

ON-VEHICLE INSPECTION

NOTICE:

Check that no DTCs are present in the ABS and VSC motor relay.

If any one of the DTCs (C0273/13, C0274/14, C1361/91) is detected, inspect the ABS and VSC motor relay in accordance with the troubleshooting of the brake system. (See page [BC-3](#)).

1. INSPECT COOLING FAN OPERATION WHEN COOLANT TEMPERATURE IS BELOW 95°C (203°F)

- (a) Check that the cooling fan does not operate when turning the ignition switch ON with the A/C switch OFF.
- (b) Check that the cooling fan operates when turning the ignition switch ON with the engine coolant temperature sensor connector disconnected.

2. INSPECT COOLING FAN OPERATION WHEN COOLANT TEMPERATURE IS ABOVE 97°C (207°F)

- (a) Warm up the engine and turn the A/C switch OFF.
- (b) Check that the cooling fan operates when the coolant temperature is above 97°C (207°F).
- (c) Check that the cooling fan stops when the coolant temperature is below 95°C (203°F).

3. INSPECT COOLING FAN ECU

- (a) Disconnect the cooling fan connectors.
- (b) Check that the fan operates when applying battery positive to terminal M+ and battery negative to terminal M-.
- (c) Measure the amperage.

Fan operation amperage:

10.6 to 16.6 A

- (1) Disconnect the cooling fan No." connector.
- (2) Check that the fan operates when applying battery positive to terminal S+ and battery negative to terminal S-.
- (3) Measure the amperage.

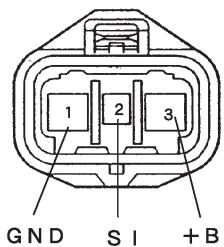
Fan operation amperage:

5.6 to 11.6 A

If the amperage is not as specified, replace the fan motor(s).

(4) Reconnect the cooling fan connectors.

Cooling Fan ECU Connector



4. INSPECT COOLING FAN ECU

- Check the cooling fan ECU power source.
 - Disconnect the cooling fan ECU connector.
 - Measure the voltage between terminals +B and GND.

Voltage:

9 to 14 V

- If the voltage is not as specified, check the fusible links, fuses, wire harness and fan relay.
- If the terminal voltage is within specification and the motor is working properly, replace the cooling fan ECU.

- Reconnect the connectors.

HINT:

Wire harness condition is diagnosed by cooling fan operation.

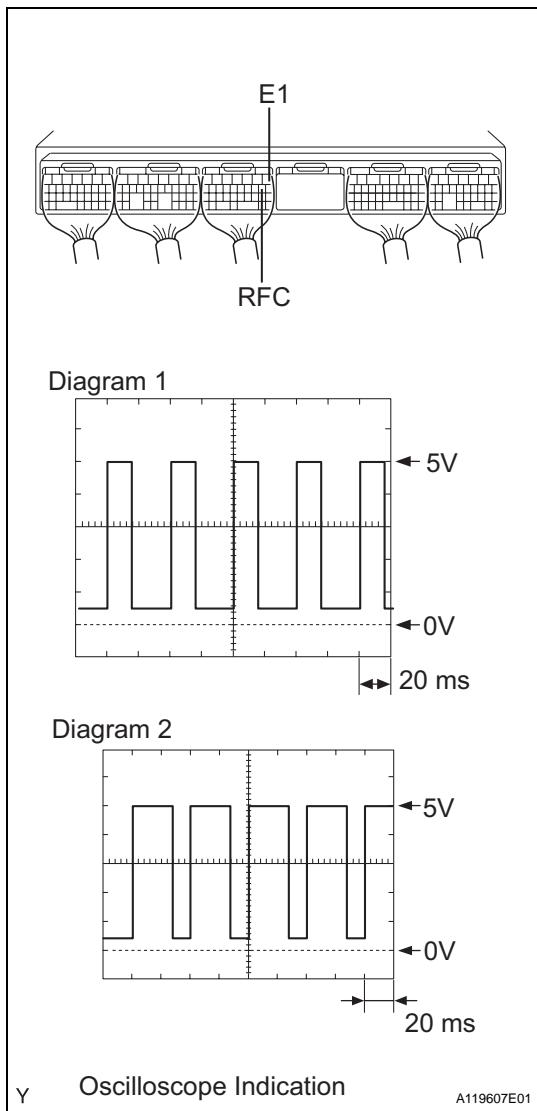
Cooling fan operation	Wire harness condition
Not operate	Short
Operate continuously	Open

- Check the ECM power source.
- Check RFC signal generation.

NOTICE:

Perform this inspection when coolant temperature is 82°C (180°F) below.

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- (1) Connect an oscilloscope to terminals RFC and E1 of the ECM.
- (2) Check the signal generation and measure the fan amperage under condition.

Condition	RFC signal generation	Fan amperage	Fan operation
Engine stopped, IG switch ON	-	-	Not operate
Engine idling, A/C OFF	-	-	Not operate
Engine idling, A/C ON	See Diagram 1	3 to 13 A	Operate
Engine idling, Engine coolant temperature sensor connector disconnected	See Diagram 2	5 to 21 A	Operate (High speed)

HINT:

- If RFC signal is not as specified, replace the ECM.
- When the fan amperage has a problem despite the RFC signal that has no problem, replace the cooling fan ECU.