

2. Combination Meter

A: DIAGNOSTICS PROCEDURE

If speedometer does not operate, or operates abnormally, check combination meter circuit.

CAUTION:

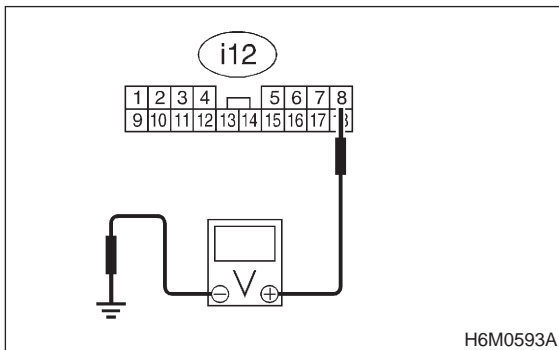
Make sure that trouble code of vehicle speed sensor 2 system appears in electrical system on-board diagnosis.

2A1 : CHECK POWER SUPPLY FOR COMBINATION METER.

- 1) Remove combination meter.
- 2) Turn ignition switch to ON.
- 3) Measure voltage between combination meter connector and chassis ground.

Connector & terminal

(i12) No. 8 (+) — Chassis ground (-):



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

NOTE:

In this case, repair the following:

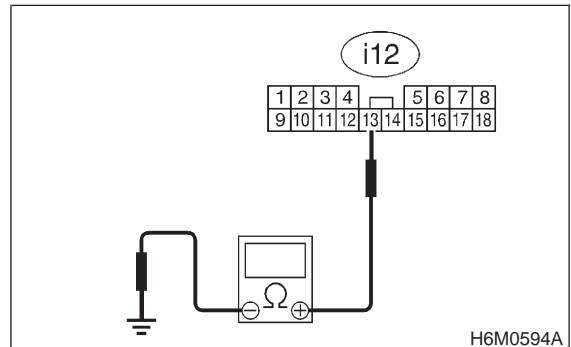
- Open circuit in harness between combination meter and battery.
- Poor contact in coupling connectors (i12) and combination meter connector. <Ref. to FOREWORD [T3C0].>

2A2 : CHECK GROUND CIRCUIT OF COMBINATION METER.

- 1) Turn ignition switch to OFF.
- 2) Measure resistance of harness between combination meter connector and chassis ground.

Connector & terminal

(i12) No. 13 (+) — Chassis ground (-):



- CHECK** : Is the resistance less than 10 Ω?
- YES** : Go to step 2A3.
- NO** : Repair harness and connector.

2A3 : CHECK TRANSMISSION TYPE.

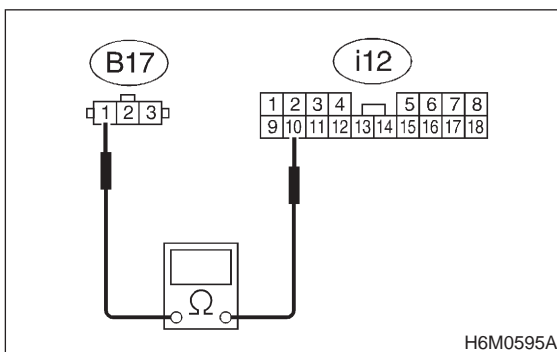
- CHECK** : Is the transmission type MT?
- YES** : Go to step 2A4.
- NO** : Go to step 2A9.

2A4 : CHECK HARNESS CONNECTOR BETWEEN COMBINATION METER AND VEHICLE SPEED SENSOR 2.

- 1) Disconnect connector from vehicle speed sensor 2.
- 2) Measure resistance of harness connector between vehicle speed sensor 2 and combination meter.

Connector & terminal

(B17) No. 1 — (i12) No. 10:



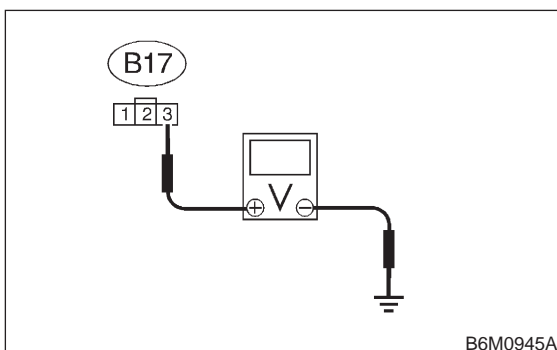
- CHECK** : Is the resistance less than 10 Ω?
- YES** : Go to step 2A5.
- NO** : Repair wiring harness.

2A5 : CHECK HARNESS CONNECTOR BETWEEN BATTERY AND VEHICLE SPEED SENSOR 2.

- 1) Turn ignition switch to ON.
- 2) Measure voltage between vehicle speed sensor 2 connector (B17) and chassis ground.

Connector & terminal

(B17) No. 3 (+) — Chassis ground (-):



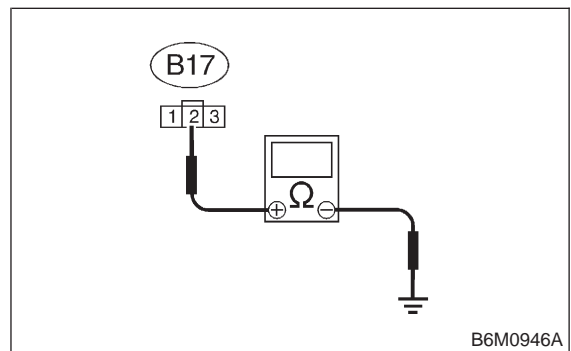
- CHECK** : Is the voltage more than 10 V?
- YES** : Go to step 2A6.
- NO** : Repair harness connector between battery and vehicle speed sensor 2.

2A6 : CHECK HARNESS CONNECTOR BETWEEN VEHICLE SPEED SENSOR 2 AND ENGINE GROUND.

- 1) Turn ignition switch to OFF.
- 2) Measure resistance between vehicle speed sensor 2 connector (B17) and engine ground.

Connector & terminal

(B17) No. 2 (+) — Engine ground (-):



- CHECK** : Is the resistance less than 10 Ω?
- YES** : Go to step 2A7.
- NO** : Repair harness connector between vehicle speed sensor 2 and engine ground.

2A7 : CHECK VEHICLE SPEED SENSOR 2.

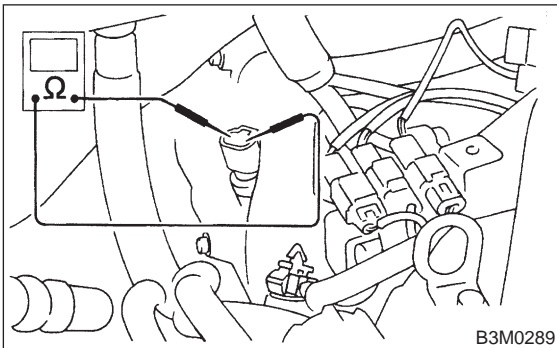
NOTE:

- If resistance between terminals of vehicle speed sensor 2 is out of specification, the sensor may have a failure.
- If resistance is OK and voltage between terminals of vehicle speed sensor 2 is out of specification, mechanical trouble may be present between vehicle speed sensor 2 and speedometer shaft in transmission.

Measure resistance between terminals of vehicle speed sensor 2.

Terminals

No. 2 — No. 3:



CHECK : *Is the resistance between 350 and 450 Ω ?*

YES : Go to step **2A8**.

NO : Replace vehicle speed sensor 2.

2A8 : CHECK VEHICLE SPEED SENSOR 2.

- 1) Connect connector to vehicle speed sensor 2.
- 2) Set the vehicle on free roller, or lift-up the vehicle and support with safety stands.

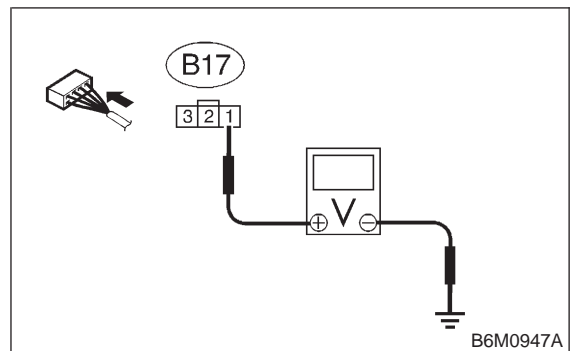
WARNING:

Be careful not to be caught up by the running wheels.

- 3) Drive the vehicle at speed greater than 20 km/h (12 MPH).
- 4) Measure voltage between vehicle speed sensor 2 connector (B17) and chassis ground.

Connector & terminal

(B17) No. 1 (+) — Chassis ground (-):



CHECK : *Is the voltage more than 4 V?*

YES : Repair or replace speedometer.

NO : Replace vehicle speed sensor 2.

2A9 : CHECK HARNESS CONNECTOR BETWEEN COMBINATION METER AND AUTOMATIC TRANSMISSION CONTROL MODULE.

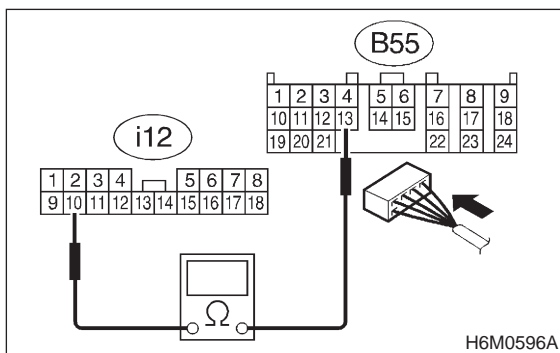
- 1) Disconnect connector from automatic transmission control module.
- 2) Measure resistance between combination meter connector (i12) and automatic transmission control module connector (B55).

CAUTION:

To measure the voltage and/or resistance, use a tapered pin with a diameter of less than 0.64 mm (0.025 in). Do not insert the pin more than 5 mm (0.20 in).

Connector & terminal

(i12) No. 10 — (B55) No. 13:



CHECK : Is the resistance less than 10 Ω?

YES : Go to step 2A10.

NO : Repair harness connector between combination meter and automatic transmission control module.

2A10 : CHECK AUTOMATIC TRANSMISSION CONTROL MODULE.

- 1) Connect connector to automatic transmission control module.
- 2) Set the vehicle on free roller, or lift-up the vehicle and support with safety stands.

WARNING:

Be careful not to be caught by the running wheels.

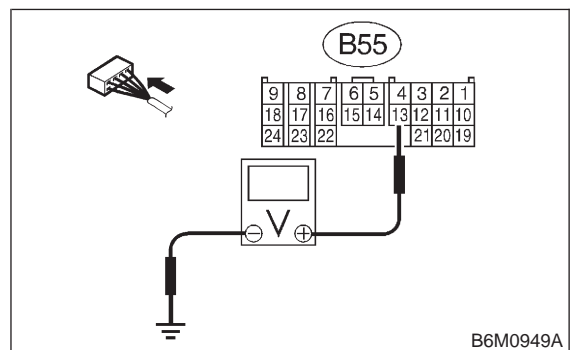
- 3) Drive the vehicle faster than 20 km/h (12 MPH).
- 4) Measure voltage between automatic transmission control module connector (B55) and chassis ground.

CAUTION:

To measure the voltage and/or resistance, use a tapered pin with a diameter of less than 0.64 mm (0.025 in). Do not insert the pin more than 5 mm (0.20 in).

Connector & terminal

(B55) No. 13 (+) — Chassis ground (-):



CHECK : Is the voltage more than 4 V?

YES : Repair or replace speedometer.

NO : Replace automatic transmission control module. <Ref. to 3-2 [W22A0].>