

2. Radiator Main Fan

A: OPERATION

DETECTING CONDITION:

Condition:

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

TROUBLE SYMPTOM:

- Radiator main fan does not rotate under the above conditions.

2A1 : CHECK POWER SUPPLY TO MAIN FAN MOTOR.

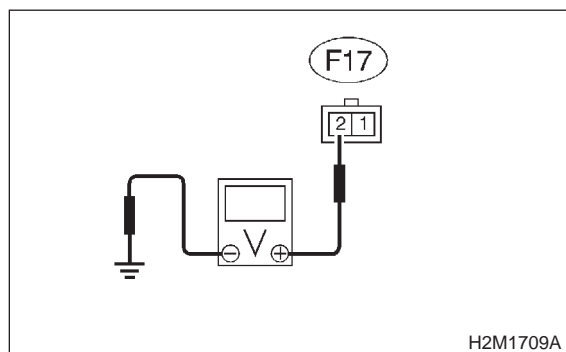
CAUTION:

Be careful not to overheat engine during repair.

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from main fan motor.
- 3) Start the engine, and warm it up until engine coolant temperature increases over 95°C (203°F).
- 4) Stop the engine and turn ignition switch to ON.
- 5) Measure voltage between main fan motor connector and chassis ground.

Connector & terminal

(F17) No. 2 (+) — Chassis ground (-):



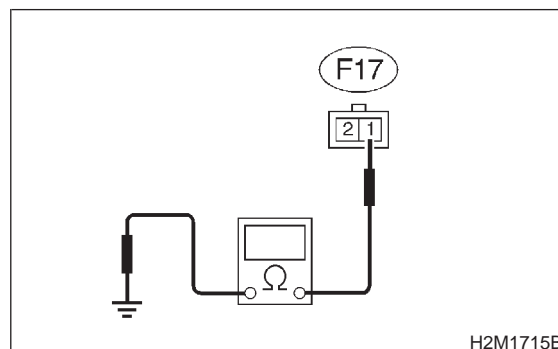
- CHECK** : Is the voltage more than 10 V?
- YES** : Go to step 2A2.
- NO** : Go to step 2A5.

2A2 : CHECK GROUND CIRCUIT OF MAIN FAN MOTOR.

- 1) Turn ignition switch to OFF.
- 2) Measure resistance between main fan motor connector and chassis ground.

Connector & terminal

(F17) No. 1 — Chassis ground:



- CHECK** : Is the resistance less than 5 Ω?
- YES** : Go to step 2A3.
- NO** : Repair open circuit in harness between main fan motor connector and chassis ground.

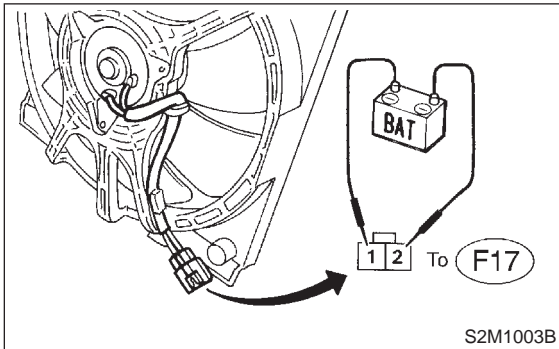
2A3 : CHECK POOR CONTACT.

Check poor contact in main fan motor connector.
<Ref. to FOREWORD [W3C1].>

- CHECK** : Is there poor contact in main fan motor connector?
- YES** : Repair poor contact in main fan motor connector.
- NO** : Go to step 2A4.

2A4 : CHECK MAIN FAN MOTOR.

Connect battery positive (+) terminal to terminal No. 2, and negative (-) terminal to terminal No. 1 of main fan motor connector.

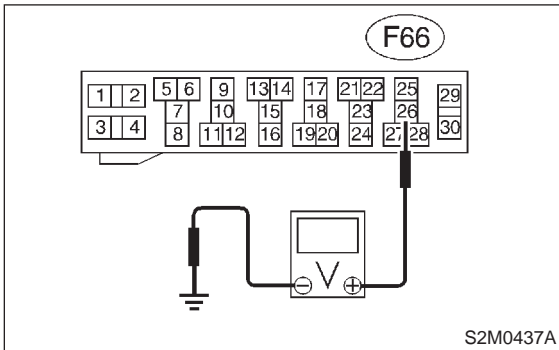


- CHECK** : *Does the main fan rotate?*
- YES** : Repair poor contact in main fan motor connector.
- NO** : Replace main fan motor with a new one.

2A5 : CHECK POWER SUPPLY TO MAIN FAN RELAY.

- 1) Turn ignition switch to OFF.
- 2) Remove main fan relay from A/C relay holder.
- 3) Measure voltage between main fan relay terminal and chassis ground.

Connector & terminal
(F66) No. 26 (+) — Chassis ground (-):

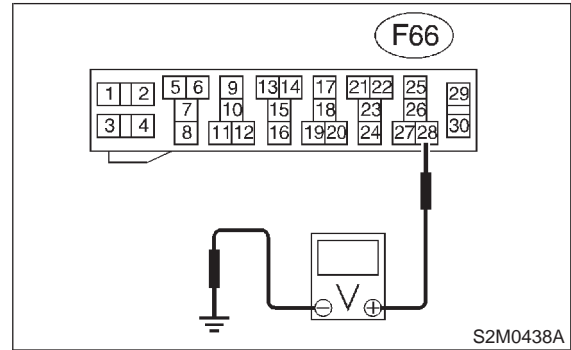


- CHECK** : *Is the voltage more than 10 V?*
- YES** : Go to step 2A6.
- NO** : Go to step 2A7.

2A6 : CHECK POWER SUPPLY TO MAIN FAN RELAY.

- 1) Turn ignition switch to ON.
- 2) Measure voltage between main fan relay terminal and chassis ground.

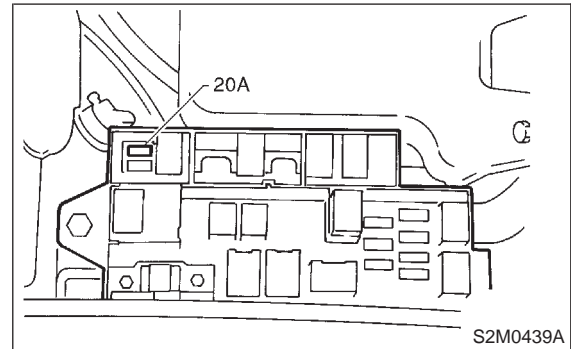
Connector & terminal
(F66) No. 28 (+) — Chassis ground (-):



- CHECK** : *Is the voltage more than 10 V?*
- YES** : Go to step 2A10.
- NO** : Go to step 2A9.

2A7 : CHECK 20 A FUSE.

- 1) Remove 20 A fuse from A/C relay holder.
- 2) Check condition of fuse.



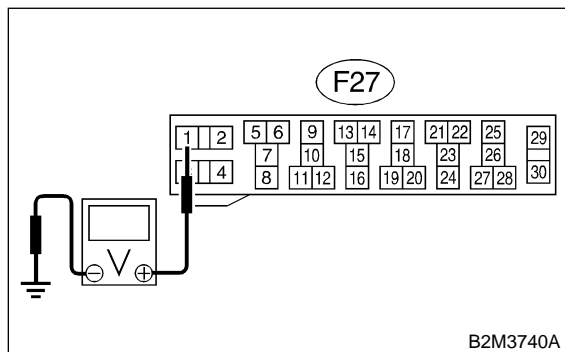
- CHECK** : *Is the fuse blown-out?*
- YES** : Replace fuse.
- NO** : Go to step 2A8.

2A8 : CHECK POWER SUPPLY TO A/C RELAY HOLDER 20 A FUSE TERMINAL.

Measure voltage of harness between A/C relay holder 20 A fuse terminal and chassis ground.

Connector & terminal

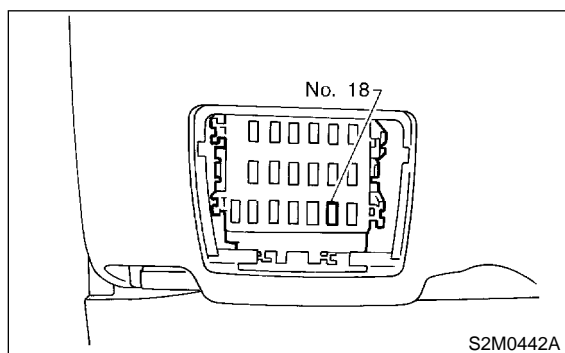
(F27) No. 1 (+) — Chassis ground (-):



- CHECK** : **Is the voltage more than 10 V?**
- YES** : Repair open circuit in harness between 20 A fuse and main fan relay terminal.
- NO** : Repair open circuit in harness between main fuse box connector and 20 A fuse terminal.

2A9 : CHECK FUSE.

- 1) Turn ignition switch to OFF.
- 2) Remove fuse No. 18 from joint box.
- 3) Check condition of fuse.



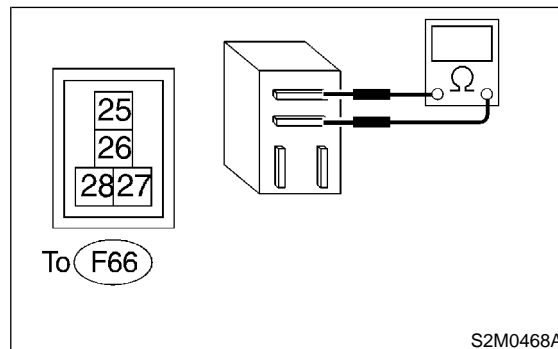
- CHECK** : **Is the fuse blown-out?**
- YES** : Replace fuse.
- NO** : Repair open circuit in harness between main fan relay and ignition switch.

2A10 : CHECK MAIN FAN RELAY.

- 1) Turn ignition switch to OFF.
- 2) Measure resistance of main fan relay.

Terminal

No. 25 — No. 26:



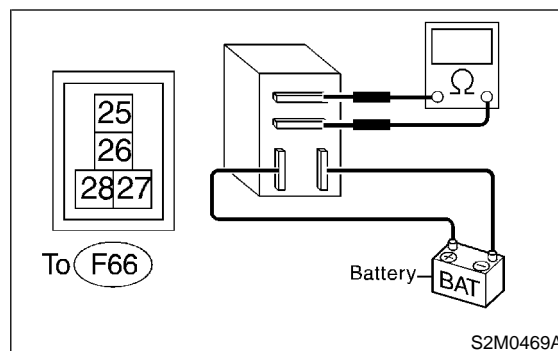
- CHECK** : **Is the resistance more than 1 MΩ?**
- YES** : Go to step 2A11.
- NO** : Replace main fan relay.

2A11 : CHECK MAIN FAN RELAY.

- 1) Connect battery to terminals No. 27 and No. 28 of main fan relay.
- 2) Measure resistance of main fan relay.

Terminal

No. 25 — No. 26:



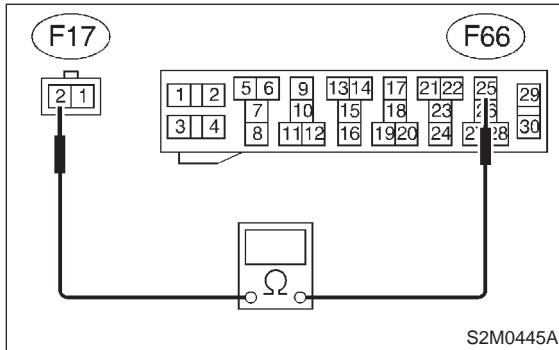
- CHECK** : **Is the resistance less than 1 Ω?**
- YES** : Go to step 2A12.
- NO** : Replace main fan relay.

2A12 : CHECK HARNESS BETWEEN MAIN FAN RELAY TERMINAL AND MAIN FAN MOTOR CONNECTOR.

Measure resistance of harness between main fan motor connector and main fan relay terminal.

Connector & terminal

(F17) No. 2 — (F66) No. 25:



CHECK : **Is the resistance less than 1 Ω?**

YES : Go to step **2A13**.

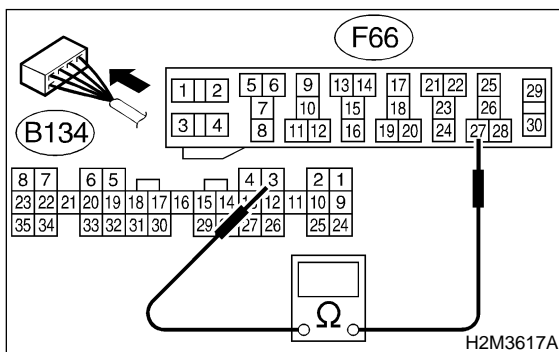
NO : Repair open circuit in harness between main fan motor connector and main fan relay terminal.

2A13 : CHECK HARNESS BETWEEN MAIN FAN RELAY AND ECM.

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from ECM.
- 3) Measure resistance of harness between main fan relay connector and ECM connector.

Connector & terminal

(F66) No. 27 — (B134) No. 3:



CHECK : **Is the resistance less than 1 Ω?**

YES : Go to step **2A14**.

NO : Repair open circuit in harness between main fan relay and ECM.

2A14 : CHECK POOR CONTACT.

Check poor contact in connector between main fan and ECM. <Ref. to FOREWORD [W3C1].>

CHECK : **Is there poor contact in connector between main fan motor and ECM?**

YES : Repair poor contact connector.

NO : Contact with your Subaru distributor.

NOTE:

Inspection by your Subaru distributor is required, because probable cause is deterioration of multiple parts.