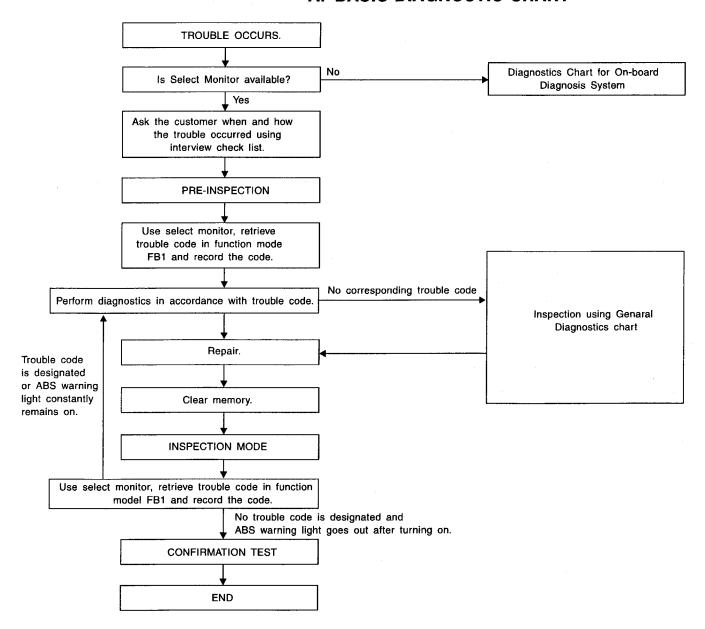
10. Diagnostics Chart with Select Monitor

A: BASIC DIAGNOSTIC CHART



B4M1076A

CAUTION:

Remove foreign matter (dust, water, etc.) from the ABSCM&H/U connector during removal and installation.

NOTE:

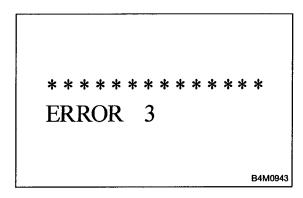
To check harness for broken wires or short circuits, shake it while holding it or the connector.

B: LIST OF TROUBLE CODE

Code	Display screen (FB1)	Contents of diagnosis	Ref. to
	ERROR 3 (1)	Select monitor communication failure	[T10C0]☆10
11	NO TROUBLE	Although no trouble appears on the select monitor display, the ABS warning light remains on.	
21	FR. SS HARD	Open circuit or input voltage too high of FR sensor	[T10E0]☆10
22	FR. SS SOFT	Abnormal ABS sensor signal of FR sensor	[T10l0]☆10
23	FL. SS HARD	Open circuit or input voltage too high of FL sensor	[T10F0]☆10
24	FL. SS SOFT	Abnormal ABS sensor signal of FL sensor	[T10J0]☆10
25	RR. SS HARD	Open circuit or input voltage too high of RR sensor	[T10G0]☆10
26	RR. SS SOFT	Abnormal ABS sensor signal of RR sensor	[T10K0]☆10
27	RL. SS HARD	Open circuit or input voltage too high of RL sensor	[T10H0]☆10
28	RL. SS SOFT	Abnormal ABS sensor signal of RL sensor	[T10L0]☆10
29	EITHER. SS SOFT	Abnormal ABS sensor signal (any one of four)	[T10M0]☆10
31	FR. EV VALVE	Abnormal FR inlet valve	[T10N0]☆10
32	FR. AV VALVE	Abnormal FR outlet valve	[T10R0]☆10
33	FL. EV VALVE	Abnormal FL inlet valve	[T10O0]☆10
34	FL. AV VALVE	Abnormal FL outlet valve	[T10S0]☆10
35	RR. EV VALVE	Abnormal RR inlet valve	[T10P0]☆10
36	RR. AV VALVE	Abnormal RR outlet valve	[T10T0]☆10
37	RL. EV VALVE	Abnormal RL inlet valve	
38	RL. AV VALVE Abnormal RL outlet valve		[T10U0]☆10
41	ECU	Abnormal ABSCM&H/U	[T10V0]☆10
	LOW VOLTAGE	Source voltage is low.	[T10W0]☆10
42	HIGH VOLTAGE	Source voltage is high.	[T10X0]☆10
	CCM LINE	A combination of AT control abnormals (ABS not in control)	[T10Y0]☆10
44	CCM OPEN	A combination of AT control abnormals (ABS in control)	[T10Z0]☆10
	V. RELAY	Abnormal valve relay	[T10AA0]☆10
51	V. RELAY ON	Valve relay ON failure	[T10AB0]☆10
	M. RELAY OPEN	Open circuit of motor relay	[T10AC0]☆10
52	M. RELAY ON	Motor relay ON failure	[T10AD0]☆10
	MOTOR	Abnormal motor	[T10AE0]☆10
54	BLS	Abnormal stop light switch	
	G SENSOR LINE	Open or short circuit of G sensor	[T10AG0]☆10
	G SENSOR +B	Battery short of G sensor	[T10AH0]☆10
56	G SENSOR H μ	Abnormal G sensor high μ output	[T10Al0]☆10
	G SENSOR STICK	G sensor output is stuck.	[T10AJ0]☆10

NOTE:

High μ means high friction coefficient against road surface.



C: ERROR 3 (1)
— SELECT MONITOR COMMUNICATION
FAILURE —

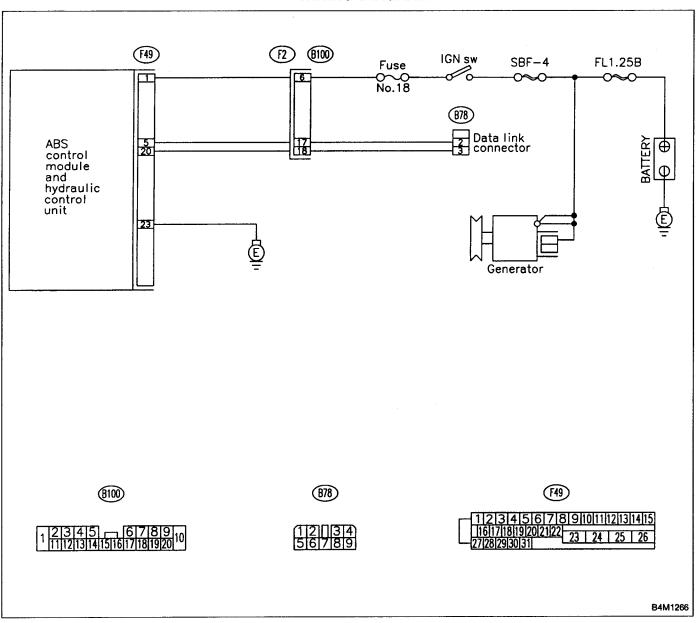
DIAGNOSIS:

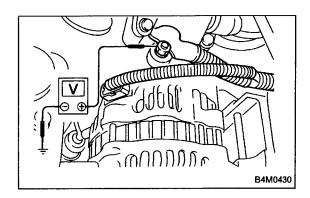
Faulty harness connector

TROUBLE SYMPTOM:

- ABS warning light remains on.
- ERROR 3 or 1 appears on the select monitor display.

WIRING DIAGRAM:





10C1 CHECK GENERATO

- 1) Start the engine.
- 2) Idle the engine.
- 3) Measure voltage between generator and chassis ground.

Terminal

10C3

Generator B terminal (+) — Chassis ground (-):

CHECK): Is the voltage between 10 and 15 V?

YES : Go to step **10C2**. No: Repair generator.

10C2 **CHECK BATTERY TERMINAL.**

Turn ignition switch to OFF.

(NO) : Go to step **10C3**.

(CHECK): Is there poor contact at battery terminal?

(YES): Repair battery terminal.

MONITOR.

CHECK COMMUNICATION OF SELECT

Using the select monitor, check whether communication to other system (such as engine, AT, etc.) can be executed normally.

(CHECK): Are the name and year of the system displayed on the select monitor?

YES : Go to step **10C4**.

: Repair select monitor communication cable and connector.

CHECK INSTALLATION OF ABSCM&H/U 10C4 CONNECTOR.

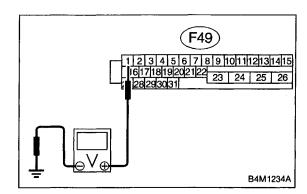
Turn ignition switch to OFF.

(CHECK): Is ABSCM&H/U connector inserted into ABSCM&H/U until the clamp locks onto it?

YES: Go to step **10C5**.

: Insert ABSCM&H/U connector into ABSCM&H/U until the clamp locks onto it.

10. Diagnostics Chart with Select Monitor



10C5 CHECK POWER SUPPLY OF ABSCM&H/U.

- 1) Disconnect connector from ABSCM&H/U.
- 2) Start engine.
- 3) Idle the engine.
- 4) Measure voltage between ABSCM&H/U connector and chassis ground.

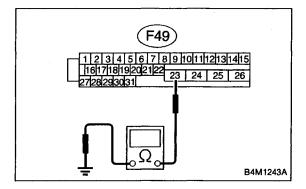
Connector & terminal

(F49) No. 1 (+) — Chassis ground (-):

CHECK : Is the voltage between 10 and 15 V?

YES: Go to step **10C6**.

Repair ABSCM&H/U power supply circuit.



10C6 CHECK GROUND CIRCUIT OF ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Measure resistance between ABSCM&H/U connector and chassis ground.

Connector & terminal

(F49) No. 23 — Chassis ground:

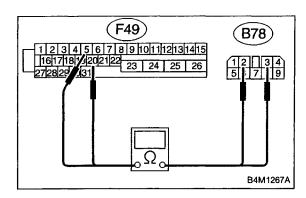
(CHECK): Is the resistance less than 0.5 Ω ?

Repair harness/connector between ABSCM&H/U

and select monitor.

(NO) : Go to step 10C7.

10. Diagnostics Chart with Select Monitor



10		CHECK HARNESS/CONNECTOR BETWEEN
	1007	ABSCM&H/U AND DATA LINK CONNECTOR.

1) Turn ignition switch OFF.

2) Measure resistance between ABSCM&H/U connector and data link connector.

Connector & terminal (F49) No. 20 — (B78) No. 3: (F49) No. 5 — (B78) No. 2:

(CHECK): Is the resistance less than 0.5 Ω ?

YES: Repair harness and connector between

ABSCM&H/U and data link connector.

(NO): Go to step 10C8.

10C8 CHECK POOR CONTACT IN CONNECTORS.

CHECK: Is there poor contact in connectors between ABSCM&H/U and data link connector? < Ref. to FOREWORD [T3C1].☆10>

VES: Repair connector. **NO**: Replace ABSCM&H/U.

D•ALL 11 (FB1) NO TROUBLE

D: NO TROUBLE

— ALTHOUGH NO TROUBLE APPEARS ON THE SELECT MONITOR DISPLAY, THE ABS WARNING LIGHT REMAINS ON —

DIAGNOSIS:

• ABS warning light circuit is shorted.

TROUBLE SYMPTOM:

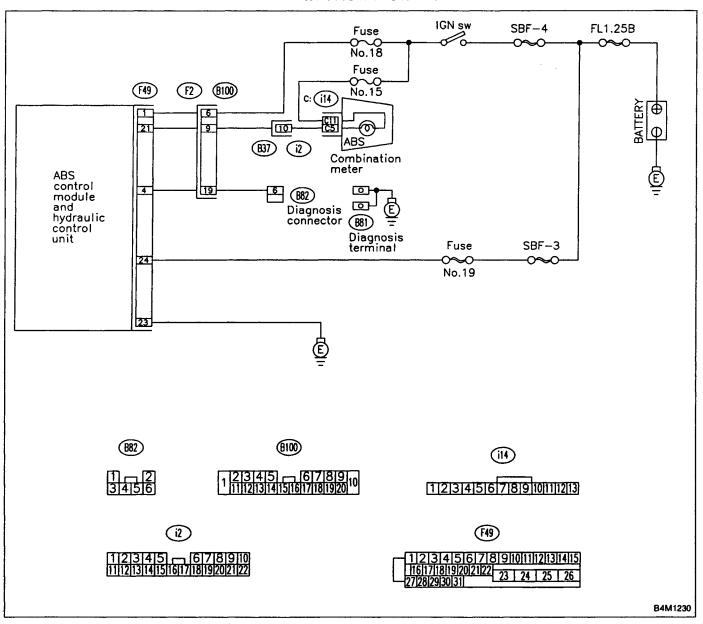
- ABS warning light remains on.
- NO TROUBLE displayed on the select monitor.

NOTE:

B4M0944

When the ABS warning light is OFF and "NO TROUBLE" is displayed on the select monitor, the system is in normal condition.

WIRING DIAGRAM:



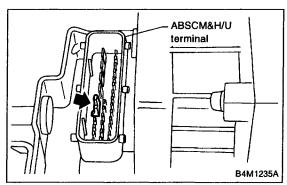
10D1 CHECK WIRING HARNESS.

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector (F2) from connector (B100).
- 3) Turn ignition switch to ON.

CHECK): Does the ABS warning light remain off?

YES: Go to step **10D2**.

(NO): Repair front wiring harness.



10D2 CHECK PROJECTION AT ABSCM&H/U.

1) Turn ignition switch to OFF.

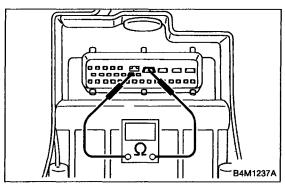
2) Disconnect connector from ABSCM&H/U.

3) Check for broken projection at the ABSCM&H/U terminal.

CHECK): Are the projection broken?

YES: Go to step **10D3**.

NO: Replace ABSCM&H/U.



10D3 CHECK ABSCM&H/U.

Measure resistance between ABSCM&H/U terminals.

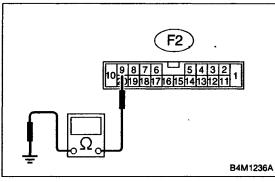
Terminals

No. 21 — No. 23:

(CHECK): Is the resistance more than 1 M Ω ?

Go to step **10D4**.

Replace valve relay.



10D4 CHECK WIRING HARNESS.

Measure resistance between connector (F2) and chassis ground.

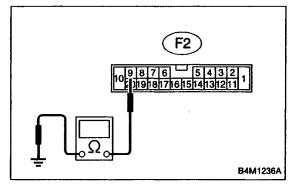
Connector & terminal

(F2) No. 9 — Chassis ground:

CHECK): Is the resistance less than 0.5 Ω ?

Go to step **10D5**.

Repair harness.



10D5 CHECK WIRING HARNESS.

1) Connect connector to ABSCM&H/U.

2) Measure resistance between connector (F2) and chassis ground.

Connector & terminal

(F2) No. 9 — Chassis ground:

(CHECK): Is the resistance more than 1 M Ω ?

(YES): Go to step 10D6.

No : Repair harness.

10. Diagnostics Chart with Select Monitor

10D6 CHECK POOR CONTACT IN ABSCM&H/U CONNECTOR.

CHECK : Is there poor contact in ABSCM&H/U connector? < Ref. to FOREWORD [T3C1].☆10>

(NO): Repair connector.
(NO): Replace ABSCM&H/U.

10. Diagnostics Chart with Select Monitor

D•NEW 21 (FB1) FR.SS HARD E: TROUBLE CODE 21 FR. SS HARD

— ABNORMAL FRONT RH ABS SENSOR

(OPEN CIRCUIT OR INPUT VOLTAGE TOO

HIGH) —

B4M0945

D•NEW 23 (FB1) FL.SS HARD F: TROUBLE CODE 23 FL. SS HARD

— ABNORMAL FRONT LH ABS SENSOR

(OPEN CIRCUIT OR INPUT VOLTAGE TOO

HIGH) —

B4M0946

D•NEW 25 (FB1) RR.SS HARD G: TROUBLE CODE 25 RR. SS HARD

— ABNORMAL REAR RH ABS SENSOR (OPEN CIRCUIT OR INPUT VOLTAGE TOO HIGH) —

B4M0947

D•NEW 27 (FB1) RL.SS HARD

B4M0948

H: TROUBLE CODE 27 RL. SS HARD

— ABNORMAL REAR LH ABS SENSOR (OPEN CIRCUIT OR INPUT VOLTAGE TOO HIGH) —

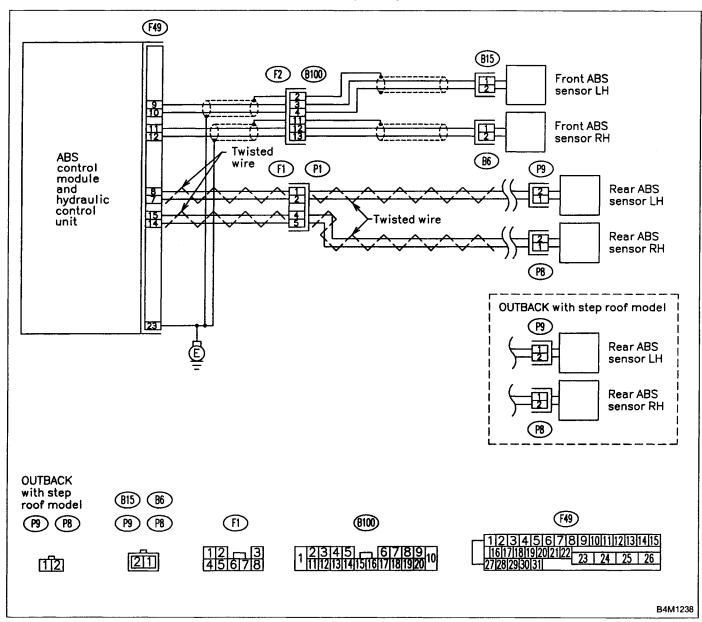
DIAGNOSIS:

- Faulty ABS sensor (Broken wire, input voltage too high)
- Faulty harness connector

TROUBLE SYMPTOM:

ABS does not operate.

WIRING DIAGRAM:



FR (F05)km/h 30

B4M0922

CHECK OUTPUT OF ABS SENSOR USING 10H1 **SELECT MONITOR.**

Read the ABS sensor output corresponding to the faulty system in the select monitor function mode.

NOTE:

The select monitor display shows that the front right wheel is rotating at 30 km/h.

(CHECK): Does the speed indicated on the display change in response to the speedometer reading during acceleration/deceleration when the steering wheel is in the straightahead position?

YES: Go to step **10H2**. (NO) : Go to step 10H9.

10H2 CHECK INSTALLATION OF ABS SENSOR.

Tightening torque:

 $32 \pm 10 \text{ N} \cdot \text{m} (3.3 \pm 1.0 \text{ kg-m}, 24 \pm 7 \text{ ft-lb})$

(CHECK): Are the ABS sensor installation bolts tightened securely?

YES : Go to step **10H3**.

(NO): Tighten ABS sensor installation bolts securely.

10H3 CHECK INSTALLATION OF TONE WHEEL.

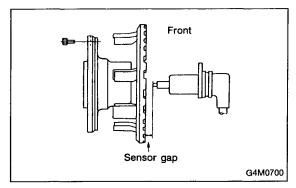
Tightening torque:

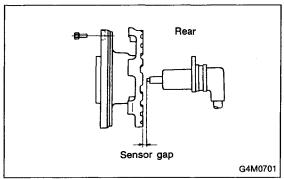
 $13 \pm 3 \text{ N} \cdot \text{m} \ (1.3 \pm 0.3 \text{ kg-m}, 9 \pm 2.2 \text{ ft-lb})$

(CHECK): Are the tone wheel installation bolts tightened securely?

YES: Go to step **10H4**.

(NO): Tighten tone wheel installation bolts securely.





40114	<u> </u>
10H4	CHECK ABS SENSOR GAP.

Measure tone wheel-to-pole piece gap over entire perimeter of the wheel.

CHECK : Is the gap within the specifications shown in the following table?

	Front wheel	Rear wheel
Specifications	1	0.7 — 1.2 mm (0.028 — 0.047 in)

(YES): Go to step 10H5.

NO: Adjust the gap.

NOTE:

Adjust the gap using spacers (Part No. 26755AA000). If spacers cannot correct the gap, replace worn sensor or worn tone wheel.

10H5	CHECK HUB RUNOUT.

Measure hub runout.

CHECK): Is the runout less than 0.05 mm (0.0020 in)?

YES: Go to step **10H6**.

No : Repair hub.

10H6 CHECK POOR CONTACT IN CONNECTORS.

Turn ignition switch to OFF.

: Is there poor contact in connectors between ABSCM&H/U and ABS sensor? < Ref. to FOREWORD [T3C1].☆10>

Repair connector.

Go to step 10H7.

10H7 CHECK ABSCM&H/U.

- 1) Connect all connectors.
- 2) Erase the memory.
- 3) Perform inspection mode.
- 4) Read out the trouble code.

CHECK : Is the same trouble code as in the current diagnosis still being output?

YES: Replace ABSCM&H/U.

NO: Go to step **10H8**.

CHECK ANY OTHER TROUBLE CODES 10H8 APPEARANCE.

CHECK): Are other trouble codes being output?



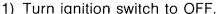
: Proceed with the diagnosis corresponding to the trouble code.

(NO): A temporary poor contact.

NOTE:

Check harness and connectors between ABSCM&H/U and ABS sensor.

10H9 CHECK ABS SENSOR.



- 2) Disconnect connector from ABS sensor.
- 3) Measure resistance of ABS sensor connector terminals.

Terminal

Front RH No. 1 — No. 2: Front LH No. 1 — No. 2: Rear RH No. 1 — No. 2: Rear LH No. 1 — No. 2:

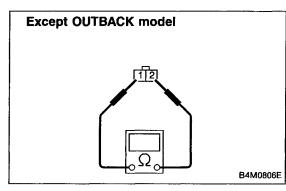


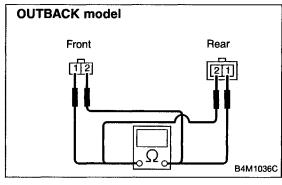
(CHECK): Is the resistance between 0.8 and 1.2 k Ω ?

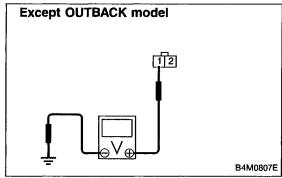
(YES) : Go to step 10H10.

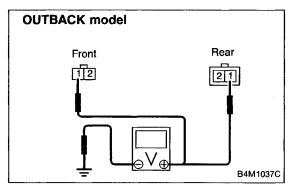


(NO): Replace ABS sensor.









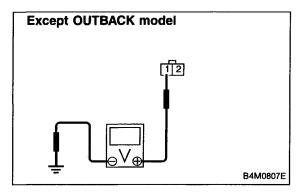
10H10 CHECK BATTERY SHORT OF ABS SENSOR.

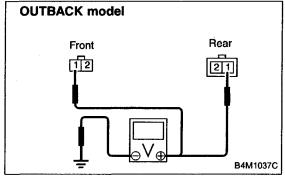
- 1) Disconnect connector from ABSCM&H/U.
- 2) Measure voltage between ABS sensor and chassis around.

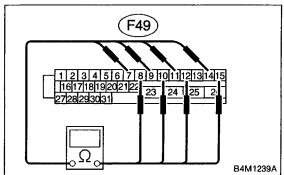
Front RH No. 1 (+) — Chassis ground (-): Front LH No. 1 (+) — Chassis ground (-): Rear RH No. 1 (+) — Chassis ground (-): Rear LH No. 1 (+) — Chassis ground (-):

(CHECK): Is the voltage less than 1 V?

YES: Go to step **10H11**. (NO): Replace ABS sensor.







10H11 CHECK BATTERY SHORT OF ABS SENSOR.

- 1) Turn ignition switch to ON.
- 2) Measure voltage between ABS sensor and chassis ground.

Terminal

Front RH No. 1 (+) — Chassis ground (-): Front LH No. 1 (+) — Chassis ground (-): Rear RH No. 1 (+) — Chassis ground (-): Rear LH No. 1 (+) — Chassis ground (-):

(CHECK): Is the voltage less than 1 V?

YES: Go to step **10H12**. (NO): Replace ABS sensor.

CHECK HARNESS/CONNECTOR BETWEEN 10H12 ABSCM&H/U AND ABS SENSOR.

- 1) Turn ignition switch to OFF.
- 2) Connect connector to ABS sensor.
- 3) Measure resistance between ABSCM&H/U connector terminals.

Connector & terminal

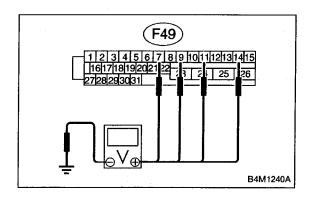
Trouble code 21 / (F49) No. 11 — No. 12: Trouble code 23 / (F49) No. 9 — No. 10: Trouble code 25 / (F49) No. 14 — No. 15: Trouble code 27 / (F49) No. 7 — No. 8:

(CHECK) : Is the resistance between 0.8 and 1.2 k Ω ?

YES): Go to step **10H13**.

(NO): Repair harness/connector between ABSCM&H/U

and ABS sensor.



10H13 CHECK BATTERY SHORT OF HARNESS.

Measure voltage between ABSCM&H/U connector and chassis ground.

Connector & terminal

Trouble code 21 / (F49) No. 11 (+) — Chassis ground

Trouble code 23 / (F49) No. 9 (+) — Chassis ground **(-)**:

Trouble code 25 / (F49) No. 14 (+) — Chassis ground

Trouble code 27 / (F49) No. 7 (+) — Chassis ground (-):

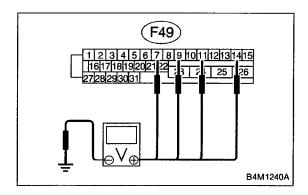
CHECK): Is the voltage less than 1 V?

(YES)

: Go to step **10H14**.

(NO)

Repair harness between ABSCM&H/U and ABS sensor.



10H14 CHECK BATTERY SHORT OF HARNESS.

- 1) Turn ignition switch to ON.
- 2) Measure voltage between ABSCM&H/U connector and chassis ground.

Connector & terminal

Trouble code 21 / (F49) No. 11 (+) — Chassis ground

Trouble code 23 / (F49) No. 9 (+) — Chassis ground

Trouble code 25 / (F49) No. 14 (+) — Chassis ground (-):

Trouble code 27 / (F49) No. 7 (+) — Chassis ground (-):

(CHECK): Is the voltage less than 1 V?

YES: Go to step **10H15**.

(NO): Repair harness between ABSCM&H/U and ABS sensor.

10H15 CHECK INSTALLATION OF ABS SENSOR.

Tightening torque:

 $32 \pm 10 \text{ N} \cdot \text{m} (3.3 \pm 1.0 \text{ kg-m}, 24 \pm 7 \text{ ft-lb})$

(CHECK): Are the ABS sensor installation bolts tightened securely?

YES: Go to step **10H16**.

(NO): Tighten ABS sensor installation bolts securely.

Tightening torque:

 $13 \pm 3 \text{ N·m } (1.3 \pm 0.3 \text{ kg-m}, 9 \pm 2.2 \text{ ft-lb})$

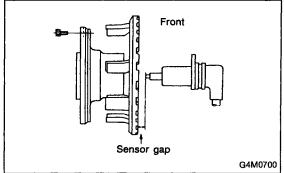


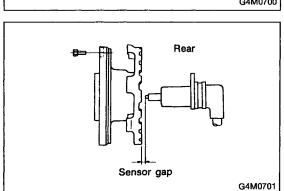
(CHECK): Are the tone wheel installation bolts tightened securely?

YES: Go to step **10H17**.



: Tighten tone wheel installation bolts securely.





Measure tone wheel-to-pole piece gap over entire perimeter of the wheel.



CHECK): Is the gap within the specifications shown in the following table?

Front wheel	Rear wheel
	0.7 — 1.2 mm (0.028 — 0.047 in)

YES : Go to step **10H18**.

(NO) : Adjust the gap.

NOTE:

Adjust the gap using spacers (Part No. 26755AA000). If spacers cannot correct the gap, replace worn sensor or worn tone wheel.

10H18 CHECK HUB RUNOUT.

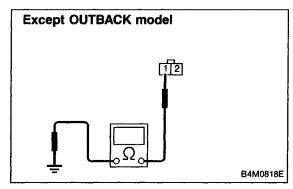
Measure hub runout.

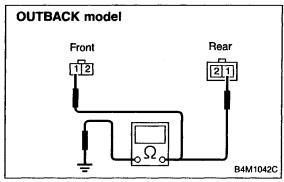
CHECK): Is the runout less than 0.05 mm (0.0020 in)?

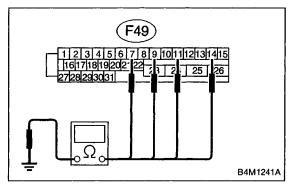
: Go to step **10H19**.

: Repair hub.

10. Diagnostics Chart with Select Monitor







10H19 CHECK GROUND SHORT OF ABS SENSOR.

1) Turn ignition switch to ON.

2) Measure resistance between ABS sensor and chassis ground.

Terminal

Front RH No. 1 — Chassis ground:

Front LH No. 1 — Chassis ground:

Rear RH No. 1 — Chassis ground:

Rear LH No. 1 — Chassis ground:

CHECK): Is the resistance more than 1 M Ω ?

YES: Go to step **10H20**.

(NO): Replace ABS sensor and ABSCM&H/U.

10H20 CHECK GROUND SHORT OF HARNESS.

1) Turn ignition switch to OFF.

2) Connect connector to ABS sensor.

3) Measure resistance between ABSCM&H/U connector terminal and chassis ground.

Connector & terminal

Trouble code 21 / (F49) No. 11 — Chassis ground:

Trouble code 23 / (F49) No. 9 — Chassis ground:

Trouble code 25 / (F49) No. 14 — Chassis ground:

Trouble code 27 / (F49) No. 7 — Chassis ground:

(CHECK): Is the resistance more than 1 M Ω ?

(YES) : Go to step 10H21.

No: Repair harness between ABSCM&H/U and ABS

sensor.

And replace ABSCM&H/U.

10H21 CHECK POOR CONTACT IN CONNECTORS.

CHECK: Is there poor contact in connectors between ABSCM&H/U and ABS sensor? < Ref. to FOREWORD [T3C1].☆10>

Repair connector.

(NO): Go to step 10H22.

10H22 CHECK ABSCM&H/U.

- 1) Connect all connectors.
- 2) Erase the memory.
- 3) Perform inspection mode.
- 4) Read out the trouble code.

CHECK : Is the same trouble code as in the current diagnosis still being output?

(YES): Replace ABSCM&H/U.

(NO) : Go to step 10H23.

10H23 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

CHECK): Are other trouble codes being output?

Proceed with the diagnosis corresponding to the trouble code.

(NO): A temporary poor contact.

NOTE:

Check harness and connectors between ABSCM&H/U and ABS sensor.

D•NEW 22 (FB1) FR.SS SOFT I: TROUBLE CODE 22 FR. SS SOFT

— ABNORMAL FRONT RH ABS SENSOR
(ABNORMAL ABS SENSOR SIGNAL) —

B4M0812

D•NEW 24 (FB1) FL.SS SOFT J: TROUBLE CODE 24 FL. SS SOFT

— ABNORMAL FRONT LH ABS SENSOR

(ABNORMAL ABS SENSOR SIGNAL) —

B4M0949

D•NEW 26 (FB1) RR.SS SOFT K: TROUBLE CODE 26 RR. SS SOFT

— ABNORMAL REAR RH ABS SENSOR
(ABNORMAL ABS SENSOR SIGNAL) —

B4M0950

D•NEW 28 (FB1) RL.SS SOFT

B4M0951

L: TROUBLE CODE 28 RL. SS SOFT

— ABNORMAL REAR LH ABS SENSOR
(ABNORMAL ABS SENSOR SIGNAL) —

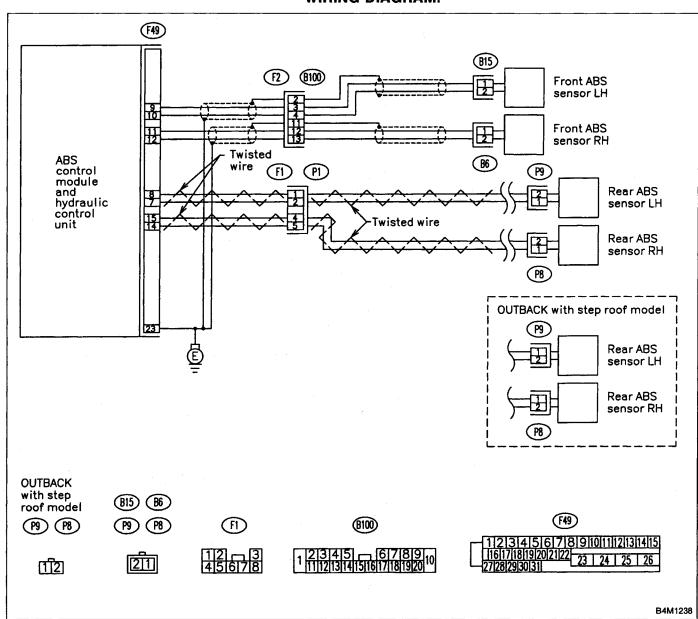
DIAGNOSIS:

- Faulty ABS sensor signal (noise, irregular signal, etc.)
- Faulty harness/connector

TROUBLE SYMPTOM:

ABS does not operate.

WIRING DIAGRAM:



(F05)FR km/h 30

B4M0922

CHECK OUTPUT OF ABS SENSOR USING 10L1 **SELECT MONITOR.**

Read the ABS sensor output corresponding to the faulty system in the select monitor function mode.

NOTE:

The select monitor display shows that the front right wheel is rotating at 30 km/h.

CHECK): Does the speed indicated on the display change in response to the speedometer reading during acceleration/deceleration when the steering wheel is in the straightahead position?

YES): Go to step 10L2. (NO) : Go to step 10L8.

10L2 CHECK POOR CONTACT IN CONNECTORS.

Turn ignition switch to OFF.

(CHECK): Is there poor contact in connectors between ABSCM&H/U and ABS sensor?

(YES): Repair connector. (NO) : Go to step 10L3.

10L3 CHECK SOURCES OF SIGNAL NOISE.

: Is the car telephone or the wireless transmit-(CHECK) ter properly installed?

: Go to step 10L4.

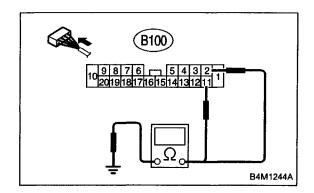
: Properly install the car telephone or the wireless transmitter.

10L4 CHECK SOURCES OF SIGNAL NOISE.

: Are noise sources (such as an antenna) CHECK installed near the sensor harness?

(YES): Install the noise sources apart from the sensor harness.

(NO) : Go to step 10L5.



10L5 CH	IECK SHIELD	CIRCUIT.
---------	-------------	----------

- 1) Turn ignition switch to OFF.
- 2) Connect all connectors.
- 3) Measure resistance between shield connector and chassis ground.

Connector & terminal

Trouble code 22 / (B100) No. 11 — Chassis ground: Trouble code 24 / (B100) No. 2 — Chassis ground: Trouble code 26 / Go to step 10L6.

Trouble code 28 / Go to step 10L6.

CHECK) : Is the resistance less than 0.5 Ω ?

(YES): Go to step 10L6.

No: Repair shield harness.

10L6 CHECK ABSCM&H/U.

- 1) Connect all connectors.
- 2) Erase the memory.
- 3) Perform inspection mode.
- 4) Read out the trouble code.
- CHECK : Is the same trouble code as in the current diagnosis still being output?
- ES : Replace ABSCM&H/U.
- (NO) : Go to step 10L7.

10L7 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

- CHECK): Are other trouble codes being output?
- Proceed with the diagnosis corresponding to the trouble code.
- No : A temporary noise interference.

10L8 CHECK INSTALLATION OF ABS SENSOR.

Tightening torque:

 $32 \pm 10 \text{ N} \cdot \text{m} (3.3 \pm 1.0 \text{ kg-m}, 24 \pm 7 \text{ ft-lb})$

CHECK : Are the ABS sensor installation bolts tightened securely?

YES: Go to step 10L9.

: Tighten ABS sensor installation bolts securely.

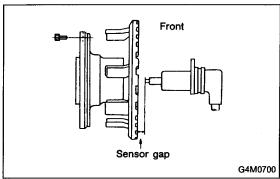
Tightening torque:

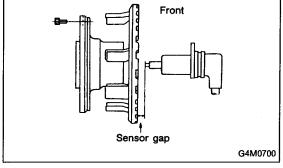
 $13 \pm 3 \text{ N} \cdot \text{m} (1.3 \pm 0.3 \text{ kg-m}, 9 \pm 2.2 \text{ ft-lb})$

(CHECK): Are the tone wheel installation bolts tightened securely?

(YES) : Go to step 10L10.

(NO): Tighten tone wheel installation bolts securely.





CHECK ABS SENSOR GAP. Measure tone wheel to pole piece gap over entire perimeter of the wheel.

CHECK): Is the gap within the specifications shown in the following table?

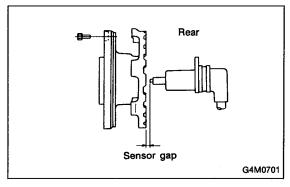
	Front wheel	Rear wheel
Specifications		0.7 — 1.2 mm (0.028 — 0.047 in)

(YES) : Go to step 10L11. (NO) : Adjust the gap.

NOTE:

10L10

Adjust the gap using spacer (Part No. 26755AA000). If spacers cannot correct the gap, replace worn sensor or worn tone wheel.



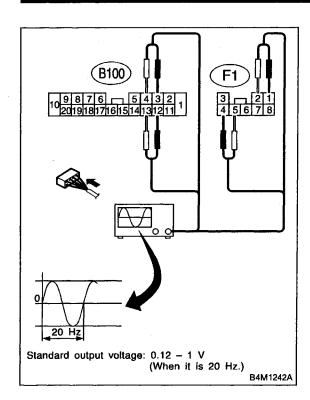
10L11	CHECK OSCILLOSCOPE.			
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CHECK) : Is an oscilloscope available?

: Go to step 10L12. : Go to step 10L13.

10L12	CHECK ABS SENSOR SIGNAL.
-------	--------------------------

- 1) Raise all four wheels of ground.
- 2) Turn ignition switch OFF.
- 3) Connect the oscilloscope to the connector (F1) or connector (B100) in accordance with trouble code.
- 4) Turn ignition switch ON.



5) Rotate wheels and measure voltage at specified frequency.

NOTE:

When this inspection is completed, the ABSCM&H/U sometimes stores the trouble code 29.

Connector & terminal

Trouble code 22 / (B100) No. 12 (+) — No. 13 (-): Trouble code 24 / (B100) No. 3 (+) — No. 4 (-): Trouble code 26 / (F1) No. 4 (+) — No. 5 (-): Trouble code 28 / (F1) No. 1 (+) — No. 2 (-): Specified voltage: $0.12 - 1 \ V$ (When it is 20 Hz.)

CHECK : Is oscilloscope pattern smooth, as shown in figure?

Go to step 10L16.

Go to step 10L13.

10L13 CHECK CONTAMINATION OF ABS SENSOR OR TONE WHEEL.

Remove disc rotor or drum from hub in accordance with trouble code.

: Is the ABS sensor pole piece or the tone wheel contaminated by dirt or other foreign

: Thoroughly remove dirt or other foreign matter.

NO: Go to step **10L14**.

10L14 CHECK DAMAGE OF ABS SENSOR OR TONE WHEEL.

CHECK : Are there broken or damaged in the ABS sensor pole piece or the tone wheel?

: Replace ABS sensor or tone wheel.

(NO) : Go to step 10L15.

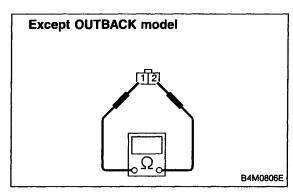
10L15 CHECK HUB RUNOUT.

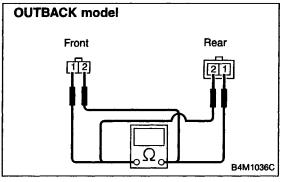
Measure hub runout.

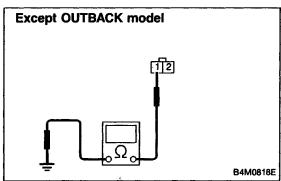
CHECK): Is the runout less than 0.05 mm (0.0020 in)?

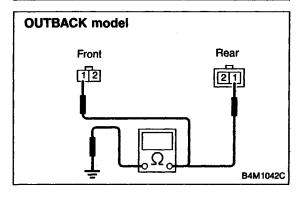
(YES): Go to step 10L16.

No : Repair hub.









10L16 CHECK RESISTANCE OF ABS SENSOR.

- 1) Turn ignition switch OFF.
- 2) Disconnect connector from ABS sensor.
- 3) Measure resistance between ABS sensor connector terminals.

Terminal

Front RH No. 1 — No. 2: Front LH No. 1 — No. 2: Rear RH No. 1 — No. 2: Rear LH No. 1 — No. 2:

(CHECK): Is the resistance between 0.8 and 1.2 k Ω ?

Go to step **10L17**.

Replace ABS sensor.

10L17 CHECK GROUND SHORT OF ABS SENSOR.

Measure resistance between ABS sensor and chassis ground.

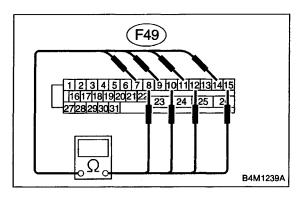
Terminal

Front RH No. 1 — Chassis ground: Front LH No. 1 — Chassis ground: Rear RH No. 1 — Chassis ground: Rear LH No. 1 — Chassis ground:

(CHECK): Is the resistance more than 1 M Ω ?

: Go to step **10L18**.

NO: Replace ABS sensor.



CHECK HARNESS/CONNECTOR BETWEEN 10L18 ABSCM&H/U AND ABS SENSOR.

- 1) Connect connector to ABS sensor.
- 2) Disconnect connector from ABSCM&H/U.
- 3) Measure resistance at ABSCM&H/U connector terminais.

Connector & terminal

Trouble code 22 / (F49) No. 11 — No. 12:

Trouble code 24 / (F49) No. 9 — No. 10:

Trouble code 26 / (F49) No. 14 — No. 15:

Trouble code 28 / (F49) No. 7 — No. 8:



CHECK) : Is the resistance between 0.8 and 1.2 k Ω ?

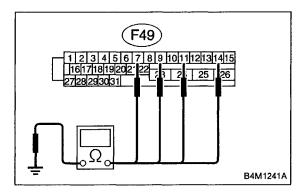


: Go to step **10L19**.



(NO): Repair harness/connector between ABSCM&H/U

and ABS sensor.



10L19 CHECK GROUND SHORT OF HARNESS.

Measure resistance between ABSCM&H/U connector and chassis ground.

Connector & terminal

Trouble code 22 / (F49) No. 11 — Chassis ground:

Trouble code 24 / (F49) No. 9 — Chassis ground:

Trouble code 26 / (F49) No. 14 — Chassis ground:

Trouble code 28 / (F49) No. 7 — Chassis ground:



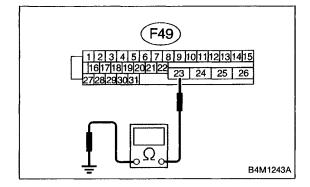
(CHECK) : Is the resistance more than 1 M Ω ?



YES: Go to step **10L20**.

Repair harness/connector between ABSCM&H/U

and ABS sensor.



10L20 CHECK GROUND CIRCUIT OF ABSCM&H/U.

Measure resistance between ABSCM&H/U and chassis ground.

Connector & terminal

(F49) No. 23 — GND:

(CHECK): Is the resistance less than 0.5 Ω ?

YES: Go to step **10L21**.

(NO): Repair ABSCM&H/U ground harness.

10L21 CHECK POOR CONTACT IN CONNECTORS.

CHECK): Is there poor contact in connectors between ABSCM&H/U and ABS sensor? < Ref. to FOREWORD [T3C1].☆10>

(YES): Repair connector. (NO) : Go to step 10L22.

10L22 CHECK SOURCES OF SIGNAL NOISE.

(CHECK): Is the car telephone or the wireless transmitter properly installed?

YES): Go to step **10L23**.

Properly install the car telephone or the wireless

transmitter.

10L23 CHECK SOURCES OF SIGNAL NOISE.

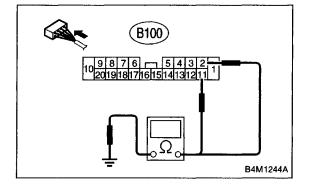
CHECK

: Are noise sources (such as an antenna) installed near the sensor harness?

(YES): Install the noise sources apart from the sensor

harness.

(NO): Go to step 10L24.



10L24 CHECK SHIELD CIRCUIT.

- 1) Connect all connectors.
- 2) Measure resistance between shield connector and chassis ground.

Connector & terminal

Trouble code 22 / (B100) No. 11 — Chassis ground:

Trouble code 24 / (B100) No. 2 — Chassis ground:

Trouble code 26 / Go to step 10L25.

Trouble code 28 / Go to step 10L25.

CHECK): Is the resistance less than 0.5 Ω ? **YES**: Go to step **10L25**.

(NO): Repair shield harness.

10L25 CHECK ABSCM&H/U.

1) Connect all connectors.

2) Erase the memory.

3) Perform inspection mode.

4) Read out the trouble code.

CHECK): Is the same trouble code as in the current

diagnosis still being output?

(YES): Replace ABSCM&H/U.

(NO): Go to step 10L26.

CHECK ANY OTHER TROUBLE CODES 10L26 APPEARANCE.

CHECK: Are other trouble codes being output?

(YES): Proceed with the diagnosis corresponding to the

trouble code.

(NO): A temporary noise interference.

D•NEW 29 (FB1) EITHER.SS SOFT

M: TROUBLE CODE 29 EITHER. SS SOFT — ABNORMAL ABS SENSOR SIGNAL (ANY ONE OF FOUR) —

DIAGNOSIS:

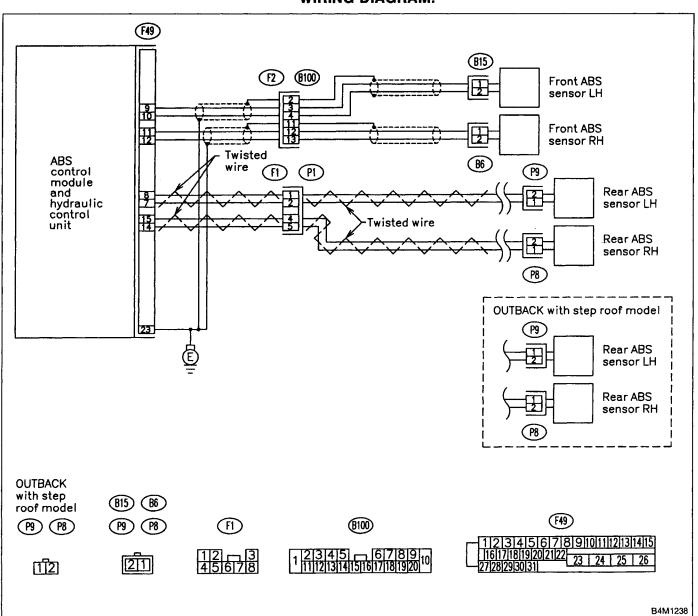
B4M0952

- Faulty ABS sensor signal (noise, irregular signal, etc.)
- Faulty tone wheel
- Wheels turning freely for a long time

TROUBLE SYMPTOM:

ABS does not operate.

WIRING DIAGRAM:



10M1

CHECK IF THE WHEELS HAVE TURNED FREELY FOR A LONG TIME.



: Check if the wheels have been turned freely for more than one minute, such as when the vehicle is jacked-up, under full-lock cornering or when tire is not in contact with road surface.

(YES): The ABS is normal. Erase the trouble code.

NOTE:

When the wheels turn freely for a long time, such as when the vehicle is towed or jacked-up, or when steering wheel is continuously turned all the way, this trouble code may sometimes occur.

(NO): Go to step 10M2.

10M2 **CHECK TIRE SPECIFICATIONS.**

Turn ignition switch to OFF.

CHECK): Are the tire specifications correct?

YES: Go to step **10M3**.

(No): Replace tire.

10M3 CHECK WEAR OF TIRE.

: Is the tire worn excessively?

(YES): Replace tire.

(NO): Go to step 10M4.

10M4 **CHECK TIRE PRESSURE.**

CHECK): Is the tire pressure correct?

YES : Go to step **10M5**. (NO) : Adjust tire pressure.

10M5 CHECK INSTALLATION OF ABS SENSOR.

Tightening torque:

 $32 \pm 10 \text{ N} \cdot \text{m} (3.3 \pm 1.0 \text{ kg-m}, 24 \pm 7 \text{ ft-lb})$

CHECK: Are the ABS sensor installation bolts tightened securely?

YES: Go to step **10M6**.

(NO): Tighten ABS sensor installation bolts securely.

10M6 CHECK INSTALLATION OF TONE WHEEL.

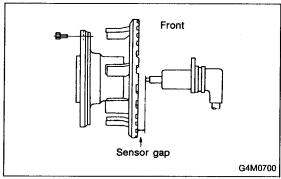
Tightening torque:

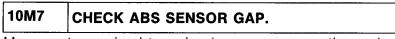
 $13 \pm 3 \text{ N·m} (1.3 \pm 0.3 \text{ kg-m}, 9 \pm 2.2 \text{ ft-lb})$

CHECK : Are the tone wheel installation bolts tightened securely?

YES: Go to step **10M7**.

: Tighten tone wheel installation bolts securely.





Measure tone wheel to pole piece gap over entire perimeter of the wheel.

CHECK : Is the gap within the specifications shown in the following table?

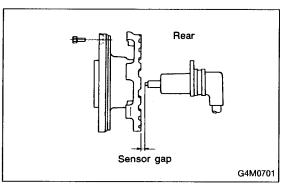
	Front wheel	Rear wheel
Specifications		0.7 — 1.2 mm (0.028 — 0.047 in)

: Go to step 10M8.

No : Adjust the gap.

NOTE:

Adjust the gap using spacer (Part No. 26755AA000). If spacers cannot correct the gap, replace worn sensor or worn tone wheel.



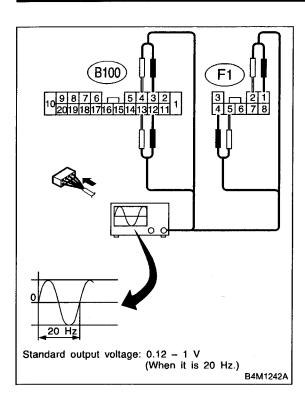
10M8 CHECK OSCILLOSCOPE.

: Is an oscilloscope available?

Go to step 10M9.Go to step 10M10.

10M9 CHECK ABS SENSOR SIGNAL.

- 1) Raise all four wheels of ground.
- 2) Turn ignition switch OFF.
- 3) Connect the oscilloscope to the connector (F1) or connector (B100) in accordance with trouble code.
- 4) Turn ignition switch ON.



5) Rotate wheels and measure voltage at specified frequency.

NOTE:

When this inspection is completed, the ABSCM&H/U sometimes stores the trouble code 29.

Connector & terminal

(B100) No. 12 (+) — No. 13 (-) (Front RH):

(B100) No. 3 (+) — No. 4 (-) (Front LH):

(F1) No. 4 (+) — No. 5 (-) (Rear RH):

(F1) No. 1 (+) — No. 2 (-) (Rear LH):

Specified voltage: 0.12 — 1 V (When it is 20 Hz.)

CHECK : Is oscilloscope pattern smooth, as shown in figure?

(YES): Go to step 8M13.

(NO): Go to step 8M10.

10M10 CHECK CONTAMINATION OF ABS SENSOR OR TONE WHEEL.

Remove disc rotor from hub.

CHECK : Is the ABS sensor pole piece or the tone wheel contaminated by dirt or other foreign matter?

YES: Thoroughly remove dirt or other foreign matter.

(NO): Go to step 10M11.

10M11 CHECK DAMAGE OF ABS SENSOR OR TONE WHEEL.

CHECK : Are there broken or damaged teeth in the ABS sensor pole piece or the tone wheel?

(YES): Replace ABS sensor or tone wheel.

(NO): Go to step 10M12.

10M12 CHECK HUB RUNOUT.

Measure hub runout.

CHECK): Is the runout less than 0.05 mm (0.0020 in)?

YES: Go to step **10M13**.

Repair hub.

10M13 CHECK ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Connect all connectors.
- 3) Erase the memory.
- 4) Perform inspection mode.
- 5) Read out the trouble code.

CHECK : Is the same trouble code as in the current diagnosis still being output?

: Replace ABSCM&H/U.

(NO) : Go to step 10M14.

10M14 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

CHECK): Are other trouble codes being output?

Proceed with the diagnosis corresponding to the

trouble code.

No: A temporary poor contact.

D•NEW 31 (FB1) FR. EV VALVE N: TROUBLE CODE 31 FR. EV VALVE

— ABNORMAL FRONT RH INLET SOLENOID
VALVE —

B4M0953

D•NEW 33 (FB1) FL.EV VALVE O: TROUBLE CODE 33 FL. EV VALVE

— ABNORMAL FRONT LH INLET SOLENOID

VALVE —

B4M0954

D•NEW 35 (FB1) RR. EV VALVE P: TROUBLE CODE 35 RR. EV VALVE

— ABNORMAL REAR RH INLET SOLENOID
VALVE —

B4M0955

D•NEW 37 (FB1) RL.EV VALVE

B4M0956

Q: TROUBLE CODE 37 RL. EV VALVE

— ABNORMAL REAR LH INLET SOLENOID

VALVE —

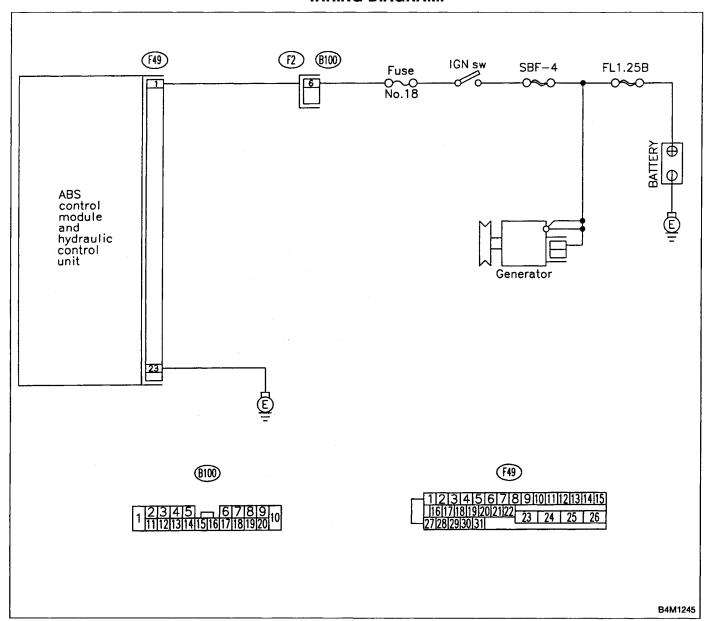
DIAGNOSIS:

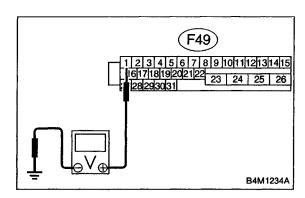
- Faulty harness/connector
- Faulty inlet solenoid valve

TROUBLE SYMPTOM:

• ABS does not operate.

WIRING DIAGRAM:





10Q1 CHECK INPUT VOLTAGE OF ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from ABSCM&H/U.
- 3) Run the engine at idle.
- 4) Measure voltage between ABSCM&H/U connector and chassis ground.

Connector & terminal

(F49) No. 1 (+) — Chassis ground (-):

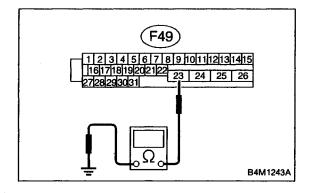


CHECK): Is the voltage between 10 V and 15 V?



YES: Go to step **10Q2**.

(NO): Repair harness connector between battery, ignition switch and ABSCM&H/U.



10Q2 CHECK GROUND CIRCUIT OF ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Measure resistance between ABSCM&H/U connector and chassis ground.

Connector & terminal

(F49) No. 23 — Chassis ground:

(CHECK): Is the resistance less than 0.5 Ω ?

YES: Go to step **10Q3**.

(NO): Repair ABSCM&H/U ground harness.

10Q3

CHECK POOR CONTACT IN CONNECTORS.

CHECK)

: Is there poor contact in connectors between generator, battery and ABSCM&H/U? < Ref. to FOREWORD [T3C1].☆10>

: Repair connector.

: Go to step **10Q4**.

10Q4 CHECK ABSCM&H/U.

1) Connect all connectors.

2) Erase the memory.

3) Perform inspection mode.

4) Read out the trouble code.

CHECK): Is the same trouble code as in the current

diagnosis still being output?

(YES): Replace ABSCM&H/U.

(NO): Go to step 10Q5.

CHECK ANY OTHER TROUBLE CODES 10Q5 APPEARANCE.

CHECK): Are other trouble codes being output?

(YES): Proceed with the diagnosis corresponding to the

trouble code.

(NO): A temporary poor contact.

D•NEW 32 (FB1) FR. AV VALVE R: TROUBLE CODE 32 FR. AV VALVE

— ABNORMAL FRONT RH OUTLET SOLENOID
VALVE —

B4M0958

D•NEW 34 (FB1) FL.AV VALVE S: TROUBLE CODE 34 FL. AV VALVE

— ABNORMAL FRONT LH OUTLET SOLENOID
VALVE —

B4M0959

D•NEW 36 (FB1) RR.AV VALVE T: TROUBLE CODE 36 RR. AV VALVE

— ABNORMAL REAR RH OUTLET SOLENOID

VALVE —

B4M0960

D•NEW 38 (FB1) RL.AV VALVE

B4M096

U: TROUBLE CODE 38 RL. AV VALVE

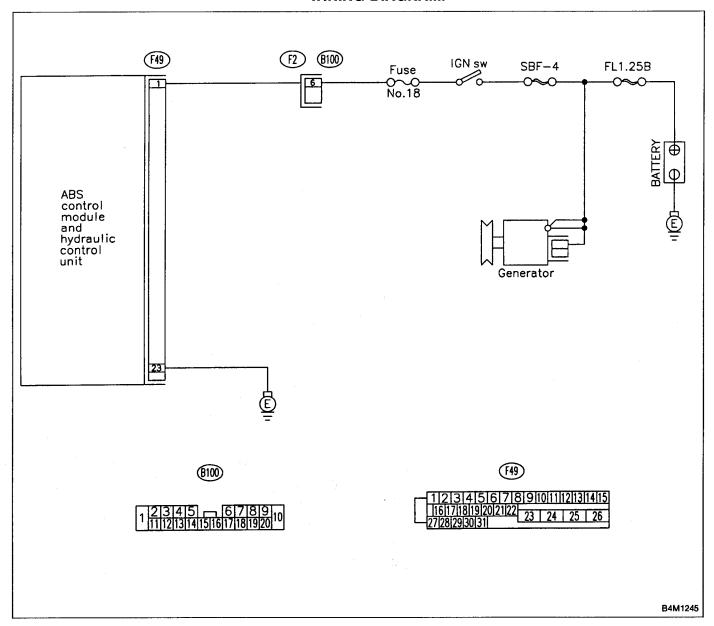
— ABNORMAL REAR LH OUTLET SOLENOID
VALVE —

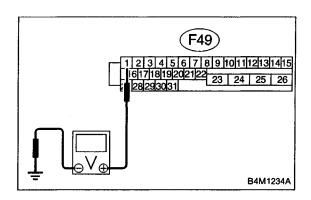
DIAGNOSIS:

- Faulty harness/connector
- Faulty outlet solenoid valve

TROUBLE SYMPTOM:

• ABS does not operate.





10U1 CHECK INPUT VOLTAGE OF ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from ABSCM&H/U.
- 3) Run the engine at idle.
- 4) Measure voltage between ABSCM&H/U connector and chassis ground.

Connector & terminal

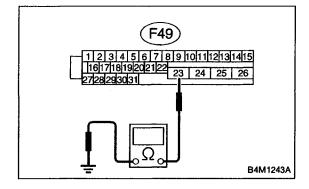
(F49) No. 1 (+) — Chassis ground (-):

(CHECK): Is the voltage between 10 V and 15 V?

YES: Go to step **10U2**.

Repair harness connector between battery, igni-

tion switch and ABSCM&H/U.



10U2 CHECK GROUND CIRCUIT OF ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Measure resistance between ABSCM&H/U connector and chassis ground.

Connector & terminal

(F49) No. 23 — Chassis ground:

(CHECK): Is the resistance less than 0.5 Ω ?

YES: Go to step **10U3**.

No: Repair ABSCM&H/U ground harness.

10U3 CHECK POOR CONTACT IN CONNECTORS.

: Is there poor contact in connectors between generator, battery and ABSCM&H/U? < Ref. to FOREWORD [T3C1].☆10>

Repair connector.

On : Go to step 10U4.

10U4 CHECK ABSCM&H/U.

- 1) Connect all connectors.
- 2) Erase the memory.
- 3) Perform inspection mode.
- 4) Read out the trouble code.

CHECK : Is the same trouble code as in the current diagnosis still being output?

: Replace ABSCM&H/U.

(NO) : Go to step 10U5.

10U5 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

CHECK): Are other trouble codes being output?

: Proceed with the diagnosis corresponding to the trouble code.

NO: A temporary poor contact.

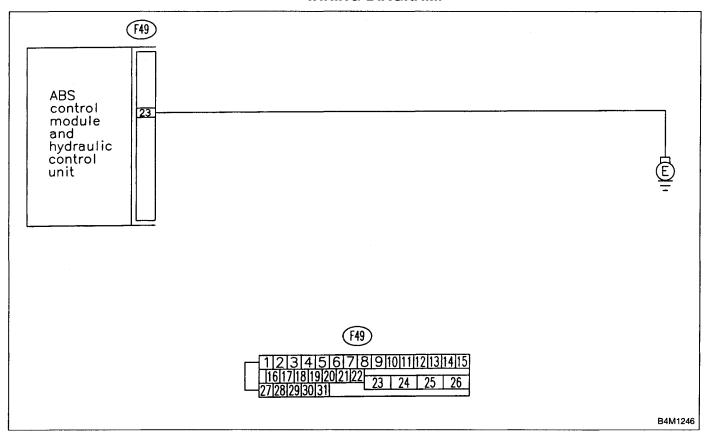
D•NEW 41 (FB1) ECU V: TROUBLE CODE 41 ECU

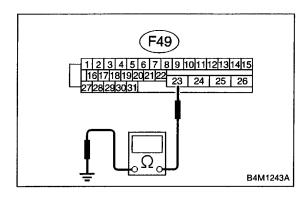
— ABNORMAL ABS CONTROL MODULE —
DIAGNOSIS:

Faulty ABSCM&H/U

TROUBLE SYMPTOM:

ABS does not operate.





10V1 CHECK GROUND CIRCUIT OF ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from ABSCM&H/U.
- 3) Measure resistance between ABSCM&H/U and chassis ground.

Connector & terminal

(F49) No. 23 — Chassis ground:

CHECK): Is the resistance less than 0.5 Ω ?

YES): Go to step **10V2**.

NO: Repair ABSCM&H/U ground harness.

10V2 CHECK POOR CONTACT IN CONNECTORS.

: Is there poor contact in connectors between battery, ignition switch and ABSCM&H/U? <Ref. to FOREWORD [T3C1].☆10>

(YES): Repair connector. (NO) : Go to step 10V3.

10V3 CHECK SOURCES OF SIGNAL NOISE.

CHECK : Is the car telephone or the wireless transmitter properly installed?

YES: Go to step **10V4**.

: Properly install the car telephone or the wireless (NO) transmitter.

10V4 CHECK SOURCES OF SIGNAL NOISE.

: Are noise sources (such as an antenna) CHECK) installed near the sensor harness?

(YES): Install the noise sources apart from the sensor harness.

(NO) : Go to step 10V5.

10V5 CHECK ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Connect all connectors.
- 3) Erase the memory.
- 4) Perform inspection mode.
- 5) Read out the trouble code.

(CHECK): Is the same trouble code as in the current diagnosis still being output?

(YES): Replace ABSCM&H/U.

(NO) : Go to step 10V6.

IIUVO	CHECK ANY OTHER TROUBLE CODES APPEARANCE.
-------	---

CHECK): Are other trouble codes being output?

: Proceed with the diagnosis corresponding to the

trouble code.

(NO): A temporary poor contact.

D•NEW 42 (FB1) LOW VOLTAGE

W: TROUBLE CODE 42 LOW VOLTAGE — SOURCE VOLTAGE IS LOW —

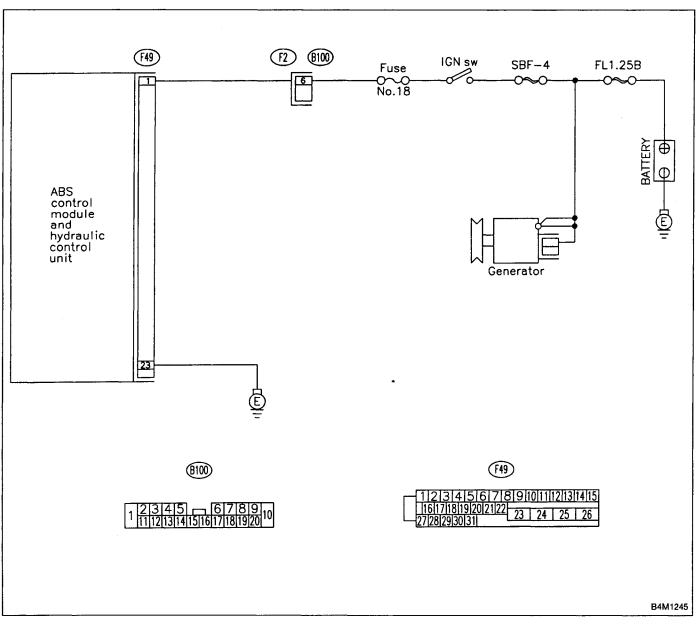
DIAGNOSIS:

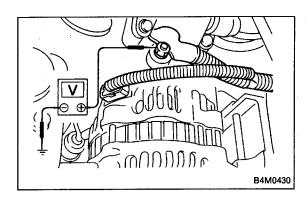
B4M0963

• Power source voltage of the ABSCM&H/U is low.

TROUBLE SYMPTOM:

• ABS does not operate.





10W1 CHECK GENERATOR.

- 1) Start engine.
- 2) Idling after warm-up.
- 3) Measure voltage between generator B terminal and chassis ground.

Terminal

Generator B terminal — Chassis ground:

CHECK : Is the voltage between 10 V and 15 V?

Go to step 10W2.

Repair generator.

10W2 CHECK BATTERY TERMINAL.

Turn ignition switch to OFF.

CHECK : Are the positive and negative battery terminals tightly clamped?

YES: Go to step **10W3**.

: Tighten the clamp of terminal.



- 1) Disconnect connector from ABSCM&H/U.
- 2) Run the engine at idle.
- 3) Measure voltage between ABSCM&H/U connector and chassis ground.

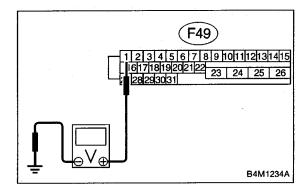
Connector & terminal (F49) No. 1 (+) — Chassis ground (-):

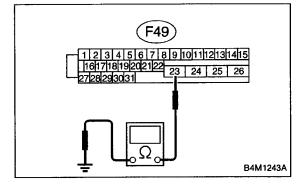
CHECK): Is the voltage between 10 V and 15 V?

YES: Go to step 10W4.

: Repair harness connector between battery, igni-

tion switch and ABSCM&H/U.





10W4 CHECK GROUND CIRCUIT OF ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Measure resistance between ABSCM&H/U connector and chassis ground.

Connector & terminal (F49) No. 23 — Chassis ground:

CHECK : Is the resistance less than 0.5 Ω ?

(FES): Go to step 10W5.

NO: Repair ABSCM&H/U ground harness.

10W5 CHECK POOR CONTACT IN CONNECTORS.

CHECK

: Is there poor contact in connectors between generator, battery and ABSCM&H/U? < Ref. to FOREWORD [T3C1].☆10>

: Repair connector.
: Go to step 10W6.

10W6 CHECK ABSCM&H/U.

1) Connect all connectors.

2) Erase the memory.

3) Perform inspection mode.

4) Read out the trouble code.

CHECK : Is the same trouble code as in the current diagnosis still being output?

: Replace ABSCM&H/U.

(No): Go to step 10W7.

10W7 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

CHECK : Are other trouble codes being output?

Proceed with the diagnosis corresponding to the

trouble code.

: A temporary poor contact.

D·NEW 42 (FB1) HIGH VOLTAGE

X: TROUBLE CODE 42 LOW VOLTAGE — SOURCE VOLTAGE IS HIGH —

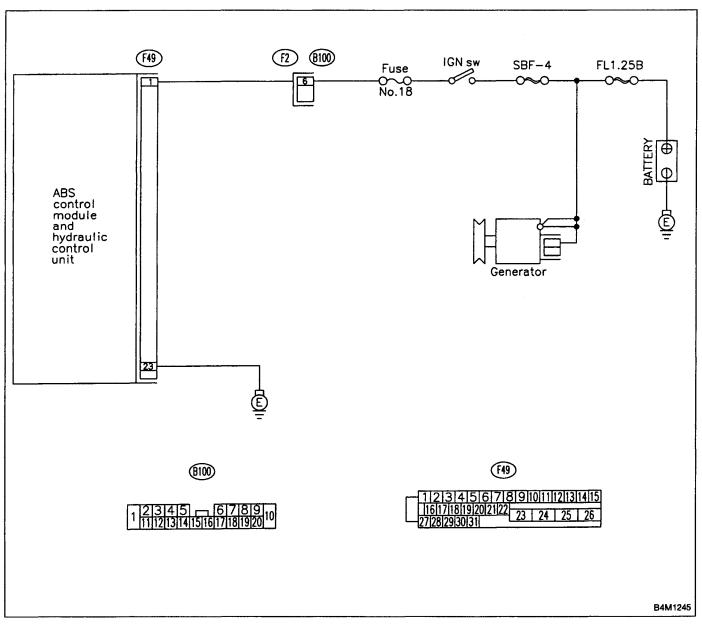
DIAGNOSIS:

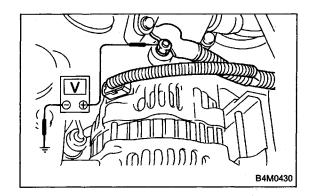
B4M1268

Power source voltage of the ABSCM&H/U is high.

TROUBLE SYMPTOM:

ABS does not operate.





10X1 CHECK GENERATOR.

- 1) Start engine.
- 2) Idling after warm-up.
- 3) Measure voltage between generator B terminal and chassis ground.

Terminal

Generator B terminal — Chassis ground:

CHECK): Is the voltage between 10 V and 17 V?

Go to step **10X2**.

Repair generator.

10X2 CHECK BATTERY TERMINAL.

Turn ignition switch to OFF.

CHECK : Are the positive and negative battery terminals tightly clamped?

YES: Go to step **10X3**.

(NO): Tighten the clamp of terminal.

10X3 CHECK INPUT VOLTAGE OF ABSCM&H/U.

- 1) Disconnect connector from ABSCM&H/U.
- 2) Run the engine at idle.
- 3) Measure voltage between ABSCM&H/U connector and chassis ground.

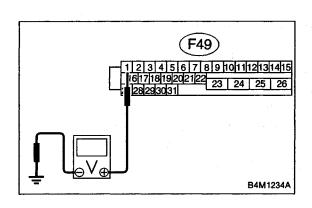
Connector & terminal

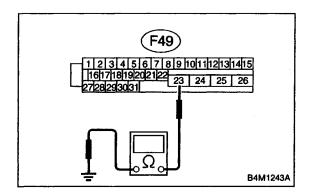
(F49) No. 1 (+) — Chassis ground (-):

(CHECK): Is the voltage between 10 V and 17 V?

YES : Go to step 10X4.

Repair harness connector between battery, ignition switch and ABSCM&H/U.





10X4 CHECK GROUND CIRCUIT OF ABSCM&H/U.

1) Turn ignition switch to OFF.

2) Measure resistance between ABSCM&H/U connector and chassis ground.

Connector & terminal

(F49) No. 23 — Chassis ground:

(CHECK): Is the resistance less than 0.5 Ω ?

YES: Go to step **10X5**.

(NO): Repair ABSCM&H/U ground harness.

10X5 CHECK POOR CONTACT IN CONNECTORS.

: Is there poor contact in connectors between generator, battery and ABSCM&H/U? < Ref. to FOREWORD [T3C1].☆10>

: Repair connector.

(NO): Go to step 10X6.

10X6 CHECK ABSCM&H/U.

1) Connect all connectors.

2) Erase the memory.

3) Perform inspection mode.

4) Read out the trouble code.

CHECK : Is the same trouble code as in the current diagnosis still being output?

: Replace ABSCM&H/U.

(NO): Go to step 10X7.

10X7 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

(CHECK): Are other trouble codes being output?

Proceed with the diagnosis corresponding to the

trouble code.

: A temporary poor contact.

D•NEW 44 (FB1) CCM LINE

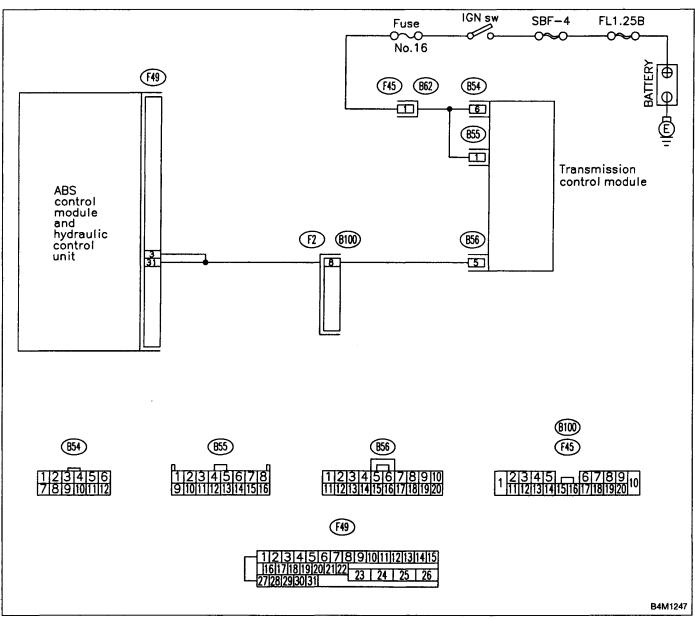
Y: TROUBLE CODE 44 CCM LINE — A COMBINATION OF AT CONTROL ABNORMALS —

DIAGNOSIS:

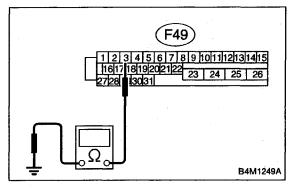
• Combination of AT control faults

TROUBLE SYMPTOM:

ABS does not operate.



1997 (F00) ABS 4WD•AT





- 1) Press [F], [0] and [0] on the select monitor.
- 2) Read the select monitor display.

CHECK : Is an ABSCM&H/U for AT model installed on a MT model?

(VES): Replace ABSCM&H/U.

(NO): Go to step 10Y2.

10Y2 CHECK GROUND SHORT OF HARNESS.

- 1) Turn ignition switch to OFF.
- 2) Disconnect two connectors from TCM.
- 3) Disconnect connector from ABSCM&H/U.
- 4) Measure resistance between ABSCM&H/U connector and chassis ground.

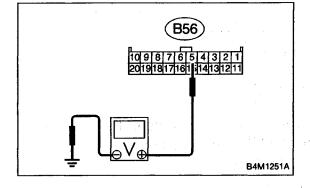
Connector & terminal

(F49) No. 3 — Chassis ground:

CHECK): Is the resistance more than 1 M Ω ?

YES: Go to step **10Y3**.

Repair harness between TCM and ABSCM&H/U.



10Y3 CHECK TCM.

- 1) Connect all connectors to TCM.
- 2) Turn ignition switch to ON.
- 3) Measure voltage between TCM connector terminal and chassis ground.

Connector & terminal

(B55) No. 5 (+) — Chassis ground (-):

CHECK): Is the voltage between 10 V and 15 V?

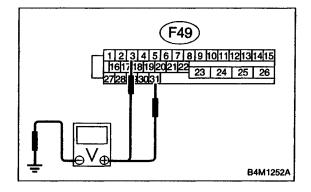
: Go to step **10Y5**.

(NO): Go to step **10Y4**.

10Y4 CHECK AT.

CHECK : Is the AT functioning normally?

(NO): Replace TCM.



10Y5 CHECK OPEN CIRCUIT OF HARNESS.

Measure voltage between ABSCM&H/U connector and chassis ground.

Connector & terminal

(F49) No. 3 (+) — Chassis ground (-): (F49) No. 31 (+) — Chassis ground (-):

CHECK) : Is the voltage more than 10 V?

YES: Go to step **10Y6**.

No : Repair harness/connector between AT control

module and ABSCM&H/U.

10Y6 CHECK POOR CONTACT IN CONNECTORS.

: Is there poor contact in connectors between AT control module and ABSCM&H/U? < Ref. to FOREWORD [T3C1].☆10>

: Repair connector.

No : Go to step 10Y7.

10Y7 CHECK ABSCM&H/U.

- Connect all connectors.
- 2) Erase the memory.
- 3) Perform inspection mode.
- 4) Read out the trouble code.

CHECK : Is the same trouble code as in the current diagnosis still being output?

: Replace ABSCM&H/U.

(NO) : Go to step 10Y8.

10Y8 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

CHECK): Are other trouble codes being output?

Proceed with the diagnosis corresponding to the trouble code.

(NO): A temporary poor contact.

D•NEW 44 (FB1) CCM OPEN

Z: TROUBLE CODE 44 CCM OPEN — A COMBINATION OF AT CONTROL ABNORMALS —

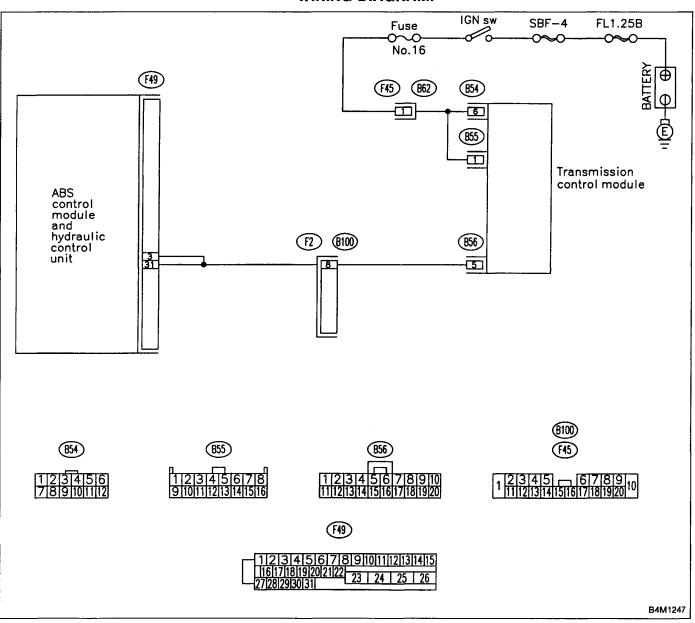
DIAGNOSIS:

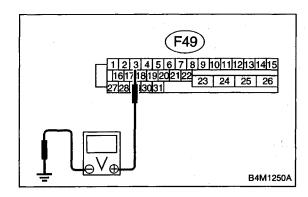
B4M0965

Combination of AT control faults

TROUBLE SYMPTOM:

ABS does not operate.





10Z1 **CHECK BATTERY SHORT OF HARNESS.**

- 1) Turn ignition switch to OFF.
- 2) Disconnect two connectors from AT control module.
- 3) Disconnect connector from ABSCM&H/U.
- 4) Measure voltage between ABSCM&H/U connector and chassis ground.

Connector & terminal

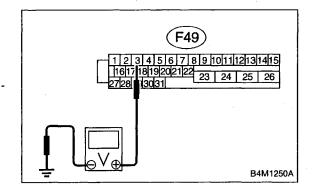
(F49) No. 3 (+) — Chassis ground (-):

CHECK): Is the voltage less than 1 V?

YES: Go to step **10Z2**.

(NO): Repair harness between AT control module and

ABSCM&H/U.



10Z2 **CHECK BATTERY SHORT OF HARNESS.**

- 1) Turn ignition switch to ON.
- 2) Measure voltage between ABSCM&H/U connector and chassis ground.

Connector & terminal

(F49) No. 3 (+) — Chassis ground (-):

CHECK): Is the voltage less than 1 V?

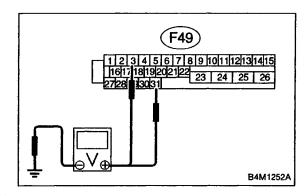
YES: Go to step **10Z3**.

(NO)

: Repair harness between AT control module and

ABSCM&H/U.

10. Diagnostics Chart with Select Monitor



10Z3 CHECK OPEN CIRCUIT OF HARNESS.

- 1) Turn ignition switch to OFF.
- 2) Connect all connectors to TCM.
- 3) Turn ignition switch to ON.
- 4) Measure voltage between ABSCM&H/U connector and chassis ground.

Connector & terminal

(F49) No. 3 (+) — Chassis ground (-):

(F49) No. 31 (+) — Chassis ground (-):

CHECK : Is the voltage between 10 V and 13 V?

(YES) : Go to step 10Z4.

Repair harness/connector between TCM and ABSCM&H/U.

10Z4 CHECK POOR CONTACT IN CONNECTORS.

Turn ignition switch to OFF.

CHECK : Is there poor contact in connectors between AT control module and ABSCM&H/U? < Ref. to FOREWORD [T3C1].☆10>

: Repair connector.

No : Go to step 1025.

10Z5 CHECK ABSCM&H/U.

- 1) Connect all connectors.
- 2) Erase the memory.
- 3) Perform inspection mode.
- 4) Read out the trouble code.
- CHECK: Is the same trouble code as in the current diagnosis still being output?

(YES): Replace ABSCM&H/U.

(No): Go to step 10Z6.

10Z6 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

CHECK): Are other trouble codes being output?

Proceed with the diagnosis corresponding to the trouble code.

(NO): A temporary poor contact.

D•NEW 51 (FB1) V.RELAY

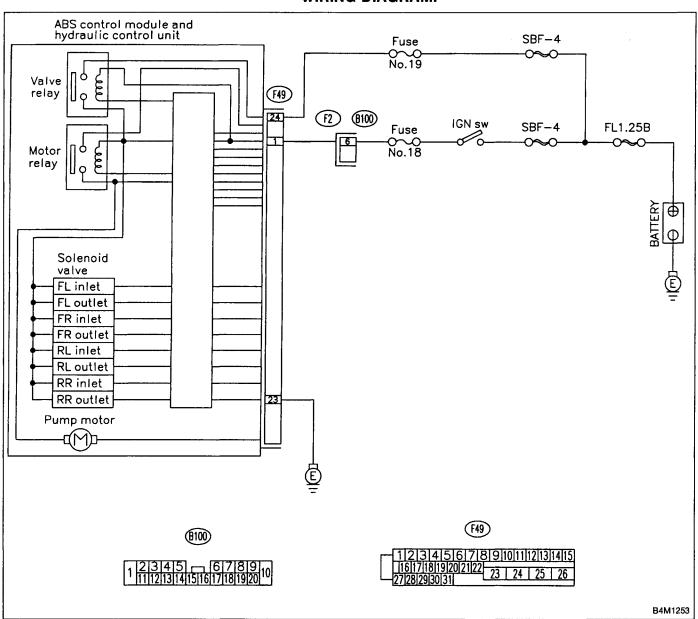
AA: TROUBLE CODE 51 V. RELAY — ABNORMAL VALVE RELAY —

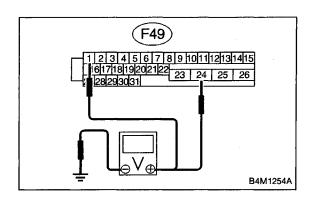
DIAGNOSIS:

Faulty valve relay

TROUBLE SYMPTOM:

ABS does not operate.





10AA1 CHECK INPUT VOLTAGE OF ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from ABSCM&H/U.
- 3) Run the engine at idle.
- 4) Measure voltage between ABSCM&H/U connector and chassis ground.

Connector & terminal

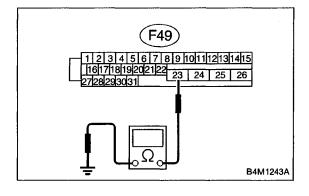
(F49) No. 1 (+) — Chassis ground (-): (F49) No. 24 (+) — Chassis ground (-):

(CHECK): Is the voltage between 10 V and 15 V?

YES: Go to step 10AA2.

: Repair harness connector between battery and NO

ABSCM&H/U.



10AA2 CHECK GROUND CIRCUIT OF ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Measure resistance between ABSCM&H/U connector and chassis ground.

Connector & terminal

(F49) No. 23 — Chassis ground:

(CHECK): Is the resistance less than 0.5 Ω ?

(YES): Go to step 10AA3.

(NO): Repair ABSCM&H/U ground harness.

10AA3 CHECK POOR CONTACT IN CONNECTORS.

CHECK): Is there poor contact in connectors between generator, battery and ABSCM&H/U? < Ref. to FOREWORD [T3C1].☆10>

: Repair connector. (YES) : Go to step **10AA4**.

10AA4 CHECK ABSCM&H/U.

- 1) Connect all connectors.
- 2) Erase the memory.
- 3) Perform inspection mode.
- 4) Read out the trouble code.

GHECK : Is the same trouble code as in the current diagnosis still being output?

: Replace ABSCM&H/U.

No : Go to step 10AA5.

10AA5 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

CHECK : Are other trouble codes being output?

Proceed with the diagnosis corresponding to the trouble code.

No: A temporary poor contact.

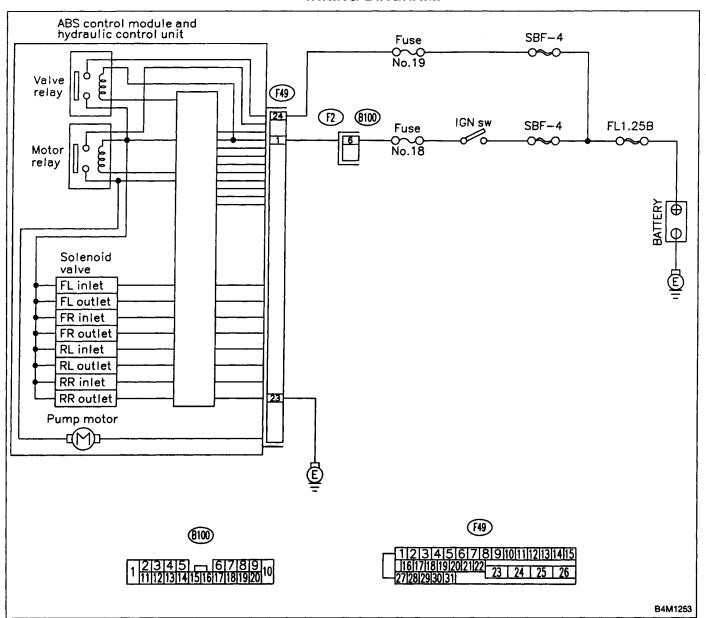
D•NEW 51 (FB1) V.RELAY ON

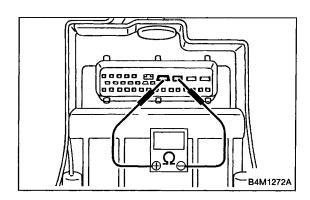
DIAGNOSIS:

• Faulty valve relay

TROUBLE SYMPTOM:

• ABS does not operate.





10AB1 CHECK VALVE RELAY IN ABSCM&H/U.

Measure resistance between ABSCM&H/U terminals.

Terminals

No. 23 (+) — No. 24 (-):

(CHECK) : Is the resistance more than 1 M Ω ?

(YES): Go to step 10AB2. (NO) : Replace ABSCM&H/U.

10AB2 CHECK POOR CONTACT IN CONNECTORS.

CHECK): Is there poor contact in connectors between generator, battery and ABSCM&H/U? < Ref. to FOREWORD [T3C1].☆10>

(YES): Repair connector. (NO) : Go to step 10AB3.

10AB3 CHECK ABSCM&H/U.

1) Connect all connectors.

2) Erase the memory.

3) Perform inspection mode.

4) Read out the trouble code.

CHECK): Is the same trouble code as in the current

diagnosis still being output?

(YES): Replace ABSCM&H/U.

(NO): Go to step 10AB4.

CHECK ANY OTHER TROUBLE CODES 10AB4 APPEARANCE.

CHECK): Are other trouble codes being output?

: Proceed with the diagnosis corresponding to the

trouble code.

(NO): A temporary poor contact.

D•NEW 52 (FB1) M. RELAY OPEN

AC: TROUBLE CODE 52 M. RELAY OPEN — OPEN CIRCUIT OF MOTOR RELAY — DIAGNOSIS:

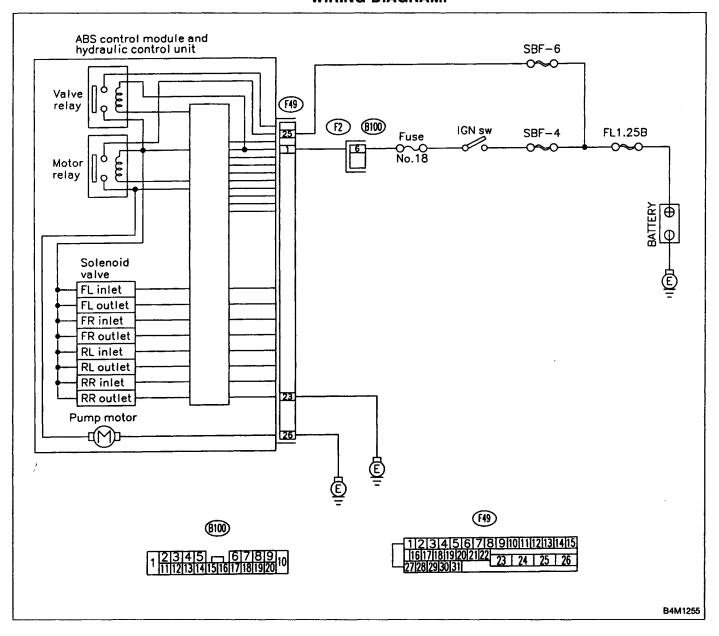
- Faulty motor
- Faulty motor relay
- Faulty harness connector

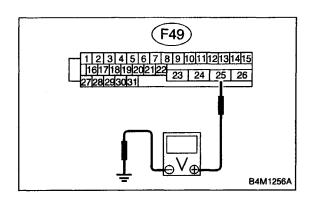
TROUBLE SYMPTOM:

ABS does not operate.

WIRING DIAGRAM:

B4M0969





10AC1 CHECK INPUT VOLTAGE OF ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from ABSCM&H/U.
- 3) Turn ignition switch to ON.
- 4) Measure voltage between ABSCM&H/U connector and chassis ground.

Connector & terminal

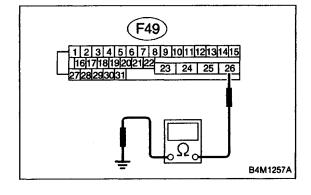
(F49) No. 25 (+) — Chassis ground (-):

CHECK: Is the voltage between 10 V and 13 V?

YES: Go to step 10AC2.

Repair harness/connector between battery and

ABSCM&H/U and check fuse SBF6.



10AC2 CHECK GROUND CIRCUIT OF MOTOR.

- 1) Turn ignition switch to OFF.
- 2) Measure resistance between ABSCM&H/U connector and chassis ground.

Connector & terminal (F49) No. 26 — Chassis ground:

(CHECK): Is the resistance less than 0.5 Ω ?

(YES): Go to step 10AC3.

: Repair ABSCM&H/U ground harness.

10AC3 CHECK MOTOR OPERATION.

Operate the check sequence. < Ref. to 4-4 [W25D1]. >

Use the diagnosis connector to operate the sequence control.

CHECK : Can motor revolution noise (buzz) be heard when carrying out the check sequence?

: Go to step **10AC4**.

NO: Replace ABSCM&H/U.

10AC4 CHECK POOR CONTACT IN CONNECTORS.

Turn ignition switch to OFF.

(CHECK): Is there poor contact in connector between hydraclic unit, relay box and ABSCM&H/U? <Ref. to FOREWORD [T3C1].☆10>

(YES): Repair connector. NO : Go to step 10AC5.

10AC5 CHECK ABSCM&H/U.

1) Connect all connectors.

2) Erase the memory.

3) Perform inspection mode.

4) Read out the trouble code.

CHECK): Is the same trouble code as in the current diagnosis still being output?

(YES): Replace ABSCM&H/U. (NO) : Go to step 10AC6.

CHECK ANY OTHER TROUBLE CODES 10AC6 APPEARANCE.

CHECK): Are other trouble codes being output?

(YES): Proceed with the diagnosis corresponding to the trouble code.

(NO): A temporary poor contact.

D•NEW 52 (FB1) M. RELAY ON

AD: TROUBLE CODE 52 M. RELAY ON — MOTOR RELAY ON FAILURE —

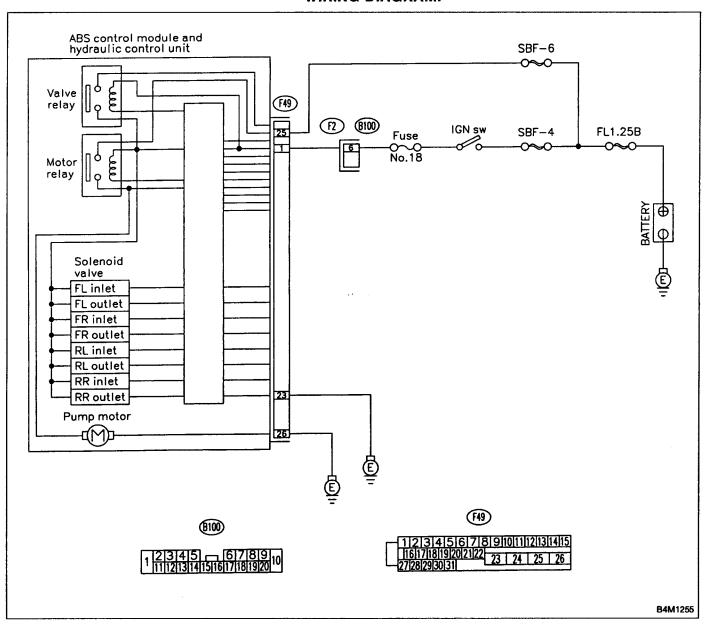
DIAGNOSIS:

B4M0970

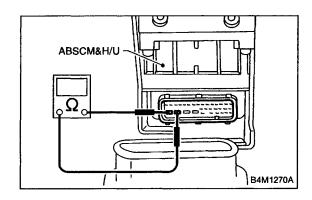
- Faulty motor
- Faulty motor relay
- Faulty harness connector

TROUBLE SYMPTOM:

• ABS does not operate.



10. Diagnostics Chart with Select Monitor



10AD1 CHECK MOTOR RELAY IN ABSCM&H/U.

Measure resistance between ABSCM&H/U terminals.

Terminals

No. 25 — No. 26:

(CHECK): Is the resistance more than 1 M Ω ?

(YES): Go to step 10AD2.

: Replace ABSCM&H/U.

10AD2 CHECK MOTOR OPERATION.

Operate the sequence control. < Ref. to 4-4 [W25D1]. >

CHECK : Can motor revolution noise (buzz) be heard when carrying out the sequence control?

Go to step 10AD3.

: Replace ABSCM&H/U.

10AD3 CHECK POOR CONTACT IN CONNECTORS.

Turn ignition switch to OFF.

: Is there poor contact in connector between hydraulic unit, relay box and ABSCM&H/U? < Ref. to FOREWORD [T3C1].☆10>

: Repair connector.
: Go to step 10AD4.

10AD4 CHECK ABSCM&H/U.

- 1) Connect all connectors.
- 2) Erase the memory.
- 3) Perform inspection mode.
- 4) Read out the trouble code.

CHECK : Is the same trouble code as in the current diagnosis still being output?

: Replace ABSCM&H/U.

: Go to step 10AD5.

10AD5 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

CHECK : Are other trouble codes being output?

: Proceed with the diagnosis corresponding to the trouble code.

(NO): A temporary poor contact.

D•NEW 52 (FB1) MOTOR

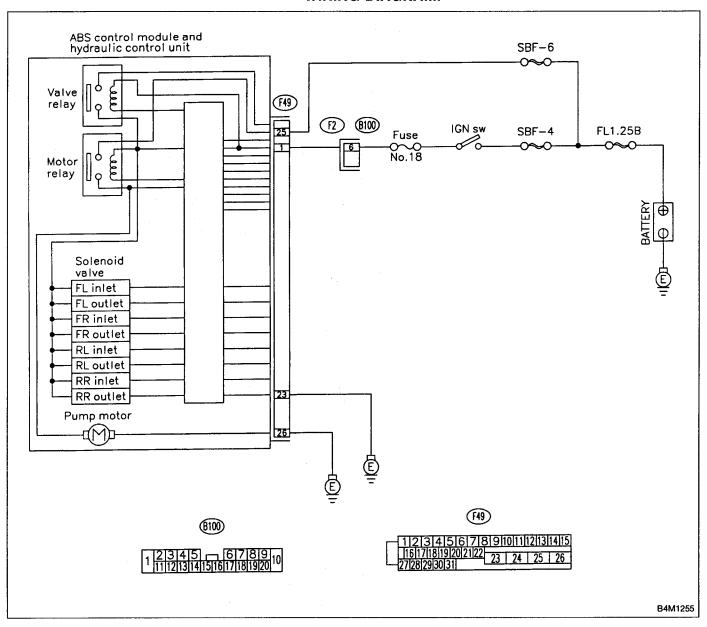
AE: TROUBLE CODE 52 MOTOR — ABNORMAL MOTOR —

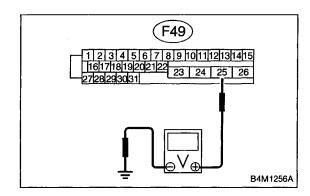
DIAGNOSIS:

- Faulty motor
- Faulty motor relay
- Faulty harness connector

TROUBLE SYMPTOM:

ABS does not operate.





10AE1 CHECK INPUT VOLTAGE OF ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from ABSCM&H/U.
- 3) Turn ignition switch to ON.
- 4) Measure voltage between ABSCM&H/U connector and chassis ground.

Connector & terminal

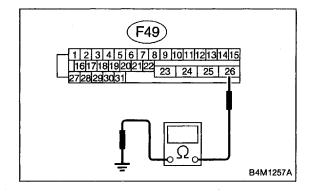
(F49) No. 25 (+) — Chassis ground (-):

CHECK : Is the voltage between 10 V and 13 V?

(YES): Go to step 10AE2.

NO: Repair harness/connector between battery and

ABSCM&H/U and check fuse SBF6.



10AE2 CHECK GROUND CIRCUIT OF MOTOR.

- 1) Turn ignition switch to OFF.
- 2) Measure resistance between ABSCM&H/U connector and chassis ground.

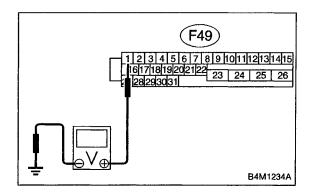
Connector & terminal

(F49) No. 26 — Chassis ground:

(CHECK): Is the resistance less than 0.5 Ω ?

(YES): Go to step 10AE3.

NO: Repair ABSCM&H/U ground harness.



10AE3 CHECK INPUT VOLTAGE OF ABSCM&H/U.

- 1) Run the engine at idle.
- 2) Measure voltage between ABSCM&H/U connector and chassis ground.

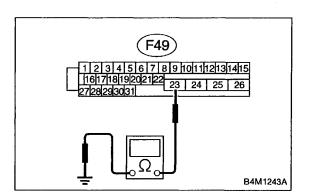
Connector & terminal

(F49) No. 1 (+) — Chassis ground (-):

CHECK : Is the voltage between 10 V and 15 V?

(VES): Go to step 10AE4.

Repair harness connector between battery, ignition switch and ABSCM&H/U.



10AE4 CHECK GROUND CIRCUIT OF ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Measure resistance between ABSCM&H/U connector and chassis ground.

Connector & terminal

(F49) No. 23 — Chassis ground:

(CHECK) : Is the resistance less than 0.5 Ω ?

(YES): Go to step 10AE5.

(NO) : Repair ABSCM&H/U ground harness.

10AE5 CHECK MOTOR OPERATION.

Operate the sequence control. < Ref. to 4-4 [W25D1].>

NOTE:

Use the diagnosis connector to operate the sequence control.

CHECK : Can motor revolution noise (buzz) be heard when carrying out the sequence control?

YES: Go to step **10AE6**.

(NO): Replace hydraulic unit.

10AE6 CHECK POOR CONTACT IN CONNECTORS.

Turn ignition switch to OFF.

CHECK

: Is there poor contact in connector between generator, battery and ABSCM&H/U? < Ref. to FOREWORD [T3C1].☆10>

: Repair connector.

(NO): Go to step 10AE7.

10AE7 CHECK ABSCM&H/U.

1) Connect all connectors.

2) Erase the memory.

3) Perform inspection mode.

4) Read out the trouble code.

CHECK : Is the same trouble code as in the current diagnosis still being output?

(YES): Replace ABSCM&H/U.

Go to step 10AE8.

10AE8 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

CHECK): Are other trouble codes being output?

Proceed with the diagnosis corresponding to the

trouble code.

: A temporary poor contact.

D•NEW 54 (FB1) BLS AF: TROUBLE CODE 54 BLS

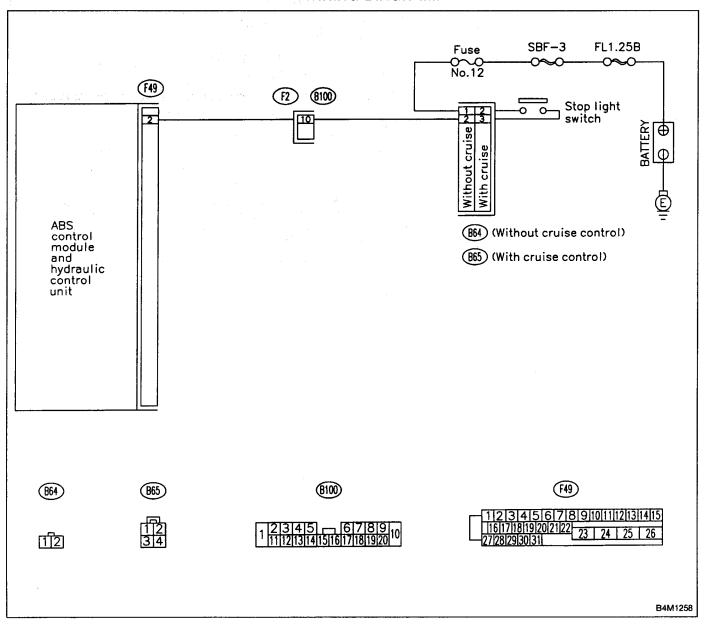
— ABNORMAL STOP LIGHT SWITCH —

DIAGNOSIS:

• Faulty stop light switch

TROUBLE SYMPTOM:

ABS does not operate.



BLS (F09) 0.00 V

B4M0973

B4M1265

10AF1 CHECK OUTPUT OF STOP LIGHT SWITCH USING SELECT MONITOR.

- 1) Press [F], [0] and [9] on the select monitor.
- 2) Depress the brake pedal.
- 3) Read the stop light switch output on the select monitor display.

CHECK : Is the reading indicated on monitor display less than 1.5 V?

Go to step 10AF2.

So to step 10AF3.

BLS (F09) 12.00 V 10AF2 CHECK OUTPUT OF STOP LIGHT SWITCH USING SELECT MONITOR.

- 1) Release the brake pedal.
- 2) Read the stop light switch output on the select monitor display.
- CHECK : Is the reading indicated on monitor display between 10 V and 15 V?

Go to step 10AF5.

Go to step 10AF3.

10AF3

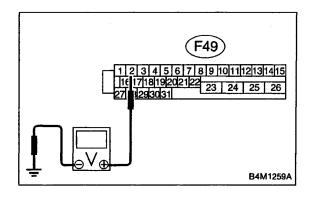
CHECK IF STOP LIGHTS COME ON.

Depress the brake pedal.

YES : Go to step 10AF4.

CHECK : Do stop lights turn on?

: Repair stop lights circuit.



10AF4 CHECK OPEN CIRCUIT IN HARNESS.

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from ABSCM&H/U.
- Depress brake pedal.
- 4) Measure voltage between ABSCM&H/U connector and chassis ground.

Connector & terminal

(F49) No. 2 — Chassis ground:

CHECK): Is the voltage between 10 V and 15 V?

(YES): Go to step 10AF5.

(NO): Repair harness between stop light switch and ABSCM&H/U connector.

10AF5 CHECK POOR CONTACT IN CONNECTORS.

: Is there poor contact in connector between stop light switch and ABSCM&H/U? < Ref. to FOREWORD [T3C1].☆10>

YES: Repair connector. No: Go to step 10AF6.

CHECK

10AF6

CHECK ABSCM&H/U.

- 1) Connect all connectors.
- 2) Erase the memory.
- 3) Perform inspection mode.
- 4) Read out the trouble code.
- CHECK): Is the same trouble code as in the current diagnosis still being output?
- (YES): Replace ABSCM&H/U. NO: Go to step 10AF7.

CHECK ANY OTHER TROUBLE CODES 10AF7 APPEARANCE.

CHECK): Are other trouble codes being output?

YES: Proceed with the diagnosis corresponding to the trouble code.

(NO): A temporary poor contact.

D•NEW 56 (FB1) G SENSOR LINE

AG: TROUBLE CODE 56 G SENSOR LINE — OPEN OR SHORT CIRCUIT OF G SENSOR —

DIAGNOSIS:

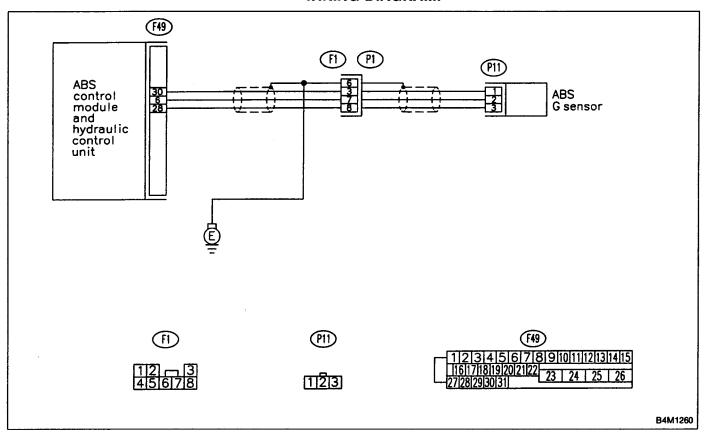
B4M0974

• Faulty G sensor output voltage

TROUBLE SYMPTOM:

• ABS does not operate.

WIRING DIAGRAM:



1997 (F00) ABS 4WD•AT

H4M1117

G-SENS (F10) 2.30 V

B4M0927

10AG1 CHECK SPECIFICATIONS OF ABSCM&H/U USING SELECT MONITOR.

- 1) Press [F], [0] and [0] on the select monitor.
- 2) Read the select monitor display.

CHECK: Is an ABSCM&H/U for 4WD model installed on a FWD model?

: Replace ABSCM&H/U.

So to step 10AG2.

10AG2 CHECK OUTPUT OF G SENSOR USING SELECT MONITOR.

- 1) Press [F], [1] and [0] on the select monitor.
- 2) Read the select monitor display.
- CHECK: Is the indicated reading between 2.1 and 2.5

 V when the G sensor is in horizontal position?
- Go to step 10AG3.

 (NO): Go to step 10AG6.

10AG3 CHECK POOR CONTACT IN CONNECTORS.

: Is there poor contact in connector between ABSCM&H/U and G sensor? < Ref. to FORE-WORD [T3C1].☆10>

: Repair connector.

No : Go to step 10AG4.

10AG4 CHECK ABSCM&H/U.

- 1) Connect all connectors.
- 2) Erase the memory.
- 3) Perform inspection mode.
- 4) Read out the trouble code.
- CHECK : Is the same trouble code as in the current diagnosis still being output?

: Replace ABSCM&H/U.

NO : Go to step 10AG5.

10AG5 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

CHECK : Are other trouble codes being output?

: Proceed with the diagnosis corresponding to the trouble code.

NO : A temporary poor contact.

FR	(FE5) 0 km/h
	B4M0977

10AG6 CHECK FREEZE FRAME DATA.

1) Press [F], [E] and [5] on the select monitor.

2) Read the select monitor display.

CHECK : Is the reading indicated on monitor display 0

Go to step 10AG7.

Go to step 10AG15.

FL	0	(FE6) km/h
		B4M0978

10AG7 CHECK FREEZE FRAME DATA.

1) Press the scroll key so that FE6 appears on the monitor display.

2) Read the select monitor display.

CHECK : Is the reading indicated on monitor display 0 km?

Go to step 10AG8.Go to step 10AG15.

RR	(FE7) 0 km/h
	B4M0979

10AG8 CHECK FREEZE FRAME DATA.

1) Press the scroll key so that FE7 appears on the monitor display.

2) Read the select monitor display.

CHECK : Is the reading indicated on monitor display 0

Go to step 10AG9.Go to step 10AG15.

RL (FE8) 0 km/h

10AG9 CHECK FREEZE FRAME DATA.

1) Press the scroll key so that FE8 appears on the monitor display.

2) Read the select monitor display.

CHECK: Is the reading indicated on monitor display 0 km?

Go to step 10AG10.

Go to step 10AG15.

G-SENS (FE14) 3.70 V

10AG10 CHECK FREEZE FRAME DATA.

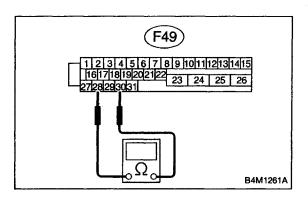
1) Press the scroll key so that FE14 appears on the monitor display.

2) Read the select monitor display.

: Is the reading indicated on monitor display more than 3.65 V?

Go to step 10AG11.Go to step 10AG15.

B4M0980



10AG11 CHECK OPEN CIRCUIT IN G SENSOR OUT-PUT HARNESS AND GROUND HARNESS.

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from ABSCM&H/U.
- 3) Measure resistance between ABSCM&H/U connector terminals.

Connector & terminal (F49) No. 30 — No. 28:

CHECK) : Is the resistance between 4.3 and 4.9 k Ω ?

YES): Go to step 10AG12.

Repair harness/connector between G sensor and ABSCM&H/U.

10AG12 CHECK POOR CONTACT IN CONNECTORS.

: Is there poor contact in connector between ABSCM&H/U and G sensor? < Ref. to FORE-WORD [T3C1].☆10>

: Repair connector.

NO: Go to step 10AG13.

10AG13 CHECK ABSCM&H/U.

- 1) Connect all connectors.
- 2) Erase the memory.
- 3) Perform inspection mode.
- 4) Read out the trouble code.
- CHECK : Is the same trouble code as in the current diagnosis still being output?
- : Replace ABSCM&H/U.

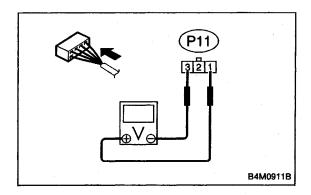
 NO : Go to step 10AG14.

10AG14 CHECK ANY OTHER TROUBLE CODES

CHECK): Are other trouble codes being output?

: Proceed with the diagnosis corresponding to the trouble code.

(ND): A temporary poor contact.



10AG15 CHECK INPUT VOLTAGE OF G SENSOR.

- 1) Turn ignition switch to OFF.
- 2) Remove console box.
- 3) Disconnect G sensor from body. (Do not disconnect connector.)
- 4) Turn ignition switch to ON.
- 5) Measure voltage between G sensor connector terminals.

Connector & terminal

(NO)

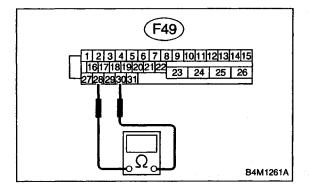
(P11) No. 1 (+) — No. 3 (-):

CHECK): Is the voltage between 4.75 and 5.25 V?

(YES): Go to step 10AG16.

: Repair harness/connector between G sensor and

ABSCM&H/U.



10AG16 CHECK OPEN CIRCUIT IN G SENSOR OUT-PUT HARNESS AND GROUND HARNESS.

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from ABSCM&H/U.
- 3) Measure resistance between ABSCM&H/U connector terminals.

Connector & terminal (F49) No. 30 — No. 28:

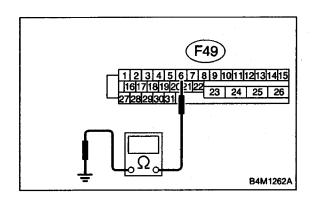
CHECK) : Is the resistance between 4.3 and 4.9 k Ω ?

YES: Go to step **10AG17**.

Repair harness/connector between G sensor and

ABSCM&H/U.

BRAKES [ABS 5.31 TYPE] 10. Diagnostics Chart with Select Monitor



CHECK GROUND SHORT IN G SENSOR 10AG17 **OUTPUT HARNESS.**

- 1) Disconnect connector from G sensor.
- 2) Measure resistance between ABSCM&H/U connector and chassis ground.

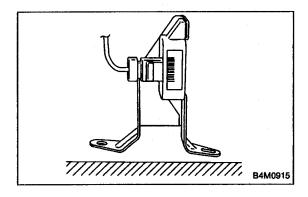
Connector & terminal (F49) No. 6 — Chassis ground:

(CHECK) : Is the resistance more than 1 M Ω ?

YES: Go to step **10AG18**.

(NO): Repair harness between G sensor and

ABSCM&H/U.



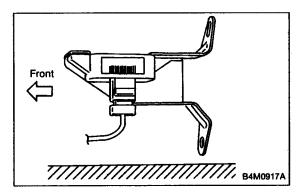
10AG18 CHECK G SENSOR.

- 1) Connect connector to G sensor.
- 2) Connect connector to ABSCM&H/U.
- 3) Turn ignition switch to ON.
- 4) Measure voltage between G sensor connector terminals.

Connector & terminal (P11) No. 2 (+) — No. 1 (-):

CHECK): Is the voltage between 2.1 and 2.5 V when G sensor is horizontal?

YES: Go to step 10AG19. (No): Replace G sensor.



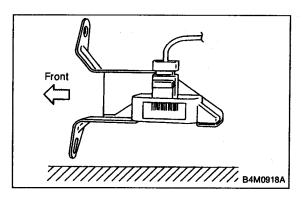
10AG19 CHECK G SENSOR.

Measure voltage between G sensor connector terminals.

Connector & terminal (P11) No. 2 (+) — No. 1 (-):

CHECK): Is the voltage between 3.7 and 4.1 V when G sensor is inclined forwards to 90°?

YES : Go to step 10AG20. (No): Replace G sensor.



10AG20 CHECK G SENSOR.

Measure voltage between G sensor connector terminals.

Connector & terminal

(P11) No. 2 (+) — No. 1 (-):

CHECK : Is the voltage between 0.5 and 0.9 V when G sensor is inclined backwards to 90°?

Go to step 10AG21.

RO : Replace G sensor.

10AG21 CHECK POOR CONTACT IN CONNECTORS.

Turn ignition switch to OFF.

: Is there poor contact in connector between ABSCM&H/U and G sensor? < Ref. to FORE-WORD [T3C1].☆10>

: Repair connector.
: Go to step 10AG22.

10AG22 CHECK ABSCM&H/U.

- 1) Connect all connectors.
- 2) Erase the memory.
- 3) Perform inspection mode.
- 4) Read out the trouble code.
- CHECK : Is the same trouble code as in the current diagnosis still being output?
- : Replace ABSCM&H/U.

 NO : Go to step 10AG23.

10AG23 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

CHECK): Are other trouble codes being output?

Proceed with the diagnosis corresponding to the trouble code.

NO: A temporary poor contact.

D•NEW 56 (FB1) G SENSOR +B AH: TROUBLE CODE 56 G SENSOR +B
— BATTERY SHORT OF G SENSOR —

DIAGNOSIS:

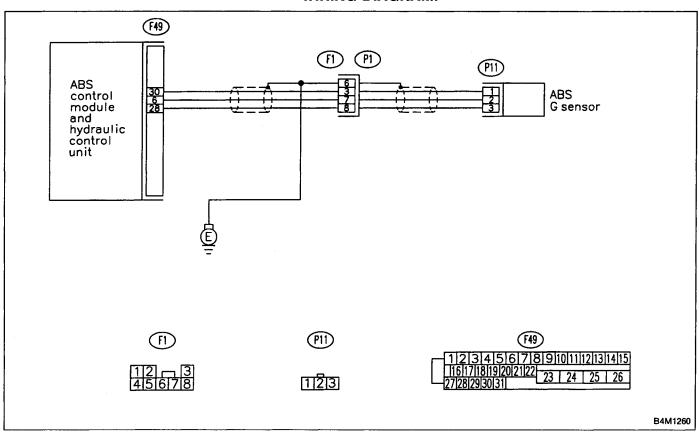
B4M0982

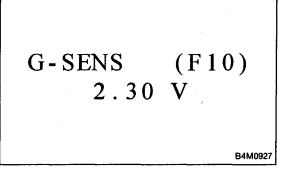
Faulty G sensor output voltage

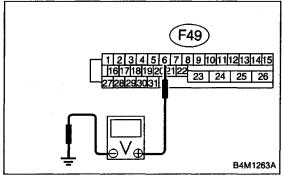
TROUBLE SYMPTOM:

ABS does not operate.

WIRING DIAGRAM:







10AH1 CHECK OUTPUT OF G SENSOR USING SELECT MONITOR.

- 1) Press [F], [1] and [0] on the select monitor.
- 2) Read the select monitor display.

CHECK : Is the indicated reading between 2.1 and 2.5 V when the G sensor is in horizontal position?

: Replace ABSCM&H/U.

NO: Go to step 10AH2.

10AH2 CHECK BATTERY SHORT OF HARNESS.

- 1) Turn ignition switch to OFF.
- 2) Remove console box.
- 3) Disconnect connector from G sensor.
- 4) Disconnect connector from ABSCM&H/U.
- 5) Measure voltage between ABSCM&H/U connector and chassis ground.

Connector & terminal

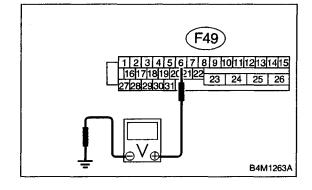
(F49) No. 6 (+) — Chassis ground (-):

CHECK: Is the voltage less than 1 V?

(FES): Go to step 10AH3.

No: Repair harness between G sensor and

ABSCM&H/U.



10AH3 CHECK BATTERY SHORT OF HARNESS.

- 1) Turn ignition switch to ON.
- 2) Measure voltage between ABSCM&H/U connector and chassis ground.

Connector & terminal

(F49) No. 6 (+) — Chassis ground (-):

(CHECK): Is the voltage less than 1 V?

(YES): Go to step 10AH4.

: Repair harness between G sensor and

ABSCM&H/U.

10AH4 CHECK ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Connect all connectors.
- 3) Erase the memory.
- 4) Perform inspection mode.
- 5) Read out the trouble code.

CHECK : Is the same trouble code as in the current diagnosis still being output?

: Replace ABSCM&H/U.

(NO) : Go to step 10AH5.

10AH5 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

CHECK): Are other trouble codes being output?

: Proceed with the diagnosis corresponding to the

trouble code.

(No): A temporary poor contact.

D•NEW 56 (FB1)
G SENSOR Hμ

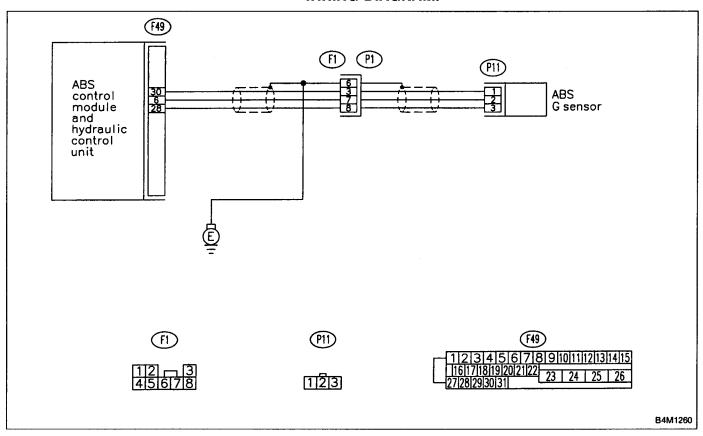
AI: TROUBLE CODE 56 G SENSOR $H\mu$ — ABNORMAL G SENSOR HIGH μ OUTPUT — DIAGNOSIS:

Faulty G sensor output voltage

TROUBLE SYMPTOM:

ABS does not operate.

WIRING DIAGRAM:



G-SENS (F10) 2.30 V

B4M0927

10AI1 CHECK OUTPUT OF G SENSOR USING SELECT MONITOR.

- 1) Press [F], [1] and [0] on the select monitor.
- 2) Read the select monitor display.

CHECK : Is the indicated reading 2.3 ± 0.2 V when the G sensor is in horizontal position?

Go to step 10Al2.

Go to step 10Al6.

10AI2 CHECK POOR CONTACT IN CONNECTORS.

Turn ignition switch to OFF.

: Is there poor contact in connector between ABSCM&H/U and G sensor? < Ref. to FORE-WORD [T3C1].☆10>

Repair connector.

So to step 10Al3.

10Al3 CHECK ABSCM&H/U.

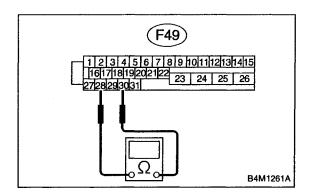
- 1) Connect all connectors.
- 2) Erase the memory.
- 3) Perform inspection mode.
- 4) Read out the trouble code.
- CHECK : Is the same trouble code as in the current diagnosis still being output?
- : Replace ABSCM&H/U.
- : Go to step **10AI4**.

10AI4 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

CHECK): Are other trouble codes being output?

Proceed with the diagnosis corresponding to the trouble code.

No : A temporary poor contact.



CHECK OPEN CIRCUIT IN G SENSOR OUT-10AI5 **PUT HARNESS AND GROUND HARNESS.**

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from ABSCM&H/U.
- 3) Measure resistance between ABSCM&H/U connector terminals.

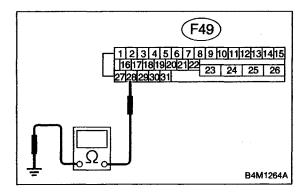
Connector & terminal (F49) No. 30 — No. 28:

(CHECK) : Is the resistance between 4.3 and 4.9 k Ω ?

(YES): Go to step 10Al6.

Repair harness/connector between G sensor and

ABSCM&H/U.



10AI6 **CHECK GROUND SHORT OF HARNESS.**

Measure resistance between ABSCM&H/U connector and chassis ground.

Connector & terminal (F49) No. 28 — Chassis ground:

(CHECK) : Is the resistance more than 1 M Ω ?

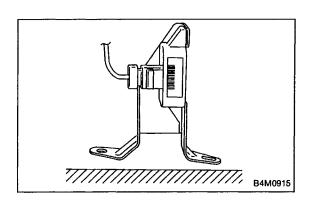
(YES): Go to step 10AI7.

NO

: Repair harness between G sensor and

ABSCM&H/U.

Replace ABSCM&H/U.



10AI7 CHECK G SENSOR.

- 1) Remove console box.
- 2) Remove G sensor from vehicle.
- 3) Connect connector to G sensor.
- 4) Connect connector to ABSCM&H/U.
- 5) Turn ignition switch to ON.
- 6) Measure voltage between G sensor connector terminals.

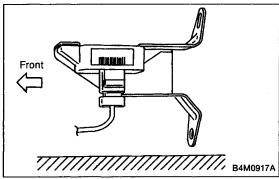
Connector & terminal

(P11) No. 2 (+) — No. 1 (-):

CHECK): Is the voltage between 2.1 and 2.5 V when G

sensor is horizontal? (YES): Go to step 10Al8.

: Replace G sensor.



10AI8 CHECK G SENSOR.

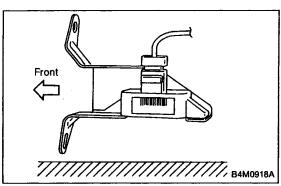
Measure voltage between G sensor connector terminals.

Connector & terminal

(R70) No. 2 (+) — No. 1 (-):

CHECK): Is the voltage between 3.7 and 4.1 V when G sensor is inclined forwards to 90°?

(YES): Go to step 10Al9. (NO): Replace G sensor.



10AI9 CHECK G SENSOR.

Measure voltage between G sensor connector terminals.

Connector & terminal

(R70) No. 2 (+) — No. 1 (-):

CHECK): Is the voltage between 0.5 and 0.9 V when G sensor is inclined backwards to 90°?

(YES): Go to step 10Al10. (NO): Replace G sensor.

10Al10 CHECK ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Connect all connectors.
- 3) Erase the memory.
- 4) Perform inspection mode.
- 5) Read out the trouble code.

CHECK : Is the same trouble code as in the current diagnosis still being output?

: Replace ABSCM&H/U.

NO : Go to step 10Al11.

10Al11 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

CHECK): Are other trouble codes being output?

Proceed with the diagnosis corresponding to the trouble code.

NO: A temporary poor contact.

D•NEW 56 (FB1) G SENSOR STICK

AJ: TROUBLE CODE 56 G SENSOR STICK

— G SENSOR OUTPUT IS STUCK —

DIAGNOSIS:

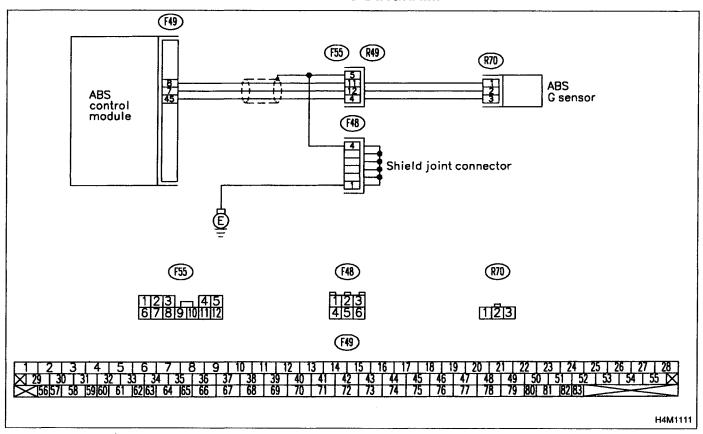
B4M0813

• Faulty G sensor output voltage

TROUBLE SYMPTOM:

ABS does not operate.

WIRING DIAGRAM:



CHECK ALL FOUR WHEELS FOR FREE 10AJ1 TURNING.

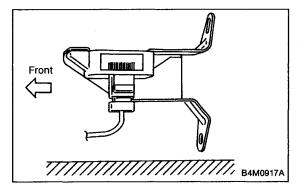
CHECK): Have the wheels been turned freely such as when the vehicle is lifted up, or operated on a rolling road?

: The ABS is normal. Erase the trouble code.

: Go to step **10AJ2**.

G-SENS (F10)2.30 V

B4M0927



CHECK OUTPUT OF G SENSOR USING 10AJ2 **SELECT MONITOR.**

- 1) Press [F], [1] and [0] on the select monitor.
- 2) Read the select monitor display.

CHECK): Is the indicated reading between 2.1 and 2.5 V when the vehicle is in horizontal position?

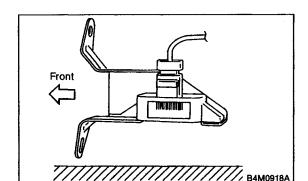
(YES): Go to step 10AJ3. (NO) : Go to step 10AJ8.

CHECK OUTPUT OF G SENSOR USING 10AJ3 **SELECT MONITOR.**

- 1) Turn ignition switch to OFF.
- 2) Remove console box.
- 3) Remove G sensor from vehicle. (Do not disconnect connector.)
- 4) Turn ignition switch to ON.
- 5) Press [F], [1] and [0] on the select monitor.
- 6) Read the select monitor display.

(CHECK): Is the indicated reading between 3.7 and 4.1 V when G sensor is inclined forwards to 90°?

(YES): Go to step 10AJ4. : Replace G sensor.



CHECK OUTPUT OF G SENSOR USING 10AJ4 **SELECT MONITOR.**

Read the select monitor display.

(CHECK): Is the indicated reading between 0.5 and 0.9 V when G sensor is inclined backwards to

90°?

: Go to step **10AJ5**. (YES) : Replace G sensor. NO

10AJ5 CHECK POOR CONTACT IN CONNECTORS.

Turn ignition switch to OFF.

(CHECK): Is there poor contact in connector between ABSCM&H/U and G sensor? < Ref. to FORE-**WORD** [T3C1].☆10>

VES: Repair connector. (NO) : Go to step 10AJ6.

10AJ6 CHECK ABSCM&H/U.

- 1) Connect all connectors.
- 2) Erase the memory.
- 3) Perform inspection mode.
- Read out the trouble code.

(CHECK): Is the same trouble code as in the current diagnosis still being output?

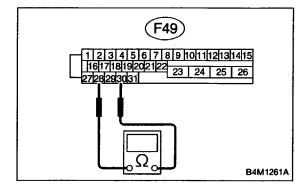
(YES): Replace ABSCM&H/U. (No): Go to step 10AJ7.

CHECK ANY OTHER TROUBLE CODES 10AJ7 APPEARANCE.

CHECK): Are other trouble codes being output?

YES: Proceed with the diagnosis corresponding to the trouble code.

(NO): A temporary poor contact.



CHECK OPEN CIRCUIT IN G SENSOR OUT-10AJ8 **PUT HARNESS AND GROUND HARNESS.**

- 1) Turn ignition switch to OFF.
- Disconnect connector from ABSCM&H/U.
- 3) Measure resistance between ABSCM&H/U connector terminals.

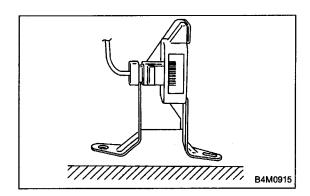
Connector & terminal (F49) No. 30 — No. 28:

CHECK): Is the resistance between 4.3 and 4.9 k Ω ?

(YES): Go to step 10AJ9.

: Repair harness/connector between G sensor and ABSCM&H/U.

NO)



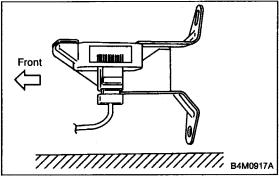
- 1) Remove console box.
- 2) Remove G sensor from vehicle.
- 3) Connect connector to G sensor.
- 4) Connect connector to ABSCM&H/U.
- 5) Turn ignition switch to ON.
- 6) Measure voltage between G sensor connector terminals.

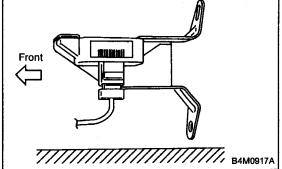
Connector & terminal

(P11) No. 2 (+) — No. 1 (-):

CHECK): Is the voltage between 2.1 and 2.5 V when G sensor is horizontal?

: Go to step **10AJ10**. : Replace G sensor.





Front

10AJ10 CHECK G SENSOR.

Measure voltage between G sensor connector terminals.

Connector & terminal

(P11) No. 2 (+) — No. 1 (-):

(CHECK): Is the voltage between 3.7 and 4.1 V when G sensor is inclined forwards to 90°?

YES : Go to step **10AJ11**. (NO): Replace G sensor.

10AJ11 CHECK G SENSOR.

Measure voltage between G sensor connector terminals.

Connector & terminal

(P11) No. 2 (+) --- No. 1 (-):

CHECK): Is the voltage between 0.5 and 0.9 V when G sensor is inclined backwards to 90°?

: Go to step **10AJ12**. (YES) : Replace G sensor. (NO)

10AJ12 CHECK ABSCM&H/U.

- 1) Turn ignition switch to OFF.
- 2) Connect all connectors.
- 3) Erase the memory.
- 4) Perform inspection mode.
- 5) Read out the trouble code.

CHECK : Is the same trouble code as in the current diagnosis still being output?

(YES): Replace ABSCM&H/U.

No : Go to step 10AJ13.

10AJ13 CHECK ANY OTHER TROUBLE CODES APPEARANCE.

CHECK): Are other trouble codes being output?

Proceed with the diagnosis corresponding to the

trouble code.

No : A temporary poor contact.