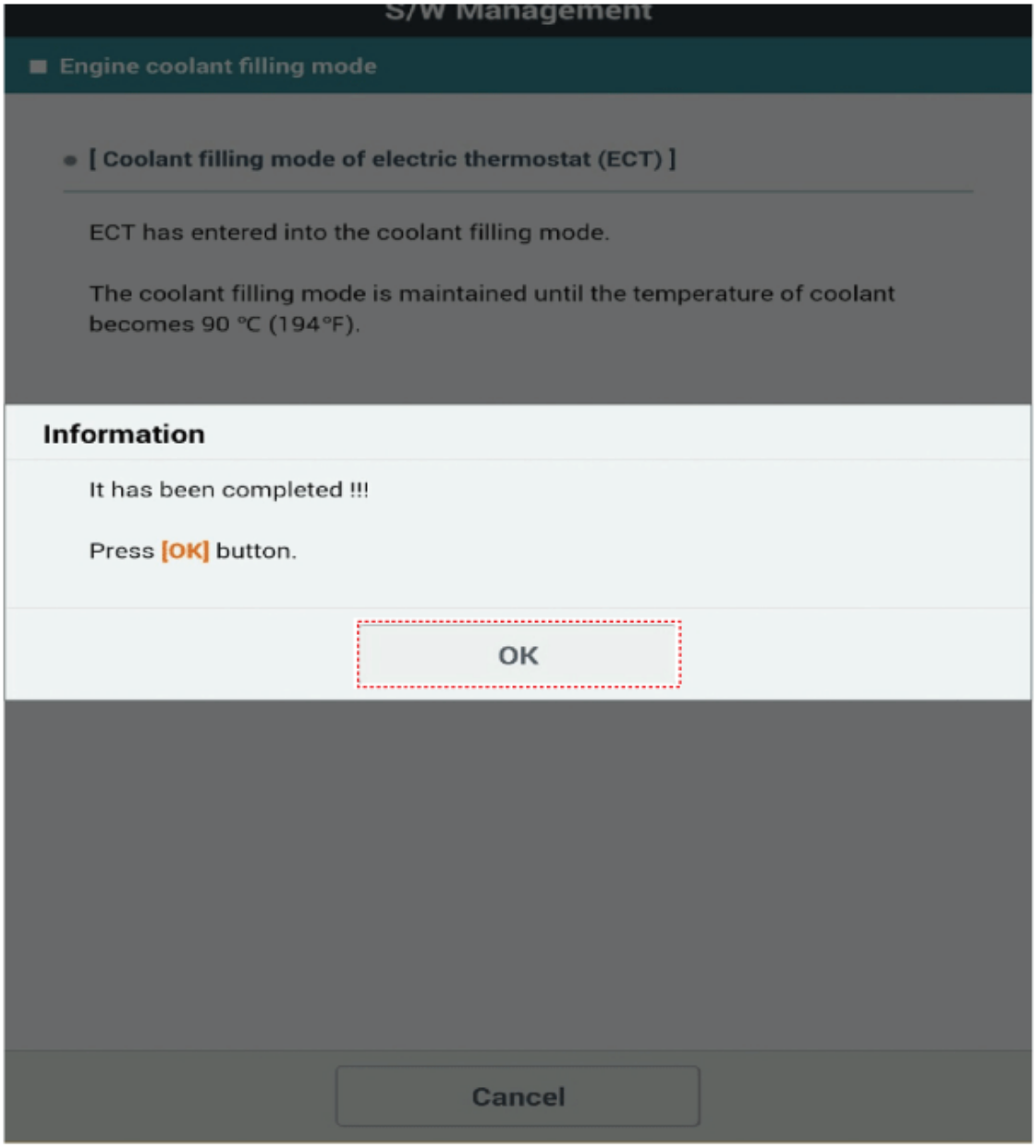
21. If the coolant temperature is above 75°C (167°F), press the "OK" to performing engine coolant fill mode.



22. The engine coolant filling mode is maintained until the temperature of coolant becomes 75°C (194°F).

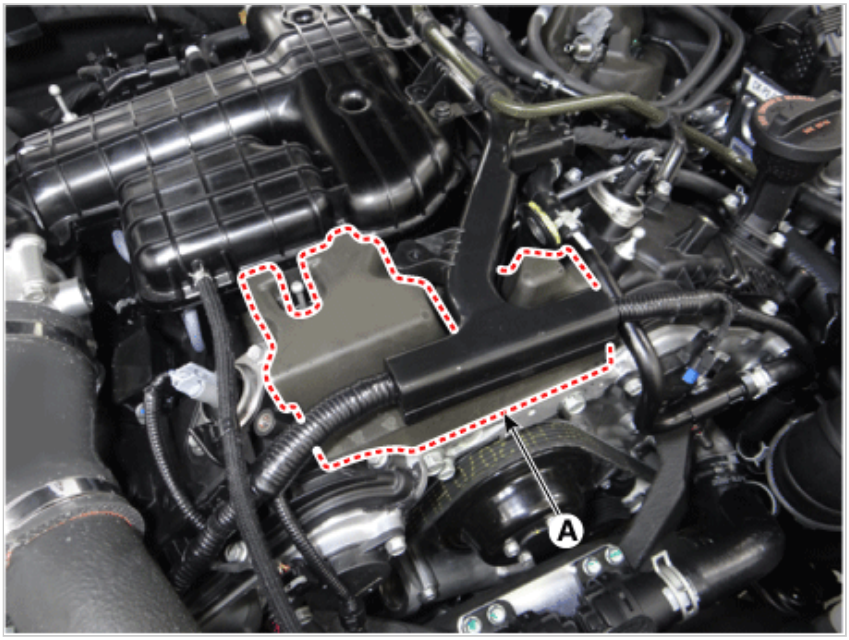


23. When the engine coolant filling mode completed, press the "OK".



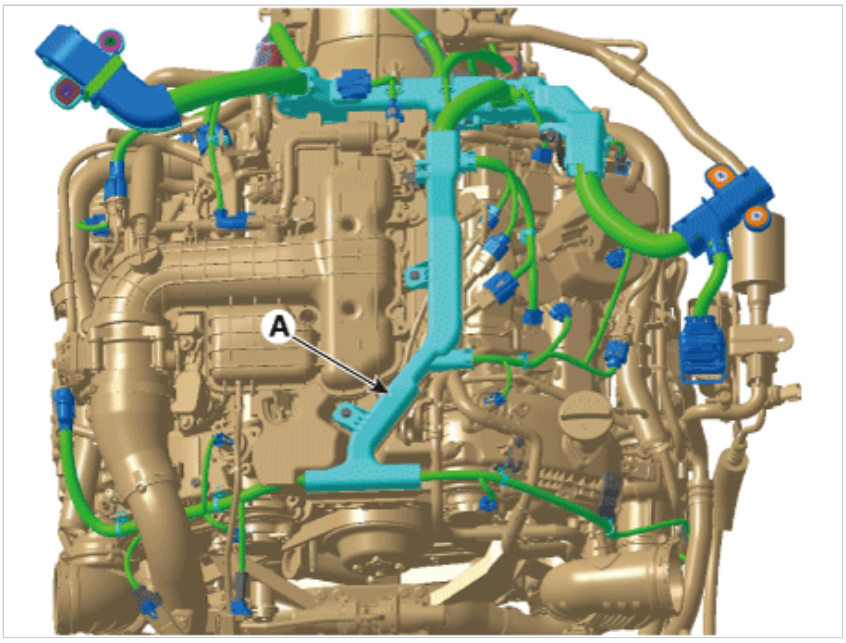
24. Disconnect the KDS.
25. Maintain engine RPM at 2,000 to 3,000 for about 3 minutes to promote cooling water circulation.
26. Keep the engine idle for 3 minutes to check the cooling fan is operating.
27. Maintain 15 minutes after turn off the engine.
28. Install the radiator cap (A).

29. Check the coolant level and then fill the reservoir tank to the "F" line with coolant.
30. Install the foam (A).



31. Istall the wiring protector (A).

Tightening torque :
6.9 - 9.8 N·m (0.7 - 1.0 kgf·m, 5.1 - 7.2 lb·ft, 60.8 - 86.8 lb·in)



32. Install the engine room front under cover.
(Refer to Engine Mechanical System - "Engine Room Under Cover")