

ENGINE COOLING – INGENIUM I6 3.0L PETROL

COOLING MODULE (G2344648)

REMOVAL AND INSTALLATION

26.40.16	COOLING MODULE – RENEW	2000 CC, INGENIUM DIESEL	3.50	USED WITHINS	
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PART(S)

STEP	PART NAME	QUANTITY
Installation Step 7	Air conditioning pipes to condenser O-ring seals	4

REMOVAL



WARNING:

Make sure the engine cooling system is cool prior to doing this procedure.



CAUTIONS:

- Engine coolant will damage the paint finished surfaces. If spilt, immediately remove the coolant and clean the area with water.
- The desiccant bag need only be changed under the following circumstances: There is dirt in the refrigerant circuit (For example: compressor seizure), the system is leaking and refrigerant has been lost to atmosphere, or the refrigerant circuit has been open more than 24 hours, due to repair.
- Before disconnecting any components, make sure the area is clean and free from foreign material. When disconnected all openings must be sealed.



NOTES:

- This procedure contains some variation in the illustrations depending on the vehicle specification, but the essential information is always correct.
- This procedure contains illustrations showing certain components removed to provide extra clarity.

1. Disconnect the startup battery ground cable.

Refer to: [Startup Battery Disconnect and Connect](#) (414-00 Battery and Charging System - General Information, General Procedures).

2. Evacuate the Air Conditioning (A/C) system.

Refer to: [Air Conditioning System Recovery, Evacuation and Charging](#) (412-00 Climate Control System - General Information, General Procedures).

3. Raise and support the vehicle on a suitable 2-post lift.

Refer to: [Jacking and Lifting](#) (100-02 Jacking and Lifting, Description and Operation).

4. Partially drain the engine cooling system.

Refer to: [Cooling System Partial Draining and Vacuum Filling](#) (303-03C Engine Cooling - INGENIUM I6 3.0 L Petrol, General Procedures).

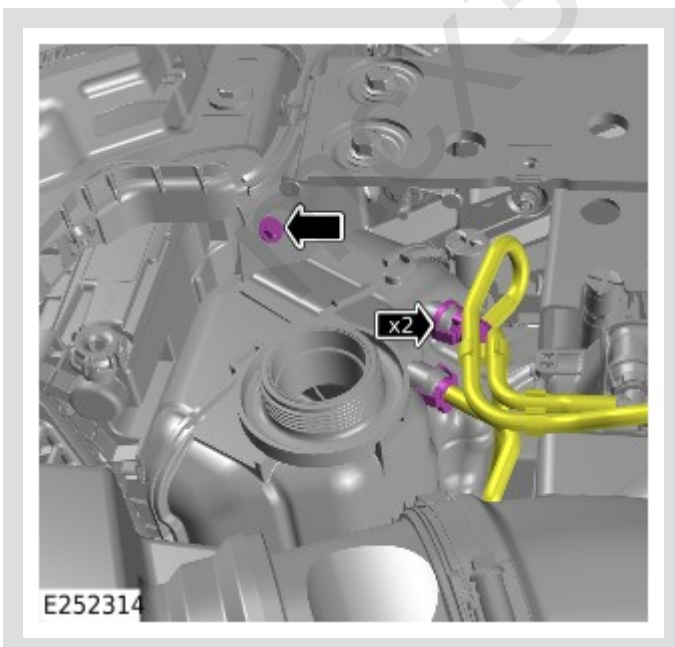
5. Remove the viscous cooling fan.

Refer to: [Viscous Cooling Fan](#) (303-03C Engine Cooling - INGENIUM I6 3.0L Petrol, Removal and Installation).

- 6.

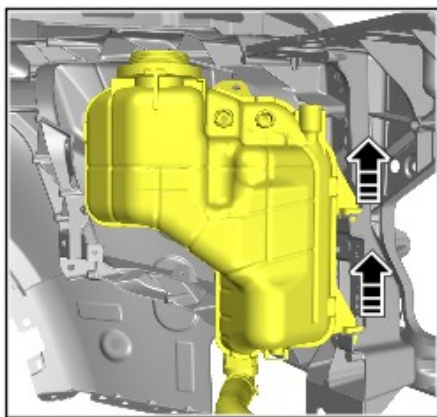
⚠ CAUTION:

Take extra care not to damage the component.

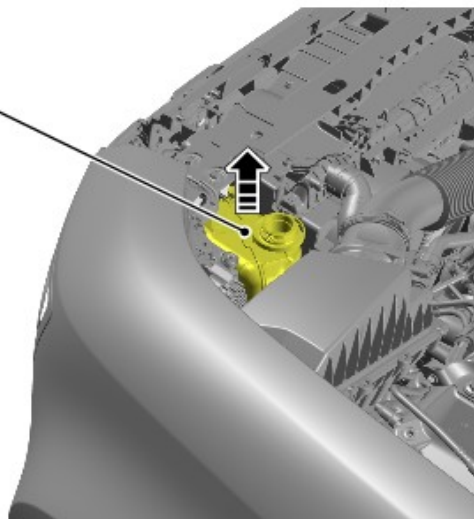


- Remove the coolant expansion tank bolt.
- Disconnect the 2 coolant pipe connectors.

7.



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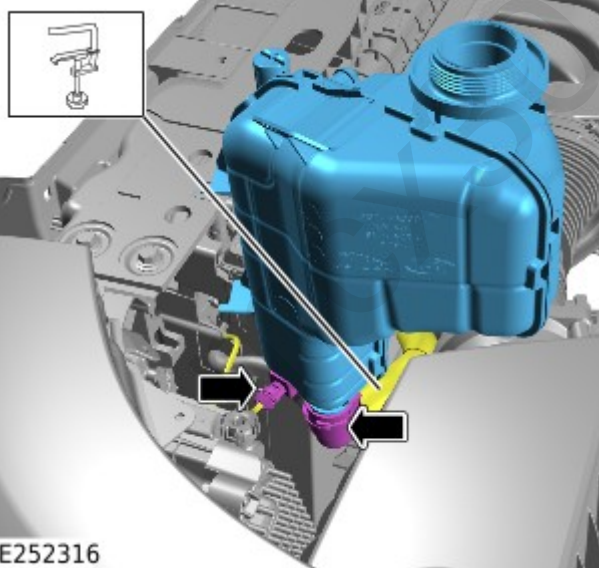


Release the coolant expansion tank.

8.

⚠ CAUTION:

Be prepared to collect escaping fluid.



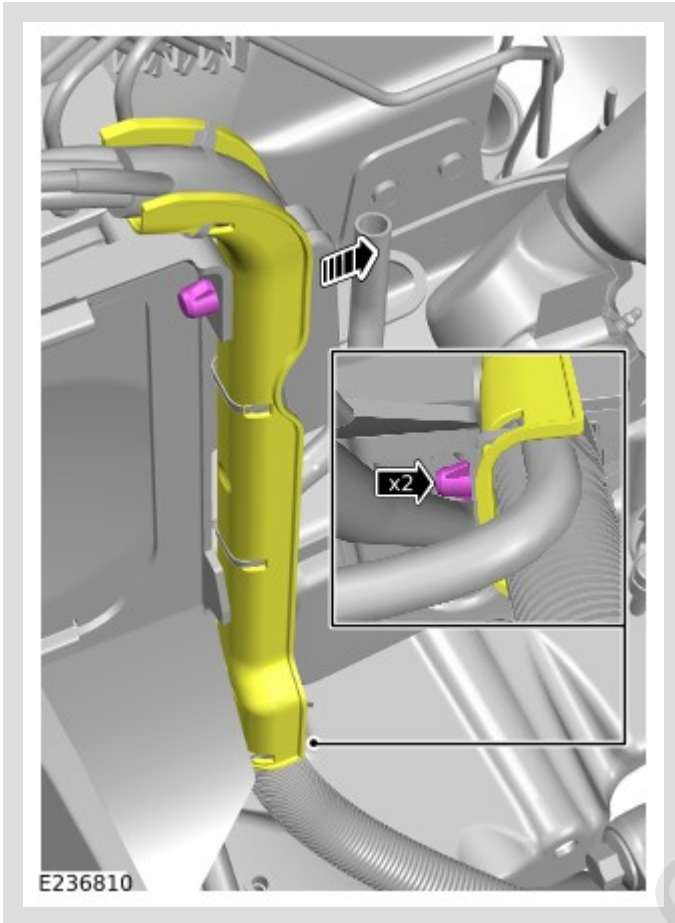
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- Disconnect the coolant expansion tank hose.
- Disconnect the electrical connector.
- Remove the coolant expansion tank.

9.

Remove the hood latch panel.

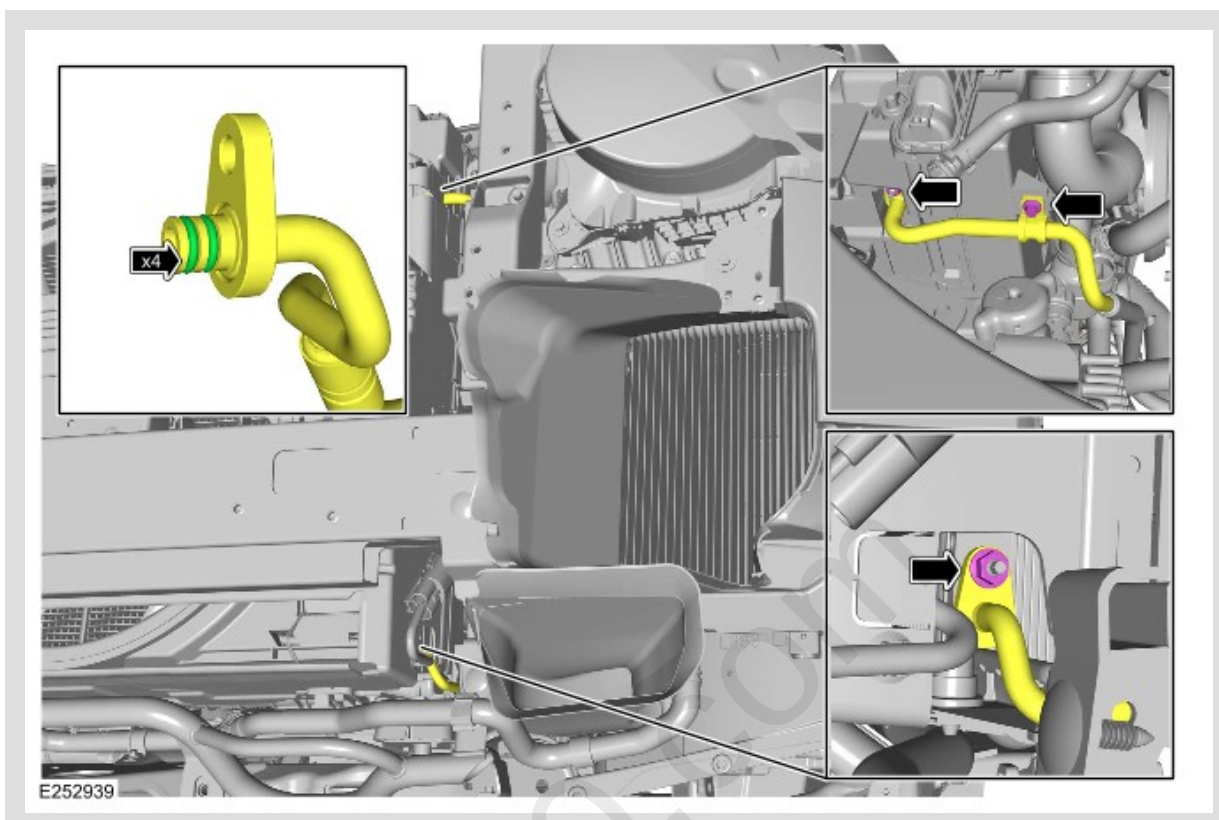
Refer to: [Hood Latch Panel](#) (501-02 Front End Body Panels, Removal and Installation).



- Release the 2 wiring harness bracket clips from the viscous cooling fan shroud.
- Reposition the wiring harness away from the viscous cooling fan shroud.

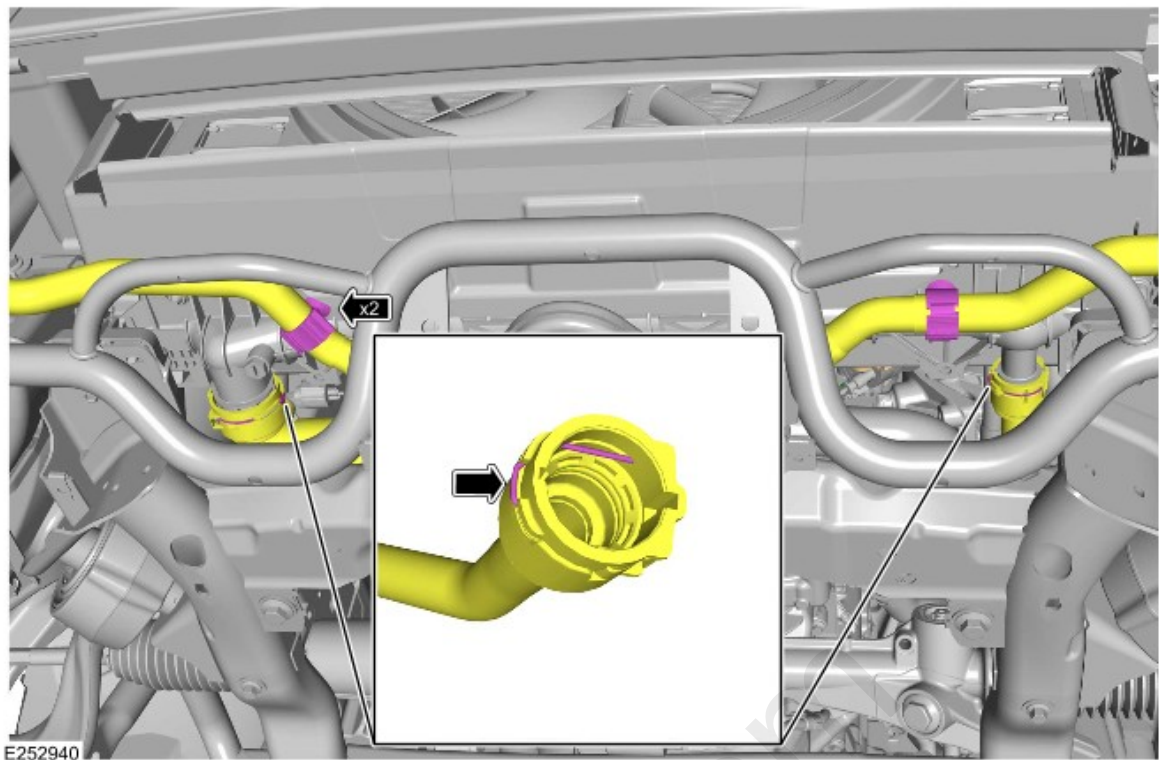
ⓘ CAUTION:

Make sure the 4 O-ring seals are discarded.



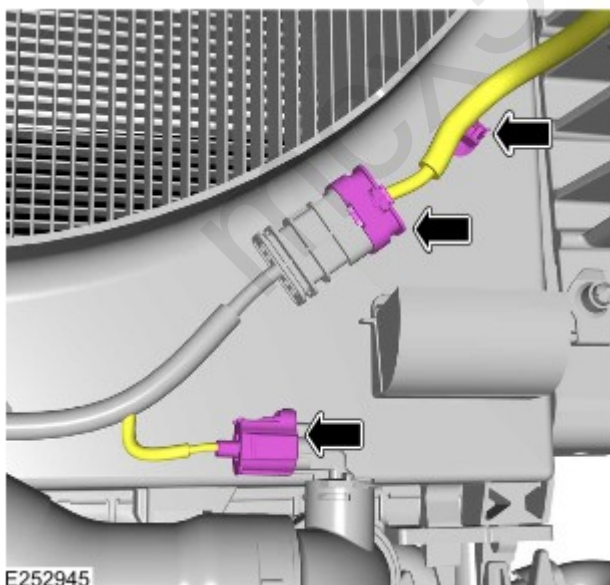
- Remove the upper A/C pipe bracket bolt.
- Remove the 2 nuts.
- Release the 2 A/C pipes and discard the 4 O-ring seals.

12.



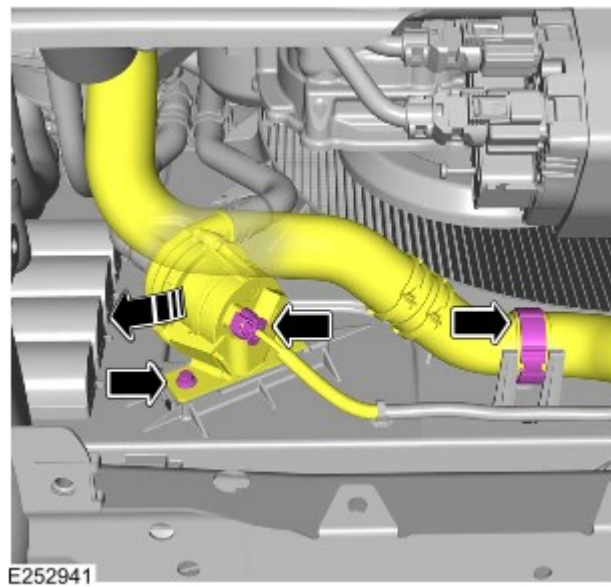
- Release the 2 coolant hose clips.
- Disconnect the 2 lower coolant hose connectors from the radiator.

13.



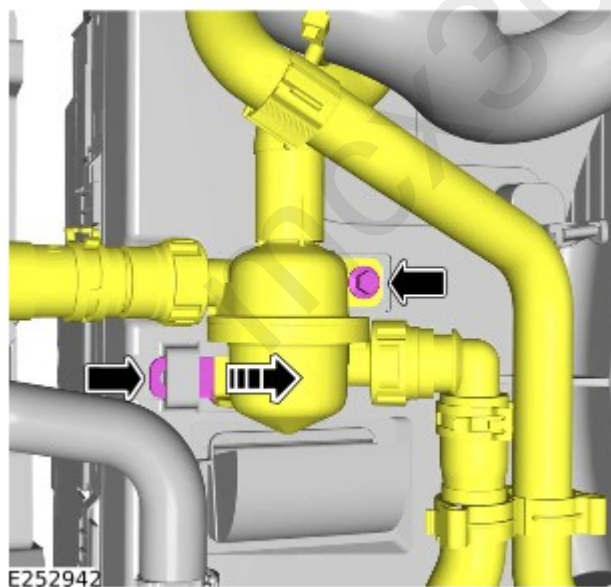
- Disconnect the 2 electrical connectors.
- Release the wiring harness clip.

14.

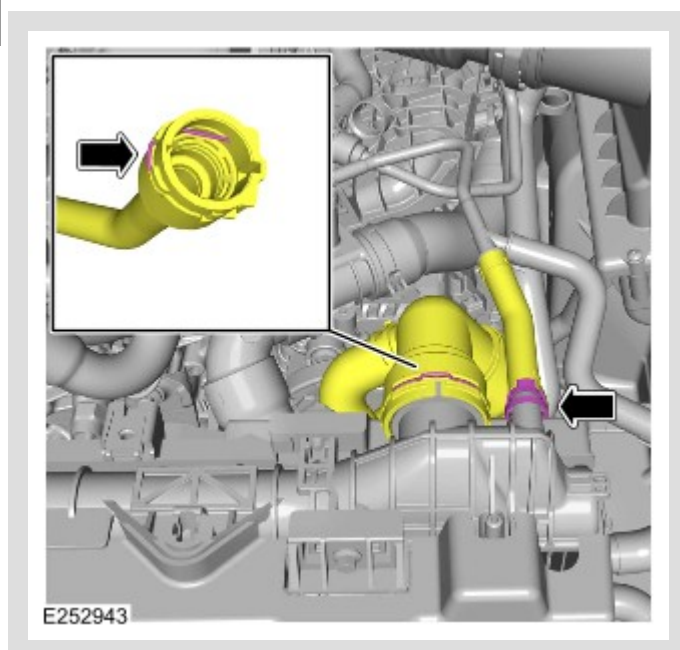


- Release the coolant hose from the plastic clamp.
- Disconnect the electrical connector from the charge air cooler coolant pump.
- Remove the bolt.
- Release the charge air cooler coolant pump.

15.



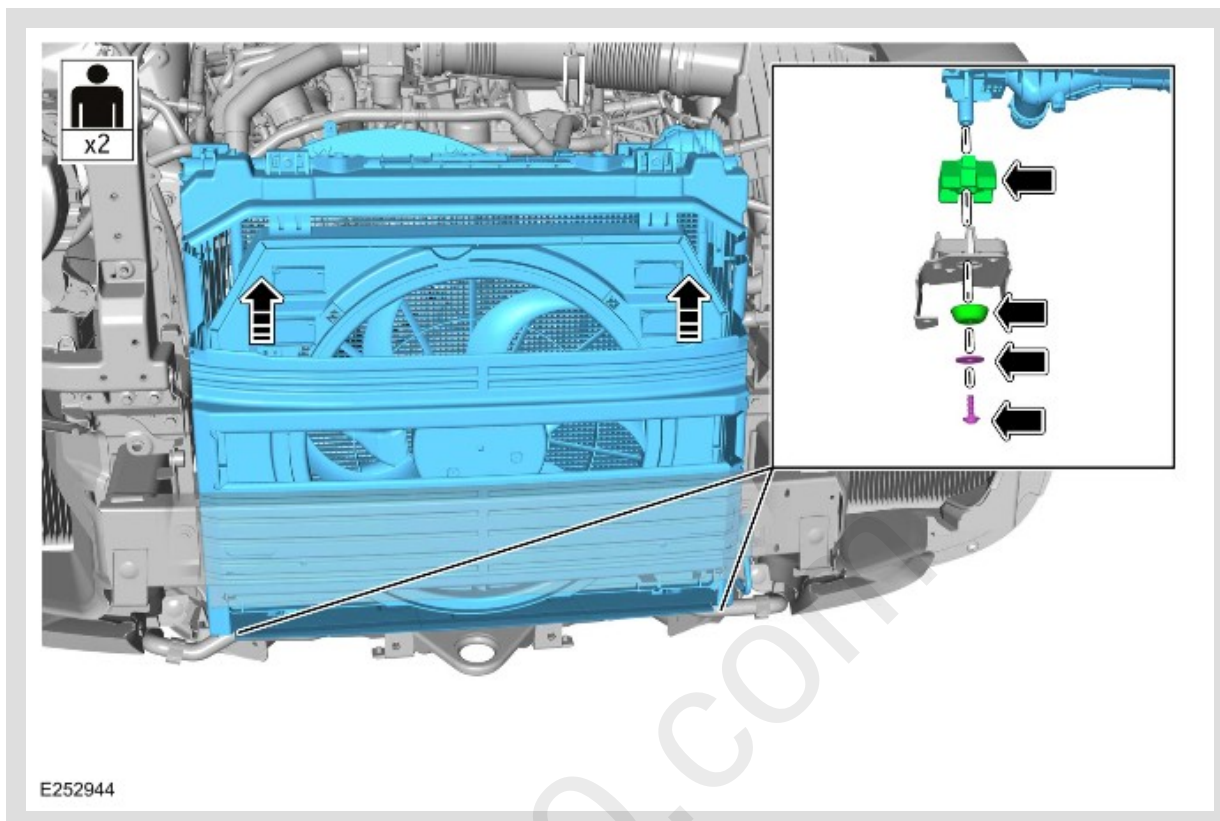
- Remove the bolt.
- Release the cooling system swirl pot.



Disconnect the 2 upper coolant hose connectors from the radiator.

ⓘ CAUTION:

Take extra care not to damage the component.



- Remove the 2 screws and the 2 washers.
- Remove the 2 radiator lower mounts.
- With assistance, carefully remove the cooling module.
- Remove the 2 radiator upper mounts.

INSTALLATION

1.

⚠ CAUTION:

Take extra care not to damage the component.

- Install the 2 radiator upper mounts.
- With assistance, install the cooling module.
- Install the 2 radiator lower mounts.
- Install the 2 washers and tighten the 2 screws.

Torque: 15Nm

2.

Connect the 2 upper coolant hose connectors to the radiator.

3.

- Position the cooling system swirl pot.
- Install and tighten the bolt.

Torque: 9Nm

4.

- Position the charge air cooler coolant pump.
 - Install and tighten the bolt.
- Torque: 9Nm*
- Connect the electrical connector to the charge air cooler coolant pump.
 - Install the coolant hose to the plastic clamp.

5.

- Connect the 2 electrical connectors to the wiring harness of the viscous cooling fan shroud and the coolant temperature sensor.
- Secure the wiring harness clip to the viscous cooling fan shroud.

6.

- Secure the 2 coolant hose clips to the cooling module.
- Connect the 2 lower coolant hose connectors to the radiator.

7.

 CAUTION:

Make sure the 4 new O-ring seals are installed.

 NOTE:

Lubricate the O-ring seals with clean refrigerant oil.

- Install the 4 new O-ring seals to the 2 Air Conditioning (A/C) pipes.
Renew Part: [Air conditioning pipes to condenser O-ring seals](#) Quantity: 4.
- Install the 2 A/C pipes to the A/C condenser.
- Install and tighten the 2 nuts.
Torque: 20Nm
- Install and tighten the upper A/C pipe bracket bolt.
Torque: 7Nm

8.

Secure the 2 wiring harness bracket clips to the viscous cooling fan shroud.

9.

Install the hood latch panel.

Refer to: [Hood Latch Panel](#) (501-02 Front End Body Panels, Removal and Installation).

10.

- Connect the coolant expansion tank lower hose to the coolant expansion tank.
- Connect the electrical connector to the coolant expansion tank level sensor.
- Install the coolant expansion tank.
- Install and tighten the bolt.
Torque: 5Nm
- Connect the 2 upper coolant pipes to the coolant expansion tank.

11.

Install the viscous cooling fan.

Refer to: [Viscous Cooling Fan](#) (303-03C Engine Cooling - INGENIUM I6 3.0L Petrol, Removal and Installation).

12.

Connect the startup battery ground cable.

Refer to: [Startup Battery Disconnect and Connect](#) (414-00 Battery and Charging System - General Information, General Procedures).

13.

Fill the engine cooling system with the correct amount of coolant fluid.

Refer to: [Cooling System Partial Draining and Vacuum Filling](#) (303-03C Engine Cooling - INGENIUM I6 3.0 L Petrol, General Procedures).

14. Recharge the A/C system to the correct specification.

Refer to: [Air Conditioning System Recovery, Evacuation and Charging](#) (412-00 Climate Control System - General Information, General Procedures).

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