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).

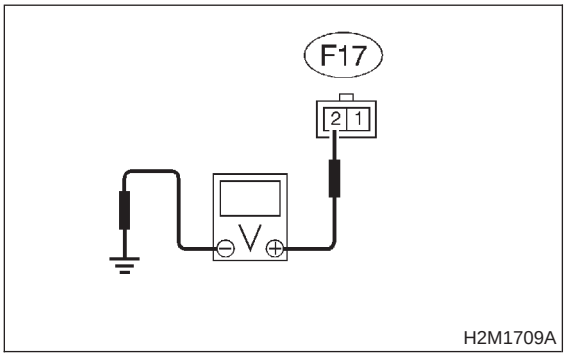
TROUBLE SYMPTOM:
- Radiator main fan does not rotate under the above conditions.

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 (−):

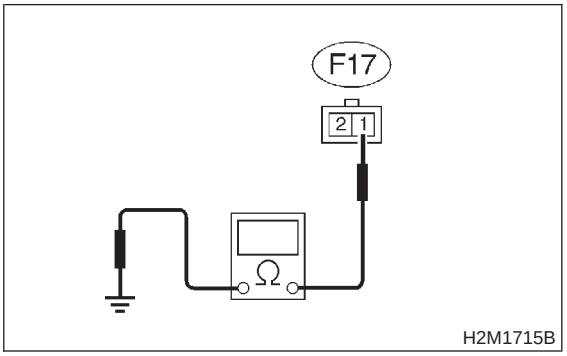


CHECK : ***Is the voltage more than 10 V?***
YES : Go to step **2A2**.
NO : Go to step **2A5**.

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.

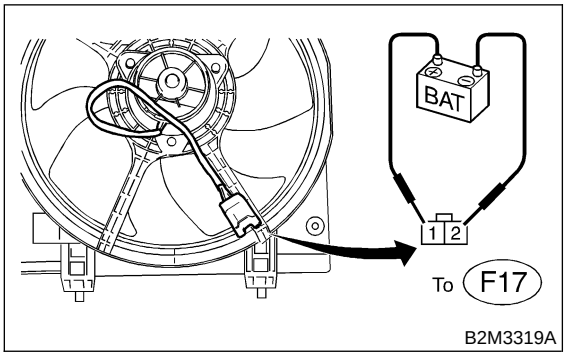
2A3 : CHECK POOR CONTACT.

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.

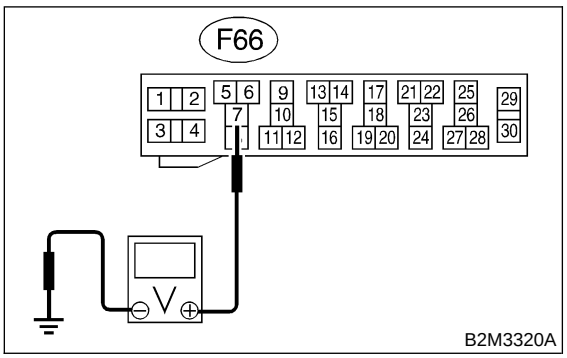


CHECK : ***Does the main fan rotate?***
YES : Repair poor contact in main fan motor connector.
NO : Replace main fan motor with a new one.

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. 7 (+) — Chassis ground (−):

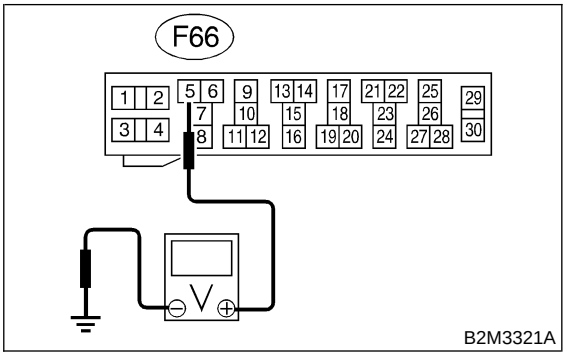


CHECK : ***Is the voltage more than 10 V?***
YES : Go to step **2A6**.
NO : Go to step **2A7**.

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.

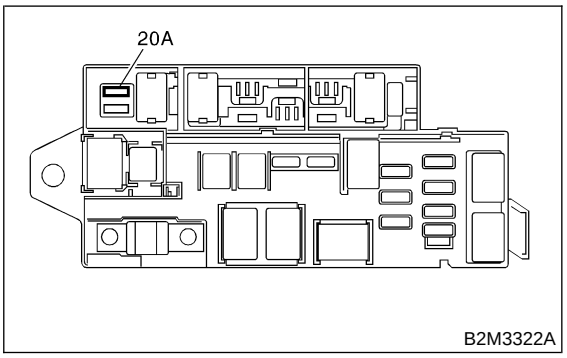
Connector & terminal
(F66) No. 5 (+) — Chassis ground (−):



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.

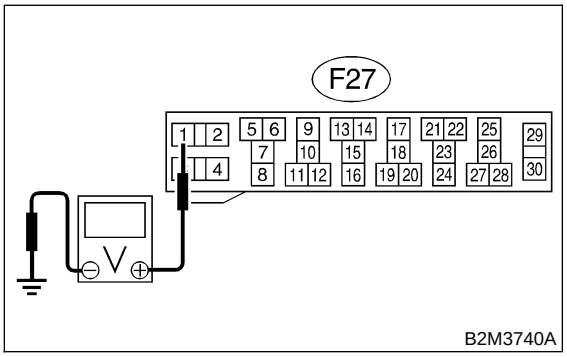


CHECK : ***Is the fuse blown-out?***
YES : Replace fuse.
NO : Go to step **2A8**.

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.

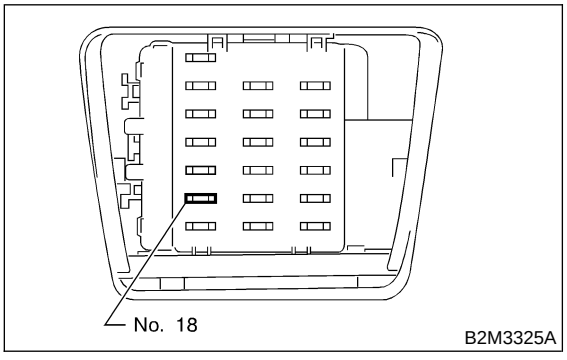
Connector & terminal
(F27) No. 1 (+) — Chassis ground (−):



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.

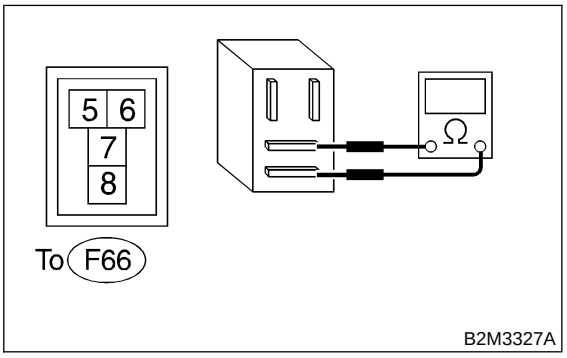


CHECK : ***Is the fuse blown-out?***
YES : Replace fuse.
NO : Repair open circuit in harness between main fan relay and ignition switch.

2A10 : CHECK MAIN FAN RELAY.

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

Terminal
No. 7 — No. 8:

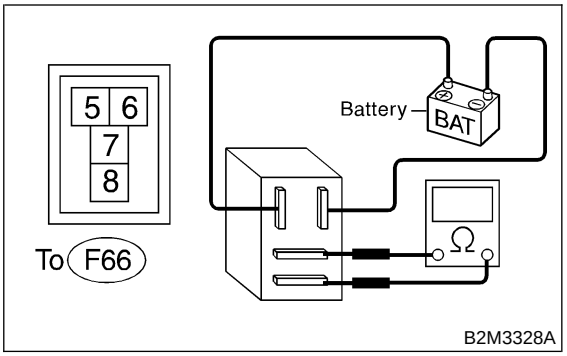


CHECK : ***Is the resistance more than 1 MΩ?***
YES : Go to step **2A11**.
NO : Replace main fan relay.

2A11 : CHECK MAIN FAN RELAY.

1) Connect battery to terminals No. 6 and No. 5 of main fan relay.
2) Measure resistance of main fan relay.

Terminal
No. 7 — No. 8:

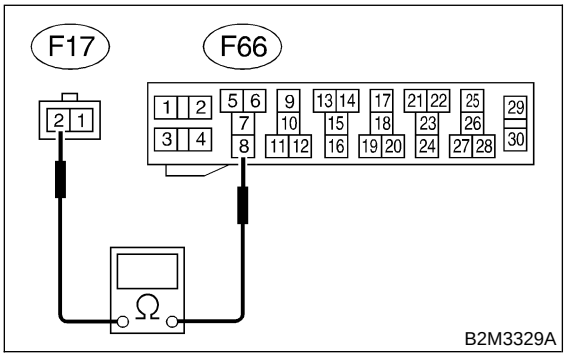


CHECK : ***Is the resistance less than 1 Ω?***
YES : Go to step **2A12**.
NO : Replace main fan relay.

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. 8:

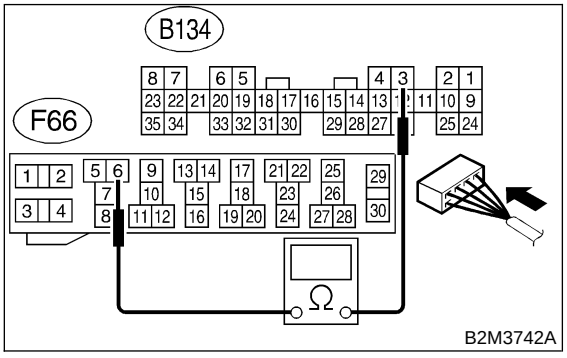


CHECK : ***Is the resistance less than 1 Ω?***
YES : Go to step **2A13**.
NO : Repair open circuit in harness between main fan motor connector and main fan relay terminal.

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 ceonnector.

Connector & terminal
(F66) No. 6 — (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.