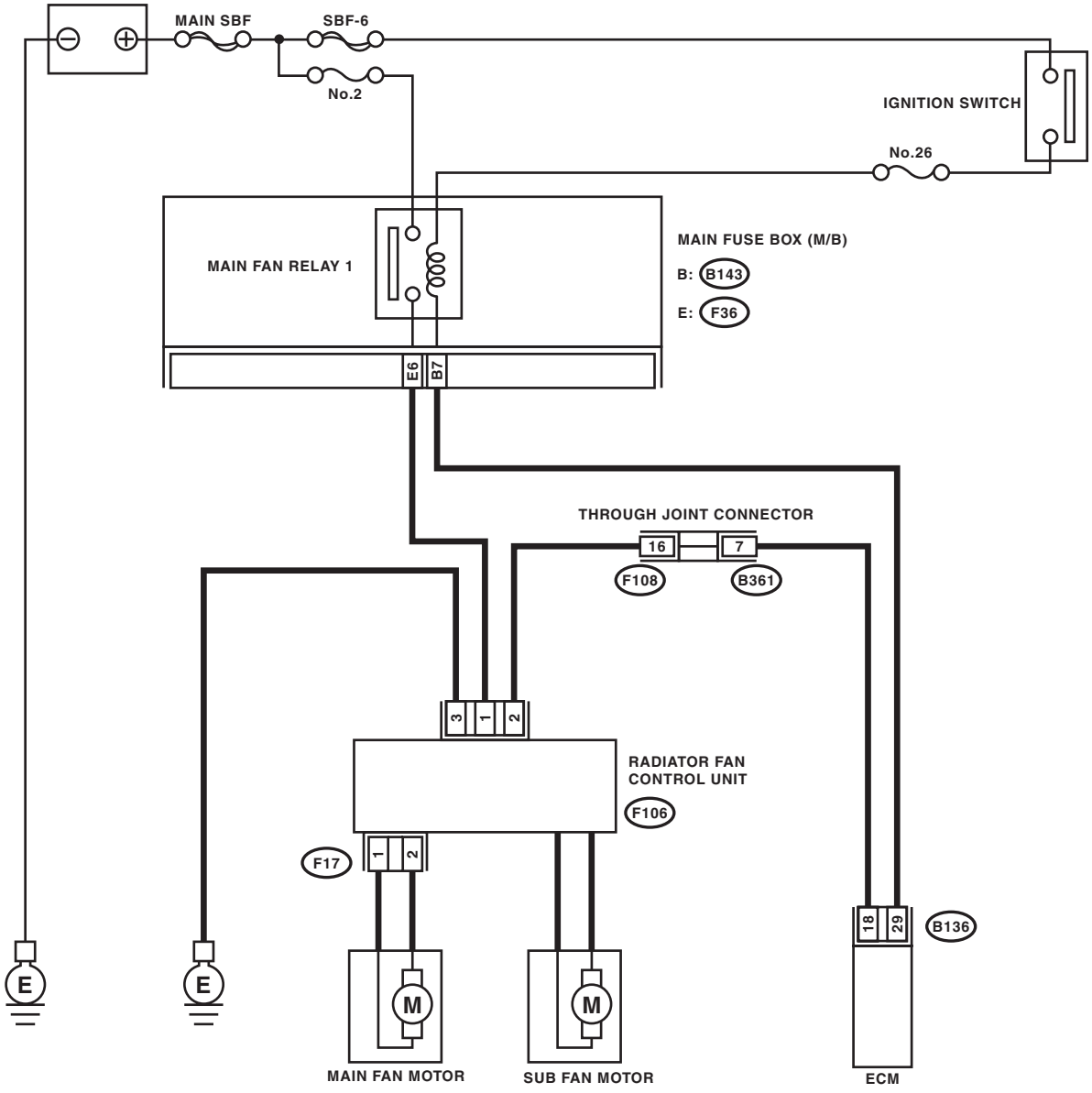
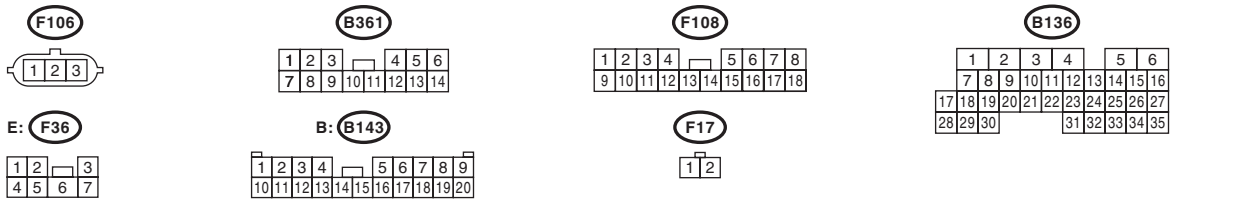
# 2. Radiator Fan System

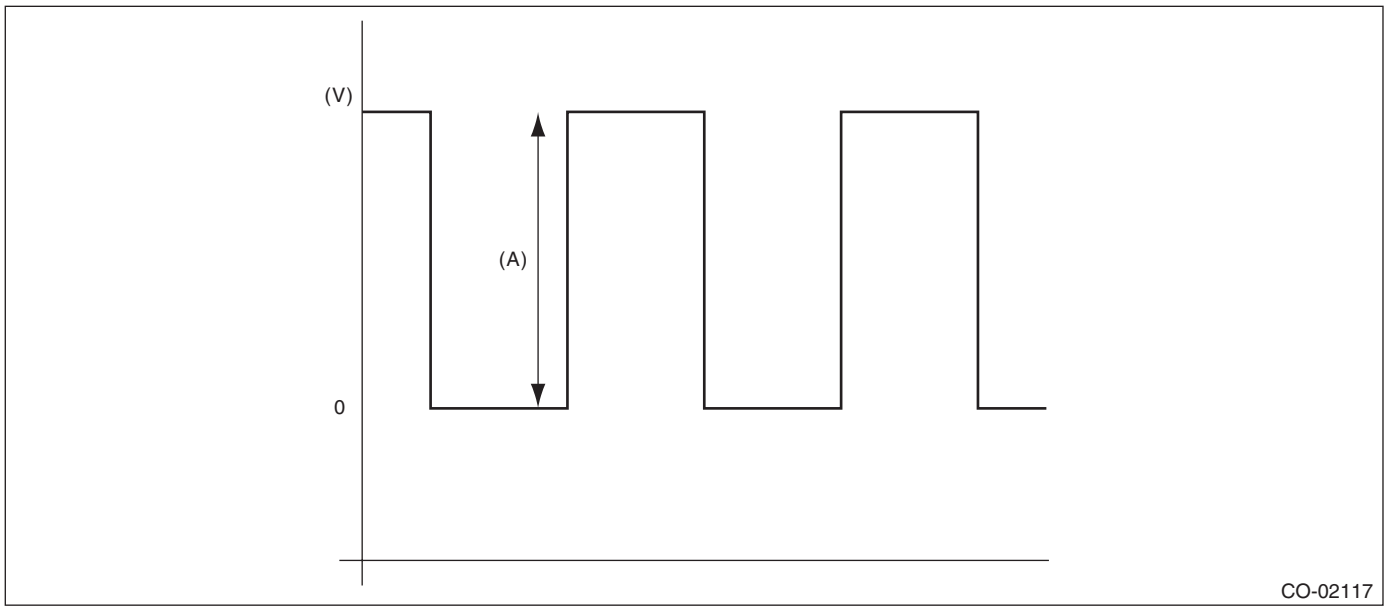
## A: WIRING DIAGRAM




CO-02254

## B: RADIATOR FAN CONTROL OUTPUT WAVEFORM




(A) 5 V

## C: INSPECTION

**DETECTING CONDITION:**

- Engine coolant temperature is 93°C (199°F) or more.
- A/C switch is turned OFF.
- Vehicle speed is 19 km/h (12 MPH) or less.

**TROUBLE SYMPTOMS:**

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

| | Step | Check | Yes | No |
|---|---|---|---|---|
| 1 | **CHECK MAIN FAN RELAY 1.**<br>1) Turn the ignition switch to OFF.<br>2) Remove main fan relay 1 from the main fuse box.<br>3) Measure the resistance of terminal in main fan relay 1 switch. | Is the resistance 1 MΩ or more? | Go to step **2**. | Replace the main fan relay 1. |
| 2 | **CHECK MAIN FAN RELAY 1.**<br>1) Connect the battery to the main fan relay 1 coil side terminal.<br>2) Measure the resistance between terminals of main fan relay 1 switch. | Is the resistance less than 1 Ω? | Go to step **3**. | Replace the main fan relay 1. |
| 3 | **CHECK POWER SUPPLY FOR ECM.**<br>1) Disconnect the connectors from the ECM.<br>2) Turn the ignition switch to ON.<br>3) Measure the voltage between ECM connector and chassis ground.<br>***Connector & terminal***<br>***(B136) No. 29 (+) — Chassis ground (–):*** | Is the voltage 10 V or more? | Go to step **4**. | Repair the power supply line. |

| | Step | Check | Yes | No |
|---|---|---|---|---|
| 4 | **CHECK POWER SUPPLY FOR RADIATOR FAN CONTROL UNIT.**<br>1) Turn the ignition switch to OFF.<br>2) Connect the connector to ECM.<br>3) Disconnect the connector from radiator fan control unit.<br>4) Turn the ignition switch to ON.<br>5) Measure the voltage between radiator fan control unit connector and chassis ground.<br>***Connector & terminal***<br>***(F106) No. 1 (+) — Chassis ground (–):*** | Is the voltage 10 V or more? | Go to step **5**. | Repair the power supply line. |
| 5 | **CHECK HARNESS BETWEEN ECM AND RADIATOR FAN CONTROL UNIT.**<br>1) Turn the ignition switch to OFF.<br>2) Disconnect the connectors from the ECM.<br>3) Measure the resistance of harness between radiator fan control unit and ECM connector.<br>***Connector & terminal***<br>***(B136) No. 18 — (F106) No. 2:*** | Is the resistance less than 1 Ω? | Go to step **6**. | Repair the open circuit of harness between ECM and radiator fan control unit. |
| 6 | **CHECK RADIATOR FAN CONTROL UNIT AND GROUND CIRCUIT.**<br>1) Connect the connector to ECM and radiator fan control unit.<br>2) Measure the resistance between radiator fan control unit connector and chassis ground.<br>***Connector & terminal***<br>***(F106) No. 3 — Chassis ground:*** | Is the resistance less than 5 Ω? | Go to step **7**. | Repair the open circuit of harness between radiator fan control unit connector and chassis ground. |
| 7 | **CHECK SUB FAN MOTOR.**<br>1) Disconnect the connector from radiator fan control unit.<br>2) Connect the battery positive (+) terminal to terminal No. 1 of the radiator fan control unit, and the ground (–) terminal to terminal No. 3. | Does the fan motor rotate? | Go to step **8**. | Replace the fan motor which does not rotate. |
| 8 | **CHECK OUTPUT SIGNAL FROM ECM.**<br>1) Connect the test mode connector.<br>2) Turn the ignition switch to ON.<br>3) Check the output waveform using oscilloscope. <Ref. to CO(H6DO)-8, RADIATOR FAN CONTROL OUTPUT WAVEFORM, Radiator Fan System.><br>***Connector & terminal***<br>***(B136) No. 18 (+) — Chassis ground (–):*** | Is waveform being output? | Replace the radiator fan control unit. <Ref. to CO(H6DO)-25, Radiator Fan Control Unit.> | Replace the ECM. <Ref. to FU(H6DO)-33, Engine Control Module (ECM).> |