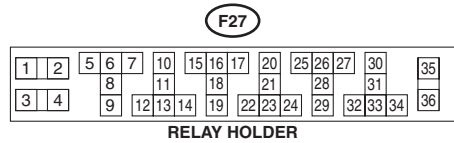
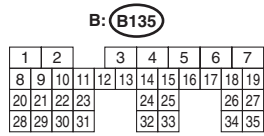
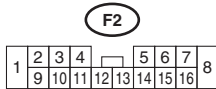
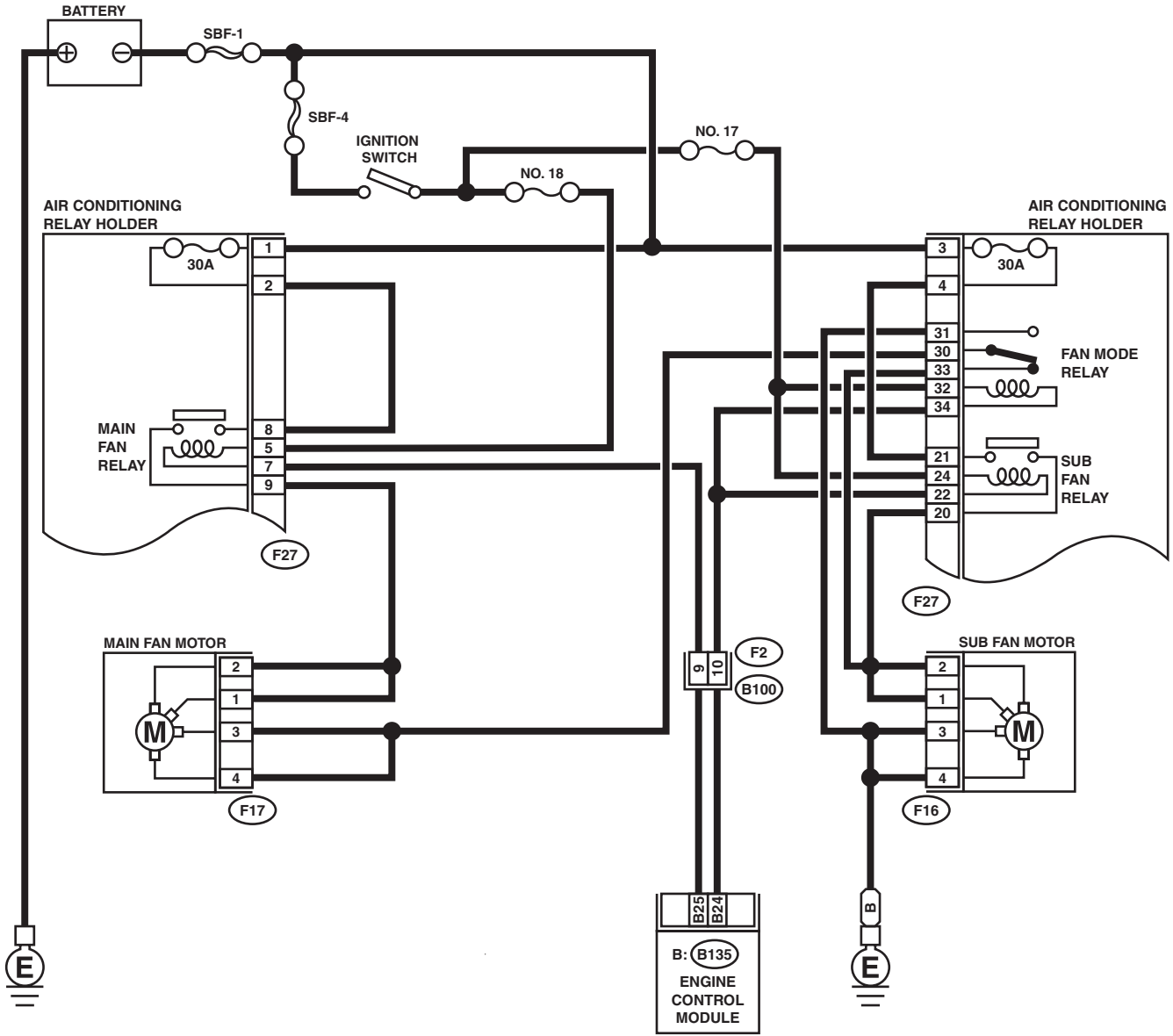


2. Radiator Fan System

A: SCHEMATIC



RADIATOR FAN SYSTEM

COOLING

B: INSPECTION

DETECTING CONDITION:

- Engine coolant temperature is above 95°C (203°F).
- Vehicle speed is below 19 km/h (12 MPH).

TROUBLE SYMPTOM:

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

Step	Check	Yes	No
<p>1 CHECK OPERATION OF RADIATOR FAN.</p> <p>1) Connect the test mode connector. 2) Turn the ignition switch to ON. 3) Using Subaru Select Monitor, check the compulsory operation of radiator fan.</p> <p>NOTE:</p> <ul style="list-style-type: none"> •With Subaru Select Monitor When checking the compulsory operation of radiator fan, the radiator main and sub fan repeat the rotation in order of following: low speed rotation → high speed rotation → off. •Subaru Select Monitor Refer to Compulsory Valve Operation Check Mode for detail procedures. <Ref. to EN(H4DOTC)-53, Compulsory Valve Operation Check Mode.> 	Do the radiator main and sub fan rotate at low speed?	Go to step 2.	Go to step 3.
<p>2 CHECK OPERATION OF RADIATOR FAN.</p> <p>1) Connect the test mode connector. 2) Turn the ignition switch to ON. 3) Using Subaru Select Monitor, check the compulsory operation of radiator fan.</p> <p>NOTE:</p> <ul style="list-style-type: none"> •With Subaru Select Monitor When checking the compulsory operation of radiator fan, the radiator main and sub fan repeat the rotation in order of following: low speed rotation → high speed rotation → off. •Subaru Select Monitor Refer to Compulsory Valve Operation Check Mode for detail procedures. <Ref. to EN(H4DOTC)-53, Compulsory Valve Operation Check Mode.> 	Do the radiator main and sub fan rotate at high speed?	Radiator main fan system is okay.	Go to step 32.
<p>3 CHECK POWER SUPPLY TO MAIN FAN RELAY.</p> <p>1) Turn the ignition switch to OFF. 2) Remove the main fan relay from A/C relay holder. 3) Measure the voltage between main fan relay terminal and chassis ground.</p> <p>Connector & terminal (F27) No. 8 (+) — Chassis ground (-):</p>	Is the measured value more than 10 V?	Go to step 4.	Go to step 5.
<p>4 CHECK POWER SUPPLY TO MAIN FAN RELAY.</p> <p>1) Turn the ignition switch to ON. 2) Measure the voltage between main fan relay terminal and chassis ground.</p> <p>Connector & terminal (F27) No. 5 (+) — Chassis ground (-):</p>	Is the measured value more than 10 V?	Go to step 8.	Go to step 7.
<p>5 CHECK FUSE.</p> <p>1) Remove the 30 A fuse from A/C relay holder. 2) Check the condition of fuse.</p>	Is the fuse blown out?	Replace the fuse.	Go to step 6.

RADIATOR FAN SYSTEM

COOLING

Step	Check	Yes	No
6 CHECK HARNESS OF 30 A FUSE TERMINAL AND MAIN FAN RELAY TERMINAL. 1) Turn the ignition switch to OFF. 2) Measure the resistance between 20 A fuse terminal and main fan relay terminal. <i>Terminal</i> <i>No. 2 — No. 8:</i>	Is the measured value less than 1 Ω?	Repair the power supply line.	Repair the open harness.
7 CHECK FUSE. 1) Turn the ignition switch to OFF 2) Remove the fuse No. 18. 3) Check the condition of fuse.	Is the fuse blown out?	Replace the fuse.	Repair the power supply line.
8 CHECK MAIN FAN RELAY. 1) Turn the ignition switch to OFF. 2) Measure the resistance between main fan relay terminals. <i>Terminal</i> <i>No. 8 — No. 9:</i>	Is the measured value more than 1 MΩ?	Go to step 9.	Replace the main fan relay.
9 CHECK MAIN FAN RELAY. 1) Connect the battery to main fan relay terminals No. 5 and No. 7. 2) Measure the resistance between main fan relay terminals. <i>Terminal</i> <i>No. 8 — No. 9:</i>	Is the measured value less than 1 Ω?	Go to step 10.	Replace the main fan relay.
10 CHECK HARNESS BETWEEN MAIN FAN RELAY TERMINAL AND MAIN FAN MOTOR CONNECTOR. 1) Disconnect the connector from main fan motor. 2) Measure the resistance between main fan relay terminal and main fan motor connector. <i>Connector & terminal</i> <i>(F17) No. 1 — (F27) No. 9:</i> <i>(F17) No. 2 — (F27) No. 9:</i>	Is the measured value less than 1 Ω?	Go to step 11.	Repair the open harness between main fan relay terminal and main fan motor connector.
11 CHECK HARNESS BETWEEN MAIN FAN MOTOR CONNECTOR AND FAN MODE RELAY CONNECTOR. 1) Remove the fan mode relay from A/C relay holder. 2) Measure the resistance between main fan motor connector and fan mode relay connector. <i>Connector & terminal</i> <i>(F17) No. 3 — (F27) No. 30:</i> <i>(F17) No. 4 — (F27) No. 30:</i>	Is the measured value less than 1 Ω?	Go to step 12.	Repair the open harness between main fan motor connector and fan mode relay connector.
12 CHECK POOR CONTACT. Check poor contact in main fan motor connector.	Is there poor contact in main fan motor connector?	Repair poor contact in main fan motor connector.	Go to step 13.
13 CHECK MAIN FAN MOTOR. Connect the battery positive (+) terminal to terminal No. 1 and No. 2, and ground (-) terminal to terminal No. 3 and No. 4 of main fan motor.	Does the main fan rotate?	Go to step 14.	Replace the main fan motor.
14 CHECK FAN MODE RELAY. Measure the resistance of fan mode relay. <i>Terminal</i> <i>No. 30 — No. 33</i>	Is the measured value less than 1 Ω?	Go to step 15.	Replace the fan mode relay.

RADIATOR FAN SYSTEM

COOLING

Step	Check	Yes	No
15 CHECK RESISTANCE BETWEEN FAN MODE RELAY TERMINAL AND SUB FAN MOTOR CONNECTOR. 1) Disconnect the connector from sub fan motor. 2) Measure the resistance between fan mode relay terminal and sub fan motor connector. <i>Connector & terminal</i> <i>(F16) No. 1 — (F27) No. 33:</i> <i>(F16) No. 2 — (F27) No. 33:</i>	Is the measured value less than 1 Ω ?	Go to step 16.	Repair the open harness between fan mode relay terminal and sub fan motor connector.
16 CHECK SUB FAN MOTOR AND GROUND CIRCUIT. Measure the resistance between sub fan motor connector and chassis ground. <i>Connector & terminal</i> <i>(F16) No. 3 — Chassis ground:</i> <i>(F16) No. 4 — Chassis ground:</i>	Is the measured value less than 5 Ω ?	Go to step 17.	Repair the open harness between sub fan motor connector and chassis ground.
17 CHECK POOR CONTACT. Check poor contact in sub fan motor connector.	Is there poor contact in sub fan motor connector?	Repair poor contact in sub fan motor connector.	Go to step 18.
18 CHECK SUB FAN MOTOR. Connect the battery positive (+) terminal to terminal No. 1 and No. 2, and ground (-) terminal to terminal No. 3 and No. 4 of sub fan motor.	Does the sub fan rotate?	Go to step 19.	Replace the sub fan motor.
19 CHECK HARNESS BETWEEN MAIN FAN RELAY AND ECM. 1) Disconnect the connector from ECM. 2) Measure the resistance between main fan relay terminal and ECM connector. <i>Connector & terminal</i> <i>(B135) No. 25 — (F25) No. 7:</i>	Is the measured value less than 1 Ω ?	Go to step 20.	Repair the open harness between main fan relay terminal and ECM.
20 CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor contact in ECM connector.	Contact with SOA (distributor) service.
21 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 fan relay 2 terminal and chassis ground. <i>Connector & terminal</i> <i>(F27) No. 21 (+) — Chassis ground (-):</i>	Is the measured value more than 10 V?	Go to step 22.	Go to step 23.
22 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. 24 (+) — Chassis ground (-):</i>	Is the measured value more than 10 V?	Go to step 26.	Go to step 25.
23 CHECK FUSE. 1) Remove the 30 A fuse from A/C relay holder. 2) Check the condition of fuse.	Is the fuse blown out?	Replace the fuse.	Go to step 24.

RADIATOR FAN SYSTEM

COOLING

Step	Check	Yes	No
24 CHECK HARNESS BETWEEN 30 A FUSE TERMINAL AND SUB FAN RELAY TERMINAL. 1) Turn the ignition switch to OFF. 2) Measure the resistance between 30 A fuse terminal and sub fan relay terminal. <i>Terminal</i> <i>No. 4 — No. 21:</i>	Is the measured value less than 1 Ω?	Repair the power supply line.	Repair the open harness.
25 CHECK FUSE. 1) Turn the ignition switch to OFF. 2) Remove the fuse No. 17. 3) Check the condition of fuse.	Is the fuse blown out?	Replace the fuse.	Repair the power supply line.
26 CHECK SUB FAN RELAY. 1) Turn the ignition switch to OFF. 2) Remove the sub fan relay from A/C relay holder. 3) Measure the resistance of sub fan relay. <i>Terminal</i> <i>No. 20 — No. 21:</i>	Is the measured value more than 1 MΩ?	Go to step 27.	Replace the sub fan relay.
27 CHECK SUB FAN RELAY. 1) Connect the battery to terminals No. 22 and No. 24 of sub fan relay. 2) Measure the resistance of sub fan relay. <i>Terminal</i> <i>No. 20 — No. 21:</i>	Is the measured value less than 1 Ω?	Go to step 28.	Replace the sub fan relay.
28 CHECK HARNESS BETWEEN SUB FAN RELAY TERMINAL AND SUB FAN MOTOR CONNECTOR. 1) Disconnect the connector from sub fan motor. 2) Measure the resistance between sub fan relay terminal and sub fan motor connector. <i>Connector & terminal</i> <i>(F16) No. 1 — (F27) No. 20:</i> <i>(F16) No. 2 — (F27) No. 20:</i>	Is the measured value less than 1 Ω?	Go to step 30.	Repair the open harness between sub fan relay terminal and sub fan motor connector.
29 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</i> <i>(B135) No. 24 — (F27) No. 22:</i>	Is the measured value less than 1 Ω?	Go to step 30.	Repair the open harness between sub fan relay terminal and ECM.
30 CHECK HARNESS BETWEEN FAN MODE RELAY AND ECM. Measure the resistance between fan mode relay terminal and ECM connector. <i>Connector & terminal</i> <i>(B135) No. 24 — (F27) No. 34:</i>	Is the measured value less than 1 Ω?	Go to step 31.	Repair the open harness between fan mode relay terminal and ECM.
31 CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact in ECM connector.	Contact with your SOA (distributor) service.
32 CHECK OPERATION OF RADIATOR FAN.	Does the radiator main fan rotate when the radiator main and sub fan do not rotate at high speed at step 2?	Go to step 21.	Go to step 33.

RADIATOR FAN SYSTEM

COOLING

Step	Check	Yes	No
33 CHECK GROUND CIRCUIT OF FAN MODE RELAY. 1) Remove the fan mode relay from A/C relay holder. 2) Measure the resistance between fan mode relay terminal and chassis ground. Connector & terminal (F27) No. 31 — Chassis ground:	Is the measured value less than 1 Ω ?	Go to step 34 .	Repair the open harness between fan mode relay and chassis ground.
34 CHECK POWER SUPPLY TO FAN MODE RELAY. 1) Turn the ignition switch to ON. 2) Measure the voltage between fan mode relay terminal and chassis ground. Connector & terminal (F27) No. 32 (+) — Chassis ground (-):	Is the measured value more than 10 V?	Go to step 35 .	Repair the power supply line.
35 CHECK FAN MODE RELAY. 1) Turn the ignition switch to OFF. 2) Remove the fan mode relay. 3) Measure the resistance of fan mode relay. Terminal (F27) No. 30 — (F27) No. 31:	Is the measured value more than 1 M Ω ?	Go to step 36 .	Replace the fan mode relay.
36 CHECK FAN MODE RELAY. 1) Connect the battery to terminals No. 32 and No. 34 of fan mode relay. 2) Measure the resistance of fan mode relay. Terminal (F27) No. 30 — (F27) No. 31:	Is the measured value less than 1 Ω ?	Go to step 29 .	Replace the fan mode relay.