

3. Radiator Sub Fan (With A/C model only)

A: OPERATION

DETECTING CONDITION:

Condition (1):

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

Condition (2):

- Engine coolant temperature is above 100°C (212°F).
- A/C switch is turned OFF.
- Vehicle speed is below 19 km/h (12 MPH).

TROUBLE SYMPTOM:

- Radiator sub fan does not rotate under conditions (1) and (2) above.

3A1 : CHECK POWER SUPPLY TO SUB FAN MOTOR.

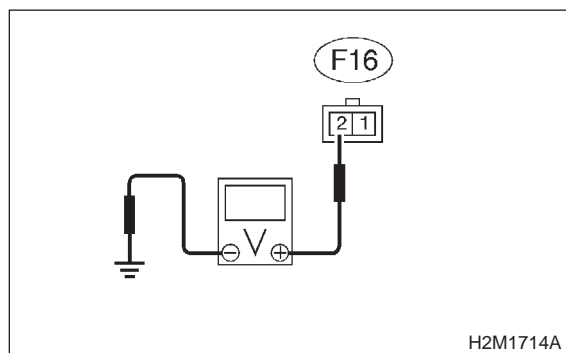
CAUTION:

Be careful not to overheat engine during repair.

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from sub fan motor and main fan motor.
- 3) Start the engine, and warm it up until engine coolant temperature increases over 100°C (212°F).
- 4) Stop the engine and turn ignition switch to ON.
- 5) Measure voltage between sub fan motor connector and chassis ground.

Connector & terminal

(F16) No. 2 (+) — Chassis ground (-):



CHECK : **Is the voltage more than 10 V?**

YES : Go to step 3A2.

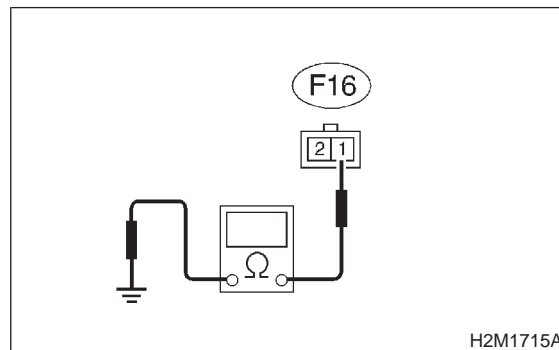
NO : Go to step 3A5.

3A2 : CHECK GROUND CIRCUIT OF SUB FAN MOTOR.

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

Connector & terminal

(F16) No. 1 — Chassis ground:



CHECK : **Is the resistance less than 5 Ω?**

YES : Go to step 3A3.

NO : Repair open circuit in harness between sub fan motor connector and chassis ground.

3A3 : CHECK POOR CONTACT.

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

CHECK : **Is there poor contact in sub fan motor connector?**

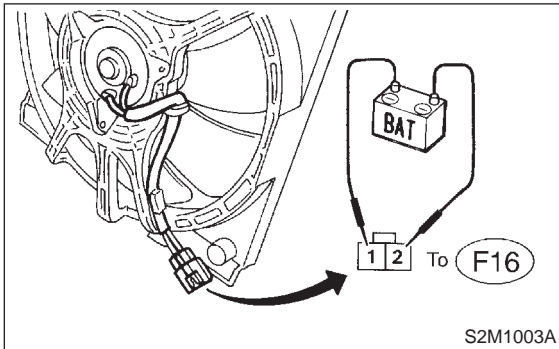
YES : Repair poor contact in sub fan motor connector.

NO : Go to step 3A4.

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3A4 : CHECK SUB FAN MOTOR.

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

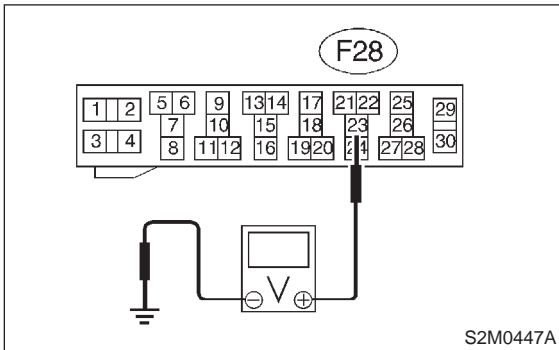


- CHECK** : *Does the sub fan rotate?*
- YES** : Repair poor contact in sub fan motor connector.
- NO** : Replace sub fan motor with a new one.

3A5 : CHECK POWER SUPPLY TO SUB FAN RELAY.

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

Connector & terminal
(F28) No. 23 (+) — Chassis ground (-):

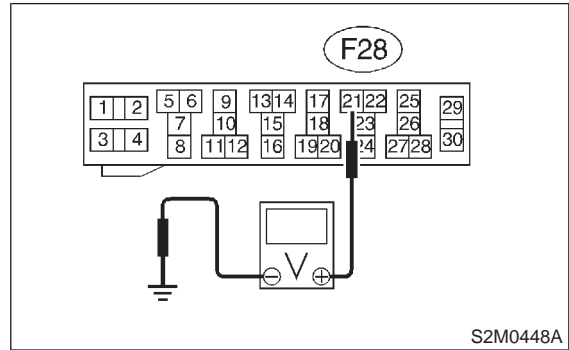


- CHECK** : *Is the voltage more than 10 V?*
- YES** : Go to step 3A6.
- NO** : Go to step 3A7.

3A6 : CHECK POWER SUPPLY TO SUB FAN RELAY.

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

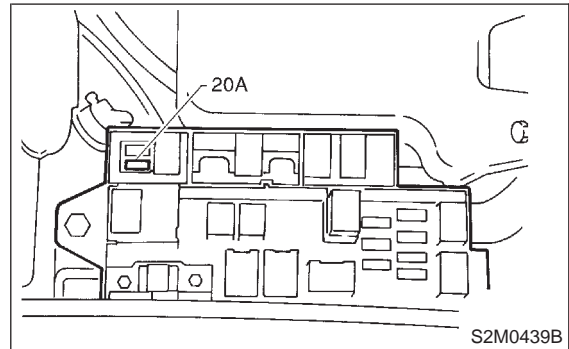
Connector & terminal
(F28) No. 21 (+) — Chassis ground (-):



- CHECK** : *Is the voltage more than 10 V?*
- YES** : Go to step 3A10.
- NO** : Go to step 3A9.

3A7 : CHECK 20 A FUSE.

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



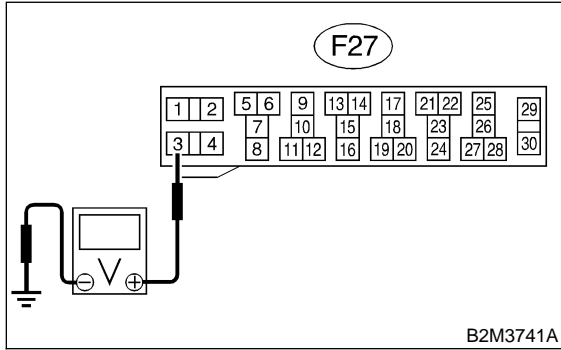
- CHECK** : *Is the fuse blown-out?*
- YES** : Replace fuse.
- NO** : Go to step 3A8.

3A8 : 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

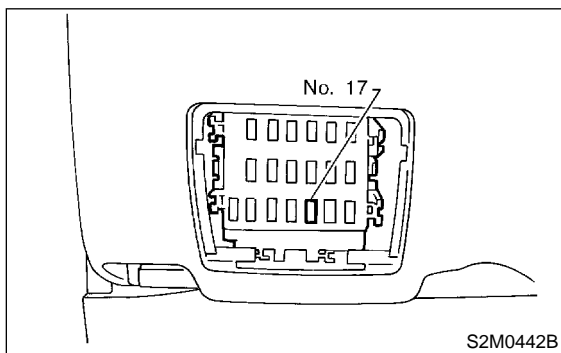
(F27) No. 3 (+) — Chassis ground (-):



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

3A9 : CHECK FUSE.

- 1) Turn ignition switch to OFF.
- 2) Remove fuse No. 17 from joint box.
- 3) Check condition of fuse.



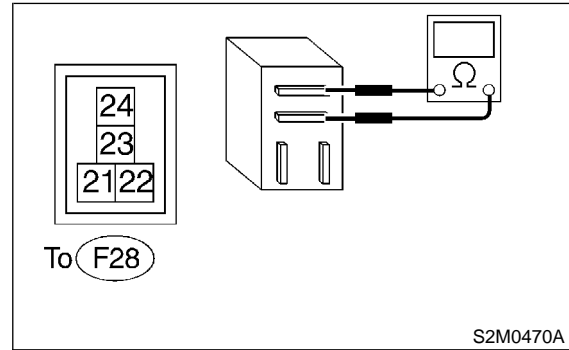
- CHECK** : **Is the fuse blown-out?**
- YES** : Replace fuse.
- NO** : Repair open circuit in harness between sub fan relay and ignition switch.

3A10 : CHECK SUB FAN RELAY.

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

Terminal

No. 23 — No. 24:



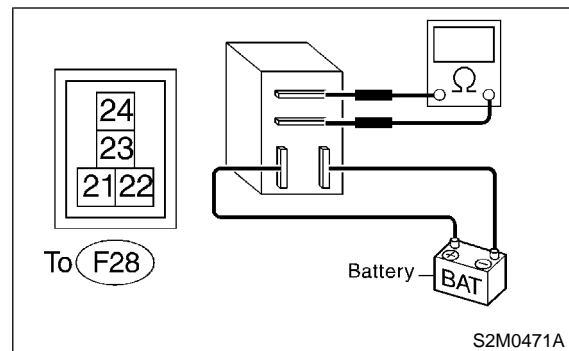
- CHECK** : **Is the resistance more than 1 MΩ?**
- YES** : Go to step 3A11.
- NO** : Replace sub fan relay.

3A11 : CHECK SUB FAN RELAY.

- 1) Connect battery to terminals No. 21 and No. 22 of sub fan relay.
- 2) Measure resistance of sub fan relay.

Terminal

No. 23 — No. 24:



- CHECK** : **Is the resistance less than 1 Ω?**
- YES** : Go to step 3A12.
- NO** : Replace sub fan relay.

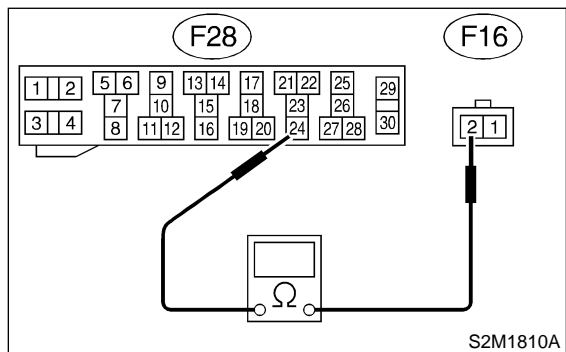
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3A12 : CHECK HARNESS BETWEEN SUB FAN RELAY TERMINAL AND SUB FAN MOTOR CONNECTOR.

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

Connector & terminal

(F16) No. 2 — (F28) No. 24:



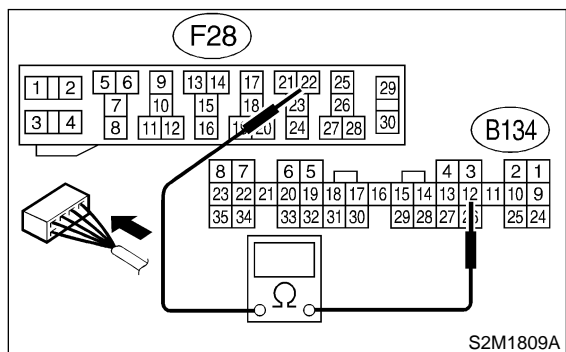
- CHECK** : *Is the resistance less than 1 Ω?*
- YES** : Go to step **3A13**.
- NO** : Repair open circuit in harness between sub fan motor and sub fan relay connector.

3A13 : CHECK HARNESS BETWEEN SUB FAN RELAY AND ECM.

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

Connector & terminal

(F28) No. 22 — (B134) No. 12:



- CHECK** : *Is the resistance less than 1 Ω?*
- YES** : Go to step **3A14**.
- NO** : Repair open circuit in harness between sub fan relay and ECM.

3A14 : CHECK POOR CONTACT.

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

- CHECK** : *Is there poor contact in connector between sub 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.

MEMO: