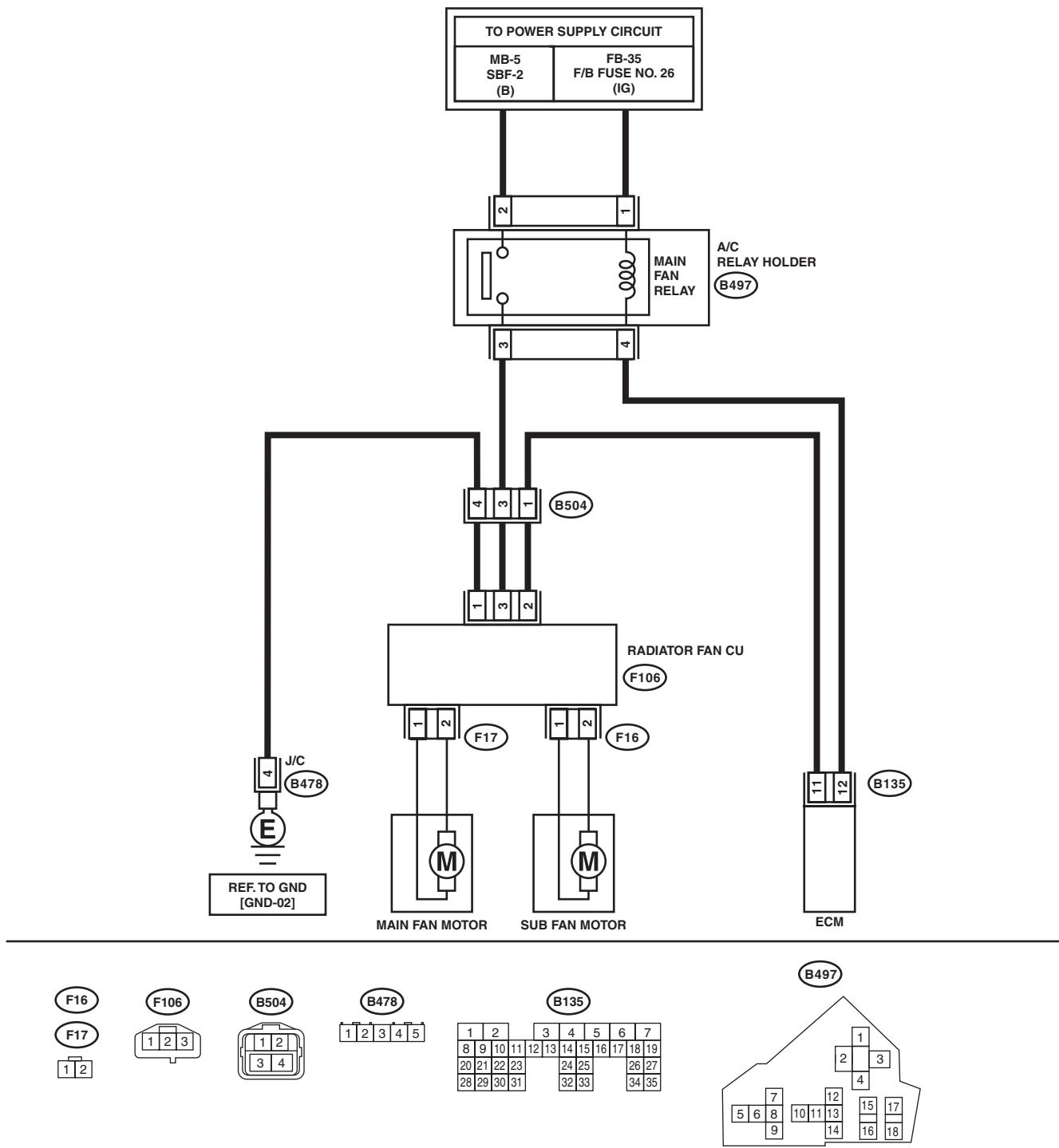


# Radiator Fan System

COOLING

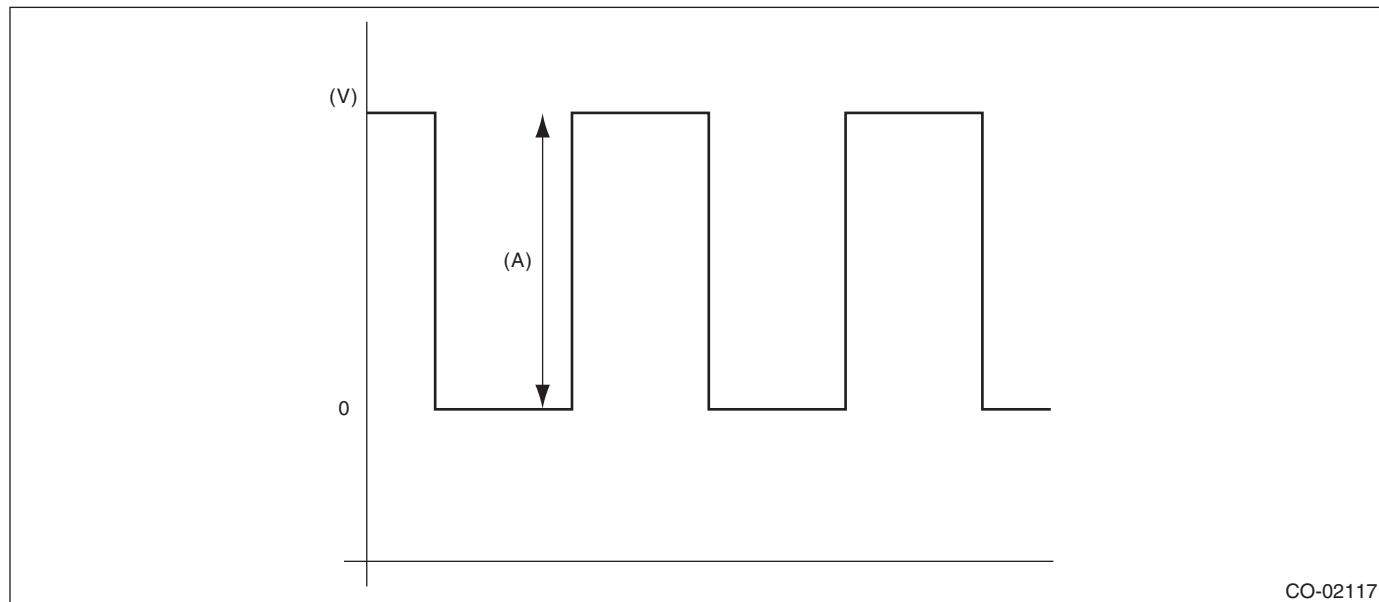
## 2. Radiator Fan System

### A: WIRING DIAGRAM



CO-02651

## B: RADIATOR FAN CONTROL OUTPUT WAVEFORM



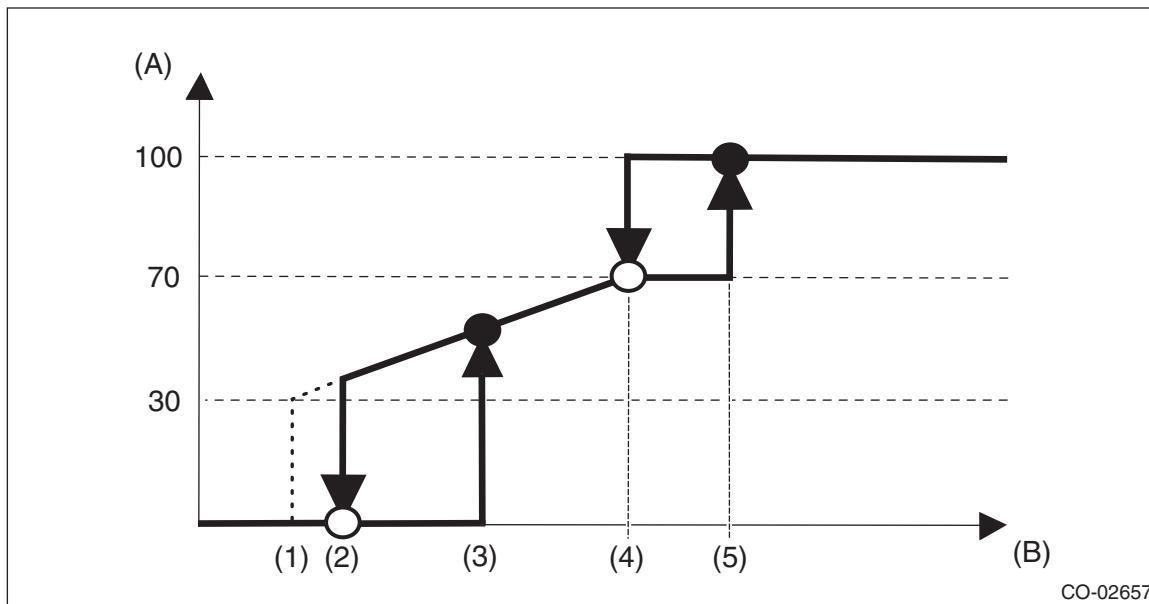
(A) 5 V

## C: INSPECTION

### Operating condition:

Radiator fan operates depending on the radiator fan speed related to engine coolant temperature or the radiator fan speed related to A/C compressor load, whichever is higher as a load condition.

- Radiator fan speed related to engine coolant temperature



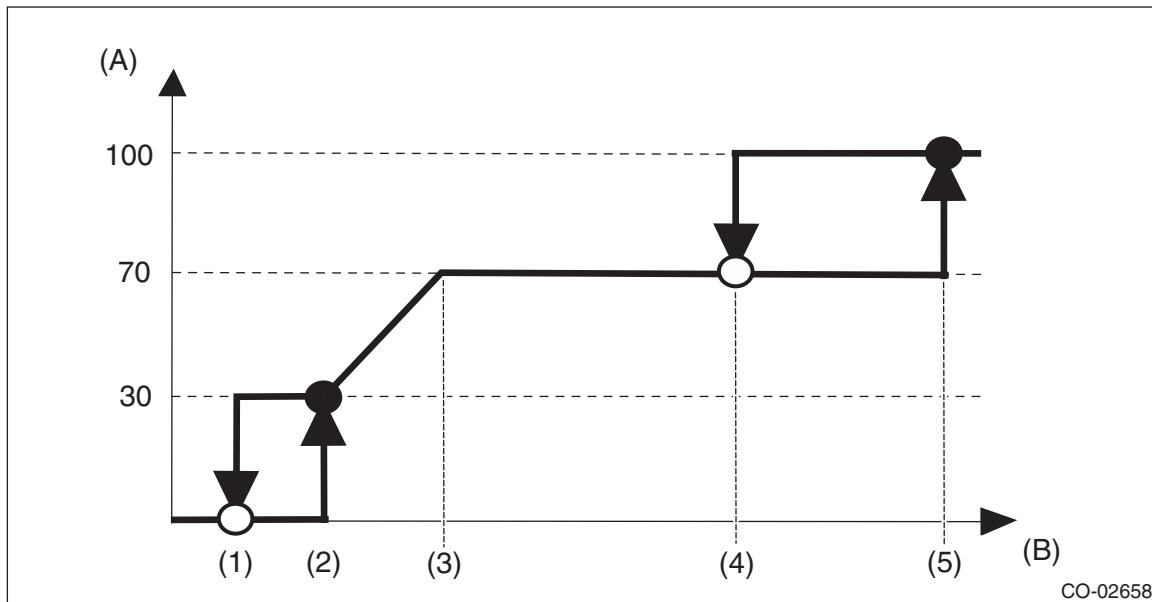
(A) Radiator fan speed (%)  
(B) Engine coolant temperature

(1) 95°C (203°F)  
(2) 96°C (205°F)  
(3) 98°C (208°F)  
(4) 100°C (212°F)  
(5) 101°C (214°F)

# Radiator Fan System

## COOLING

- Radiator fan speed related to A/C compressor load



(A) Radiator fan speed (%)  
(B) A/C compressor refrigerant pressure

(1) 0.8 MPa (8.16 kgf/cm<sup>2</sup>, 116 psi)  
(2) 1.0 MPa (10.20 kgf/cm<sup>2</sup>, 145 psi)  
(3) 1.5 MPa (15.30 kgf/cm<sup>2</sup>, 218 psi)  
(4) 4.0 MPa (40.79 kgf/cm<sup>2</sup>, 580 psi)  
(5) 5.0 MPa (50.98 kgf/cm<sup>2</sup>, 725 psi)

## DIAGNOSIS:

Radiator main and sub fans do not rotate under the above conditions.

Step	Check	Yes	No
1 <b>CHECK MAIN FAN RELAY.</b> 1) Turn the ignition switch to OFF. 2) Remove the main fan relay from the relay holder. 3) Measure the resistance between main fan relay switch terminals.	Is the resistance 1 MΩ or more?	Go to step 2.	Replace the main fan relay.
2 <b>CHECK MAIN FAN RELAY.</b> 1) Connect the battery to the terminal on main fan relay coil side. 2) Measure the resistance between main fan relay switch terminals.	Is the resistance less than 1 Ω?	Go to step 3.	Replace the main fan relay.
3 <b>CHECK POWER SUPPLY FOR ECM.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Turn the ignition switch to ON. 4) Measure the voltage between ECM terminal and chassis ground. <i>Connector &amp; terminal (B135) No. 12 (+) — Chassis ground (-):</i>	Is the voltage 10 V or more?	Go to step 4.	Repair the power supply line.

# Radiator Fan System

COOLING

Step	Check	Yes	No
4 <b>CHECK POWER SUPPLY FOR RADIATOR FAN CONTROL UNIT.</b> 1) Turn the ignition switch to OFF. 2) Connect the connector to ECM. 3) Disconnect the connector from radiator fan control unit. 4) Turn the ignition switch to ON. 5) Measure the voltage between radiator fan control unit terminal and chassis ground.  <i>Connector &amp; terminal (F106) No. 3 (+) — Chassis ground (-):</i>	Is the voltage 10 V or more?	Go to step 5.	Repair the power supply line.
5 <b>CHECK HARNESS BETWEEN ECM AND RADIATOR FAN CONTROL UNIT.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Measure the resistance between radiator fan control unit and ECM connector.  <i>Connector &amp; terminal (B135) No. 11 — (F106) No. 2:</i>	Is the resistance less than 1 $\Omega$ ?	Go to step 6.	Repair the open circuit of harness between ECM and radiator fan control unit.
6 <b>CHECK RADIATOR FAN CONTROL UNIT AND GROUND CIRCUIT.</b> 1) Connect the connector to ECM and radiator fan control unit. 2) Measure the resistance between radiator fan control unit connector and chassis ground.  <i>Connector &amp; terminal (F106) No. 1 — Chassis ground:</i>	Is the resistance less than 5 $\Omega$ ?	Go to step 7.	Repair the open circuit of harness between radiator fan control unit connector and chassis ground.
7 <b>CHECK MAIN FAN MOTOR.</b> 1) Disconnect the connector from radiator fan control unit. 2) Connect the battery positive (+) terminal to terminal No. 1 of the main fan motor, and the ground (-) terminal to terminal No. 2.	Does the main fan motor rotate?	Go to step 8.	Replace the main fan motor.
8 <b>CHECK SUB FAN MOTOR.</b> 1) Disconnect the connector from radiator fan control unit. 2) Connect the battery positive (+) terminal to terminal No. 1 of the sub fan motor, and the ground (-) terminal to terminal No. 2.	Does the sub fan motor rotate?	Go to step 9.	Replace the sub fan motor.
9 <b>CHECK OUTPUT SIGNAL FROM ECM.</b> 1) Turn the ignition switch to OFF. 2) Connect the delivery mode fuse. 3) Turn the ignition switch to ON. 4) Check the output waveform using oscilloscope. <Ref. to CO(H6DO)-9, RADIATOR FAN CONTROL OUTPUT WAVEFORM, Radiator Fan System.>  <i>Connector &amp; terminal (B135) No. 11 (+) — Chassis ground (-):</i>	Is waveform being output?	Replace the radiator fan control unit. <Ref. to CO(H6DO)-26, Radiator Fan Control Unit.>	Replace the ECM. <Ref. to FU(H6DO)-50, Engine Control Module (ECM).>