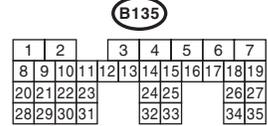
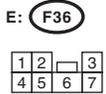
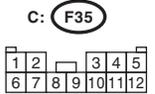
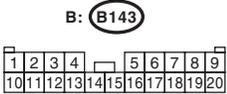
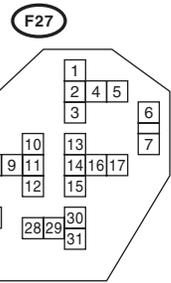
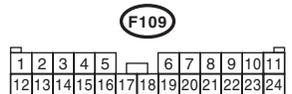
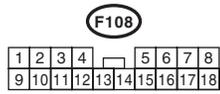
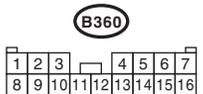
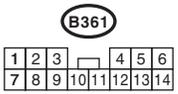
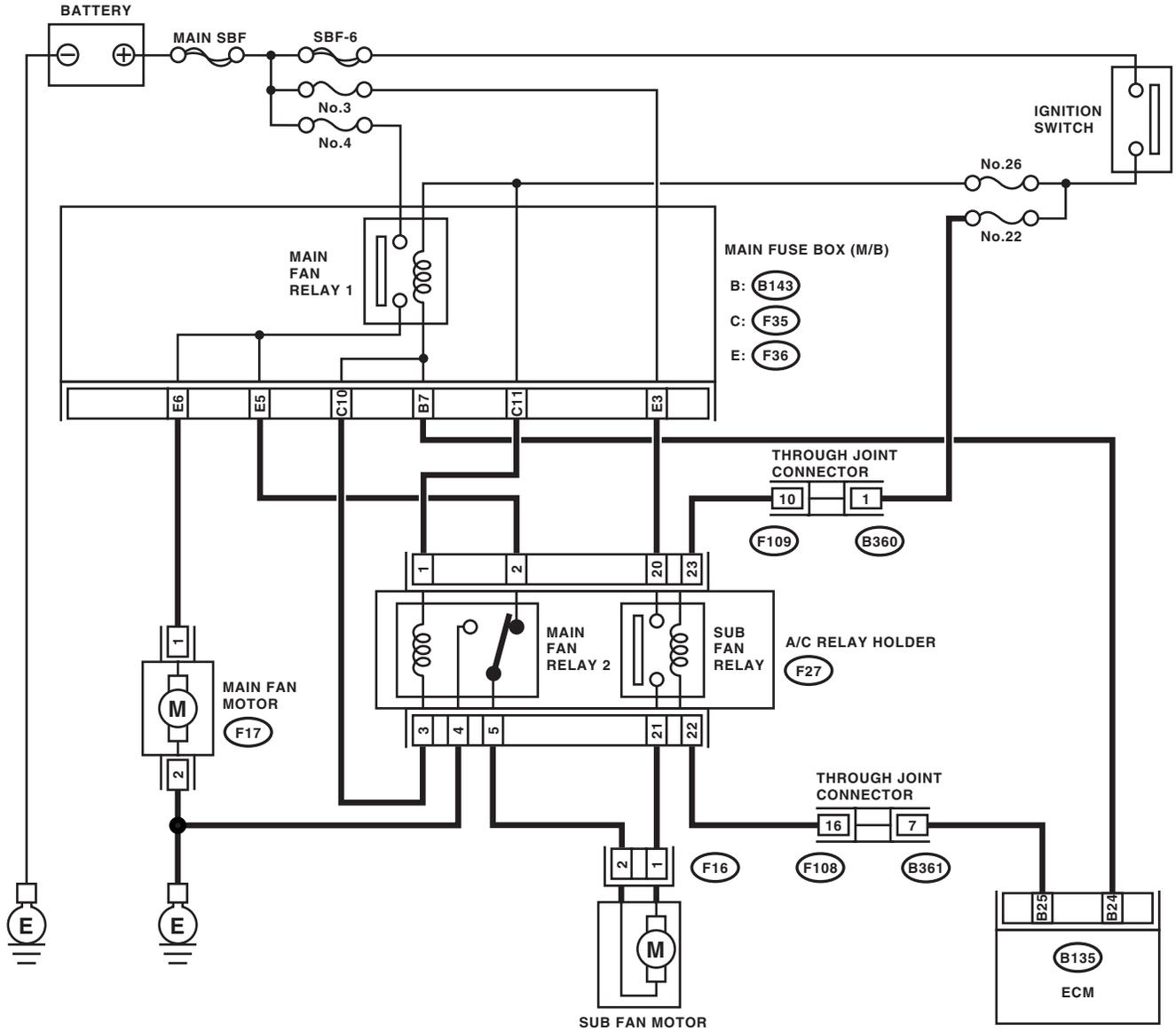


Radiator Fan System

COOLING

2. Radiator Fan System

A: WIRING DIAGRAM



CO-02114

B: INSPECTION

DETECTING CONDITION:

- Engine coolant temperature is more than 96°C (205°F).
- Vehicle speed is below 19 km/h (12 MPH).

TROUBLE SYMPTOMS:

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

Step	Check	Yes	No
1 CHECK OPERATION OF RADIATOR FAN. 1) Connect the test mode connector. 2) Turn the ignition switch to ON. 3) Perform the compulsory operation check for the radiator fan relay using Subaru Select Monitor. NOTE: • When performing the compulsory operation check for the radiator fan relay using Subaru Select Monitor, the radiator main fan and sub fan will repeat such a operation as low speed revolution → high speed revolution → OFF in this order. • Refer to Compulsory Valve Operation Check Mode for more operation procedure. <Ref. to EN(H4DOTC)(diag)-44, Compulsory Valve Operation Check Mode.>	Do the radiator main fan and sub fan rotate at low speed?	Go to step 2.	Go to step 3.
2 CHECK OPERATION OF RADIATOR FAN. 1) Connect the test mode connector. 2) Turn the ignition switch to ON. 3) Perform the compulsory operation check for the radiator fan relay using Subaru Select Monitor. NOTE: • When performing the compulsory operation check for the radiator fan relay using Subaru Select Monitor, the radiator main fan and sub fan will repeat such a operation as low speed revolution → high speed revolution → OFF in this order. • Refer to Compulsory Valve Operation Check Mode for more operation procedure. <Ref. to EN(H4DOTC)(diag)-44, Compulsory Valve Operation Check Mode.>	Do the radiator main fan and sub fan rotate at high speed?	Radiator fan system is normal.	Go to step 27.
3 CHECK POWER SUPPLY TO SUB FAN RELAY. 1) Turn the ignition switch to OFF. 2) Remove the sub fan relay from A/C relay holder. 3) Measure the voltage between sub fan relay terminal and chassis ground. <i>Connector & terminal</i> <i>(F27) No. 20 (+) — Chassis ground (-):</i>	Is the voltage more than 10 V?	Go to step 4.	Go to step 5.
4 CHECK POWER SUPPLY TO SUB FAN RELAY. 1) Turn the ignition switch to ON. 2) Measure the voltage between sub fan relay terminal and chassis ground. <i>Connector & terminal</i> <i>(F27) No. 23 (+) — Chassis ground (-):</i>	Is the voltage more than 10 V?	Go to step 7.	Go to step 6.

Radiator Fan System

COOLING

Step	Check	Yes	No
5 CHECK FUSE. 1) Turn the ignition switch to OFF. 2) Remove the fuse No. 3. 3) Check the condition of fuse.	Is the fuse blown out?	Replace the fuse.	Repair the power supply line.
6 CHECK FUSE. 1) Turn the ignition switch to OFF. 2) Remove the fuse No. 22. 3) Check the condition of fuse.	Is the fuse blown out?	Replace the fuse.	Repair the power supply line.
7 CHECK SUB FAN RELAY. 1) Turn the ignition switch to OFF. 2) Measure the resistance between sub fan relay terminals. <i>Terminals</i> <i>No. 20 — No. 21:</i>	Is the resistance more than 1 MΩ?	Go to step 8.	Replace the sub fan relay.
8 CHECK SUB FAN RELAY. 1) Connect the terminals No. 22 and No. 23 of sub fan relay to battery. 2) Measure the resistance between sub fan relay terminals. <i>Terminals</i> <i>No. 20 — No. 21:</i>	Is the resistance less than 1 Ω?	Go to step 9.	Replace the sub fan relay.
9 CHECK HARNESS BETWEEN SUB FAN RELAY TERMINAL AND SUB FAN MOTOR CONNECTOR. 1) Disconnect the connector from sub fan motor. 2) Measure the resistance of harness between sub fan relay terminal and sub fan motor connector. <i>Connector & terminal</i> <i>(F16) No. 1 — (F27) No. 21:</i>	Is the resistance less than 1 Ω?	Go to step 10.	Repair the open circuit of harness between sub fan relay terminal and sub fan motor connector.
10 CHECK HARNESS BETWEEN SUB FAN MOTOR CONNECTOR AND MAIN FAN RELAY 2 CONNECTOR. 1) Remove the main fan relay 2 from A/C relay holder. 2) Measure the resistance of harness between sub fan motor connector and main fan relay 2 connector. <i>Connector & terminal</i> <i>(F16) No. 2 — (F27) No. 5:</i>	Is the resistance less than 1 Ω?	Go to step 11.	Repair the open harness between sub fan motor connector and main fan relay 2 connector.
11 CHECK POOR CONTACT. Check the poor contact in sub fan motor connector.	Is there poor contact in sub fan motor connector?	Repair the poor contact in sub fan motor connector.	Go to step 12.
12 CHECK SUB FAN MOTOR. Connect the battery positive (+) terminal to terminal No. 1 of sub fan motor, and the ground (-) terminal to terminal No. 2.	Does the sub fan rotate?	Go to step 13.	Replace the sub fan motor.
13 CHECK MAIN FAN RELAY 2. Measure the resistance of main fan relay 2. <i>Terminals</i> <i>No. 2 — No. 5:</i>	Is the resistance less than 1 Ω?	Go to step 14.	Replace the main fan relay 2.

Radiator Fan System

COOLING

Step	Check	Yes	No
14 CHECK HARNESS BETWEEN MAIN FAN RELAY 2 TERMINAL AND MAIN FAN MOTOR CONNECTOR. 1) Disconnect the connector from main fan motor. 2) Measure the resistance of harness between main fan relay 2 terminal and main fan motor connector. <i>Connector & terminal (F17) No. 1 — (F27) No. 2:</i>	Is the resistance less than 1 Ω ?	Go to step 15.	Repair the open circuit of harness between main fan relay 2 terminal and main fan motor connector.
15 CHECK MAIN FAN MOTOR AND GROUND CIRCUIT. Measure the resistance between main fan motor connector and chassis ground. <i>Connector & terminal (F17) No. 2 — Chassis ground:</i>	Is the resistance less than 5 Ω ?	Go to step 16.	Repair the open circuit in harness between main fan motor connector and chassis ground.
16 CHECK POOR CONTACT. Check poor contact in main fan motor connector.	Is there poor contact in main fan motor connector?	Repair the poor contact in main fan motor connector.	Go to step 17.
17 CHECK MAIN FAN MOTOR. Connect the battery positive (+) terminal to terminal No. 1 of main fan motor, and the ground (-) terminal to terminal No. 2.	Does the main fan rotate?	Go to step 18.	Replace the main fan motor.
18 CHECK HARNESS BETWEEN SUB FAN RELAY AND ECM. 1) Disconnect the connector from ECM. 2) Measure the resistance between sub fan relay terminal and ECM connector. <i>Connector & terminal (B135) No. 25 — (F27) No. 22:</i>	Is the resistance less than 1 Ω ?	Go to step 19.	Repair the open circuit in harness between sub fan relay terminal and ECM.
19 CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there a poor contact in ECM connector?	Repair the poor contact in ECM connector.	Check the DTC. Repair the trouble cause. <Ref. to EN(H4DOTC)(diag)-34, Read Diagnostic Trouble Code (DTC).>
20 CHECK MAIN FAN RELAY 1. 1) Turn the ignition switch to OFF. 2) Remove the main fan relay 1 from main fuse box. 3) Measure the resistance of terminal in main fan relay 1 switch.	Is the resistance more than 1 $M\Omega$?	Go to step 21.	Replace the main fan relay 1.
21 CHECK MAIN FAN RELAY 1. 1) Connect the terminal of main fan relay 1 coil side terminal to battery. 2) Measure the resistance between terminals of main fan relay 1 switch.	Is the resistance less than 1 Ω ?	Go to step 22.	Replace the main fan relay 1.
22 CHECK HARNESS BETWEEN MAIN FAN RELAY 1 TERMINAL AND MAIN FAN MOTOR CONNECTOR. 1) Disconnect the connector from main fan motor. 2) Measure the resistance of harness between main fan relay 1 terminal and main fan motor connector. <i>Connector & terminal (F17) No. 1 — (F36) No. 6:</i>	Is the resistance less than 1 Ω ?	Go to step 23.	Repair the open circuit of harness between main fan relay 1 terminal and main fan motor connector.

Radiator Fan System

COOLING

Step	Check	Yes	No
23 CHECK HARNESS BETWEEN MAIN FAN RELAY 1 AND ECM. 1) Disconnect the connector from ECM. 2) Measure the resistance between main fan relay 1 terminal and ECM connector. <i>Connector & terminal</i> <i>(B135) No. 24 — (B143) No. 7:</i>	Is the resistance less than 1 Ω ?	Go to step 24.	Repair the open circuit of harness between main fan relay 1 terminal and ECM.
24 CHECK HARNESS BETWEEN MAIN FAN RELAY 2 AND ECM. Measure the resistance between main fan relay 2 terminal and ECM connector. <i>Connector & terminal</i> <i>(B135) No. 24 — (F27) No. 3:</i>	Is the resistance less than 1 Ω ?	Go to step 25.	Repair the open circuit of harness between main fan relay 2 terminal and ECM.
25 CHECK FUSE. 1) Turn the ignition switch to OFF. 2) Remove the fuse No. 4 and No. 26. 3) Check the condition of fuse.	Is the fuse blown out?	Replace the fuse.	Go to step 26.
26 CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there a poor contact in ECM connector?	Repair the poor contact in ECM connector.	Repair the power supply circuit for main fuse box.
27 CHECK OPERATION OF RADIATOR FAN. Check the sub fan rotates when both fans do not rotate at high speed under the step 2.	Does the sub fan rotate?	Go to step 20.	Go to step 28.
28 CHECK GROUND CIRCUIT OF MAIN FAN RELAY 2. 1) Remove the main fan relay 2 from A/C relay holder. 2) Measure the resistance between main fan relay 2 terminal and chassis ground. <i>Connector & terminal</i> <i>(F27) No. 4 — Chassis ground:</i>	Is the resistance less than 1 Ω ?	Go to step 29.	Repair the open circuit in harness between main fan relay 2 and chassis ground.
29 CHECK POWER SUPPLY TO MAIN FAN RELAY 2. 1) Turn the ignition switch to ON. 2) Measure the voltage between main fan relay 2 terminal and chassis ground. <i>Connector & terminal</i> <i>(F27) No. 1 (+) — Chassis ground (-):</i>	Is the voltage more than 10 V?	Go to step 30.	Repair the power supply line.
30 CHECK MAIN FAN RELAY 2. 1) Turn the ignition switch to OFF. 2) Remove the main fan relay 2. 3) Measure the resistance of main fan relay 2. <i>Terminals</i> <i>(F27) No. 4 — (F27) No. 5:</i>	Is the resistance more than 1 M Ω ?	Go to step 31.	Replace the main fan relay 2.
31 CHECK MAIN FAN RELAY 2. 1) Connect the battery to terminals No. 1 and No. 3 of main fan relay 2. 2) Measure the resistance of main fan relay 2. <i>Terminals</i> <i>(F27) No. 4 — (F27) No. 5:</i>	Is the resistance less than 1 Ω ?	Go to step 23.	Replace the main fan relay 2.