

# **13.Diagnostics Chart with Subaru Select Monitor** A: COMMUNICATION FOR INITIALIZING IMPOSSIBLE

**DIAGNOSIS:** • Faulty harness connector

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TROUBLE SYMPTOM:

• ABS warning light remains on. **WIRING DIAGRAM:** 







	Step	Value	Yes	No
1	CHECK IGNITION SWITCH. Is ignition switch to ON?	Ignition switch is to ON.	Go to step 2.	Turn ignition switch to ON, and select ABS mode using the select monitor.
2	<ul> <li>CHECK BATTERY.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Measure battery voltage. Does the measured value exceed the specified value?</li> </ul>	11 V	Go to step 3.	Charge or replace battery.
3	CHECK BATTERY TERMINAL. Is there poor contact at battery terminal?	There is no poor contact.	Go to step 4.	Repair or tighten battery terminal.
4	<ul> <li>CHECK COMMUNICATION OF SELECT MONITOR.</li> <li>1) Turn ignition switch to ON.</li> <li>2) Using the select monitor, check whether communication to other systems can be executed normally. Are the name and year of the system dis- played on the select monitor?</li> </ul>	Name and year of the system are displayed.	Go to step 7.	Go to step <b>5</b> .
5	<ul> <li>CHECK COMMUNICATION OF SELECT MONITOR.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect ABSCM&amp;H/U connector.</li> <li>3) Check whether communication to other systems can be executed normally. Are the name and year of the system dis- played on the select monitor?</li> </ul>	Name and year of the system are displayed.	Go to step <b>7</b> .	Go to step <b>6</b> .
6	<ul> <li>CHECK HARNESS CONNECTOR BETWEEN EACH CONTROL MODULE AND DATA LINK CONNECTOR.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect ABSCM&amp;H/U, cruise control module and immobilizer control module connectors.</li> <li>3) Measure resistance between data link con- nector and chassis ground.</li> <li>Connector &amp; terminal (B40) No. 5 — Chassis ground: (B40) No. 4 — Chassis ground: Does the measured value exceed the spec- ified value?</li> </ul>	1 ΜΩ	Go to step <b>7</b> .	Repair harness and connector between each control module and data link con- nector.
7	<ul> <li>CHECK OUTPUT SIGNAL FOR ABSCM&amp;H/U.</li> <li>1) Turn ignition switch to ON.</li> <li>2) Measure voltage between data link connector and chassis ground.</li> <li>Connector &amp; terminal <ul> <li>(B40) No. 5 (+) — Chassis ground (-):</li> <li>(B40) No. 4 (+) — Chassis ground (-):</li> </ul> </li> <li>Does the measured value exceed the specified value?</li> </ul>	1 V	Repair harness and connector between each control module and data link con- nector.	Go to step 8.

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	Step	Value	Yes	No
8	CHECK HARNESS/CONNECTOR BETWEEN ABSCM&H/U AND DATA LINK CONNEC- TOR. Measure resistance between ABSCM&H/U connector and data link connector. Connector & terminal (F49) No. 20 — (B40) No. 5: (F49) No. 5 — (B40) No. 4: Is the measured value less than the specified value?	0.5 Ω	Repair harness and connector between ABSCM&H/U and data link connec- tor.	Go to step <b>9</b> .
9	CHECK INSTALLATION OF ABSCM&H/U CONNECTOR. Turn ignition switch to OFF. Is ABSCM&H/U connector inserted into ABSCM&H/U until the clamp locks onto it?	ABSCM&HU connector inserted securely.	Go to step <b>10</b> .	Insert ABSCM&H/ U connector into ABSCM&H/U.
10	<ul> <li>CHECK POWER SUPPLY CIRCUIT.</li> <li>1) Turn ignition switch to ON (engine OFF).</li> <li>2) Measure ignition power supply voltage between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal (F49) No. 1 (+) — Chassis ground (-): Does the measured value exceed the spec- ified value?</li> </ul>	10 V	Go to step 11.	Repair open circuit in harness between ABSCM&H/U and battery.
11	<ul> <li>CHECK HARNESS CONNECTOR BETWEEN ABSCM&amp;H/U AND CHASSIS GROUND.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect connector from ABSCM&amp;H/U and transmission.</li> <li>3) Measure resistance of harness between ABSCM&amp;H/U and chassis ground.</li> <li>Connector &amp; terminal (F49) No. 23 — Chassis ground: Is the measured value less than the speci- fied value?</li> </ul>	1 Ω	Go to step <b>12</b> .	Repair open circuit in harness between ABSCM&H/U and inhibitor side con- nector, and poor contact in cou- pling connector.
12	CHECK POOR CONTACT IN CONNECTORS. Is there poor contact in control module power supply, ground line and data link connector?	There is no poor contact.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>	Repair connector.

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### DIAGNOSTICS CHART WITH SUBARU SELECT MONITOR ABS (DIAGNOSTICS)

MEMO:

Vehicle-id: SIE-id::A:Communication for Initializing Impossible







### **B: NO TROUBLE CODE**

### **DIAGNOSIS:**

• ABS warning light circuit is shorted. **TROUBLE SYMPTOM:** 

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

NOTE:

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





Step	Value	Yes	No
1 CHECK WIRING HARNESS.	ABS warning light does not	Go to step 2.	Repair front wiring
<ol> <li>Turn ignition switch to OFF.</li> </ol>	turn on.		harness.
<ol> <li>Disconnect connector (F45) from connector (B62).</li> </ol>			
<ol> <li>Turn ignition switch to ON.</li> <li>Does the ABS warning light turn on?</li> </ol>			

### Vehicle-id: SIE-id::B:No Trouble Code





	Step	Value	Yes	No
2	<ul> <li>CHECK PROJECTION AT ABSCM&amp;H/U.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect connector from ABSCM&amp;H/U.</li> <li>3) Check for broken projection at the ABSCM&amp;H/U terminal. Is there any damage on ABSCM&amp;HU terminal?</li> </ul>	There is no damage on termi- nal.	Go to step 3.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
3	CHECK ABSCM&H/U. Measure resistance between ABSCM&H/U ter- minals. <i>Terminals</i> <i>No. 22 — No. 23:</i> Does the measured value exceed the specified value?	1 ΜΩ	Go to step 4.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
4	CHECK WIRING HARNESS. Measure resistance between connector (F45) and chassis ground. Connector & terminal (F45) No. 8 — Chassis ground: Is the measured value less than the specified value?	0.5 Ω	Go to step <b>5</b> .	Repair harness.
5	<ul> <li>CHECK WIRING HARNESS.</li> <li>1) Connect connector to ABSCM&amp;H/U.</li> <li>2) Measure resistance between connector (F45) and chassis ground.</li> <li>Connector &amp; terminal (F45) No. 8 — Chassis ground: Does the measured value exceed the specified value?</li> </ul>	1 ΜΩ	Go to step <b>6</b> .	Repair harness.
6	CHECK POOR CONTACT IN ABSCM&H/U CONNECTOR. Is there poor contact in ABSCM&H/U connec- tor?	There is no poor contact.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>	Repair connector.

Vehicle-id: SIE-id::B:No Trouble Code

**ABS-84** 

ABS (DIAGNOSTICS)

# C: DTC 21 OPEN OR SHORT CIRCUIT IN FRONT RIGHT ABS SENSOR CIRCUIT

NOTE:

For the diagnostic procedure, refer to DTC 27. <Ref. to ABS-86, DTC 27 OPEN OR SHORT CIRCUIT IN REAR LEFT ABS SENSOR CIRCUIT, Diagnostics Chart with Subaru Select Monitor.>

### D: DTC 23 OPEN OR SHORT CIRCUIT IN FRONT LEFT ABS SENSOR CIRCUIT NOTE:

For the diagnostic procedure, refer to DTC 27. <Ref. to ABS-86, DTC 27 OPEN OR SHORT CIRCUIT IN REAR LEFT ABS SENSOR CIRCUIT, Diagnostics Chart with Subaru Select Monitor.>

### E: DTC 25 OPEN OR SHORT CIRCUIT IN REAR RIGHT ABS SENSOR CIRCUIT

#### NOTE:

For the diagnostic procedure, refer to DTC 27. <Ref. to ABS-86, DTC 27 OPEN OR SHORT CIRCUIT IN REAR LEFT ABS SENSOR CIRCUIT, Diagnostics Chart with Subaru Select Monitor.>





ABS (DIAGNOSTICS)

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# F: DTC 27 OPEN OR SHORT CIRCUIT IN REAR LEFT ABS SENSOR CIRCUIT DIAGNOSIS:

• Faulty ABS sensor (Broken wire, input voltage too high)

Faulty harness connector

TROUBLE SYMPTOM:

• ABS does not operate.

WIRING DIAGRAM:



ABS-86 ABS-86 Vehicle-id: SIE-id::F:DTC 27 Open or Short Circuit in Rear Left ABS Sensor Circuit ~ ABS00293



	Step	Value	Yes	No
1	<ul> <li>CHECK OUTPUT OF ABS SENSOR USING SELECT MONITOR.</li> <li>1) Select "Current data display &amp; Save" on the select monitor.</li> <li>2) Read the ABS sensor output corresponding to the faulty system in the select monitor data display mode. 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?</li> </ul>	Change as same.	Go to step 2.	Go to step <b>8</b> .
2	CHECK INSTALLATION OF ABS SENSOR. Are the ABS sensor installation bolts tightened with the specified torque?	32±10 N·m (3.3±1.0 kgf-m, 24±7 ft-lb)	Go to step 3.	Tighten ABS sen- sor installation bolts securely.
3	CHECK ABS SENSOR GAP. Measure tone wheel to ABS sensor piece gap over entire perimeter of the wheel. Is the measured value within the specified range?	Front wheel 0.3 — 0.8 mm (0.012 — 0.031 in) and Rear wheel 0.44 — 0.94 mm (0.0173 — 0.0370 in)	Go to step 4.	Adjust the gap. NOTE: Adjust the gap us ing spacers (Par No. 26755AA000) If spacers canno correct the gap, re place worn senso or worn tone wheel.
4	CHECK TONE WHEEL RUNOUT. Measure tone wheel runout. Is the measured value less than the specified value?	0.05 mm (0.0020 in)	Go to step <b>5</b> .	Replace tone wheel. Front: <ref. abs-19,<br="" to="">Front Tone Wheel.&gt; Rear: <ref. abs-20,<br="" to="">Rear Tone Wheel.&gt;</ref.></ref.>
5	CHECK POOR CONTACT IN CONNECTORS. Turn ignition switch to OFF. Is there poor contact in connectors between ABSCM&H/U and ABS sensor?	There is no poor contact.	Go to step 6.	Repair connector.
6	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step <b>7</b> .	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
7	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact. NOTE: Check harness and connectors between AB- SCM&H/U and ABS sensor.	Proceed with the diagnosis corre- sponding to the DTC.

Vehicle-id: SIE-id::F:DTC 27 Open or Short Circuit in Rear Left ABS Sensor Circuit ~



	Step	Value	Yes	No
8	<ul> <li>CHECK ABS SENSOR.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect connector from ABS sensor.</li> <li>3) Measure resistance of ABS sensor connector terminals.</li> <li>Terminal <ul> <li>Front RH No. 1 — No. 2:</li> <li>Front LH No. 1 — No. 2:</li> <li>Rear RH No. 1 — No. 2:</li> <li>Rear LH No. 1 — No. 2:</li> <li>Is the measured value within the specified range?</li> </ul> </li> </ul>	1 - 1.5 kΩ	Go to step <b>9.</b>	Replace ABS sen- sor. Front: <ref. to ABS-12, Front ABS Sensor.&gt; Rear: <ref. to<br="">ABS-15, Rear ABS Sensor.&gt;</ref.></ref. 
9	<ul> <li>CHECK BATTERY SHORT OF ABS SENSOR.</li> <li>1) Disconnect connector from ABSCM&amp;H/U.</li> <li>2) Measure voltage between ABS sensor and chassis ground.</li> <li>Terminal</li> <li>Front RH No. 1 (+) — Chassis ground (-):</li> <li>Front LH No. 1 (+) — Chassis ground (-):</li> <li>Rear RH No. 1 (+) — Chassis ground (-):</li> <li>Rear LH No. 1 (+) — Chassis ground (-):</li> <li>Is the measured value less than the specified value?</li> </ul>	1 V	Go to step <b>10</b> .	Replace ABS sen- sor. Front: <ref. to ABS-12, Front ABS Sensor.&gt; Rear: <ref. to<br="">ABS-15, Rear ABS Sensor.&gt;</ref.></ref. 
10	<ul> <li>CHECK BATTERY SHORT OF ABS SENSOR.</li> <li>1) Turn ignition switch to ON.</li> <li>2) Measure voltage between ABS sensor and chassis ground.</li> <li>Terminal <ul> <li>Front RH No. 1 (+) — Chassis ground (-):</li> <li>Front LH No. 1 (+) — Chassis ground (-):</li> <li>Rear RH No. 1 (+) — Chassis ground (-):</li> <li>Rear LH No. 1 (+) — Chassis ground (-):</li> <li>Is the measured value less than the specified value?</li> </ul> </li> </ul>	1 V	Go to step 11.	Replace ABS sen- sor. Front: <ref. to ABS-12, Front ABS Sensor.&gt; Rear: <ref. to<br="">ABS-15, Rear ABS Sensor.&gt;</ref.></ref. 
11	<ul> <li>CHECK HARNESS/CONNECTOR BETWEEN ABSCM&amp;H/U AND ABS SENSOR.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Connect connector to ABS sensor.</li> <li>3) Measure resistance between ABSCM&amp;H/U connector terminals.</li> <li>Connector &amp; terminal DTC 21 / (F49) No. 11 — No. 12: DTC 23 / (F49) No. 9 — No. 10: DTC 25 / (F49) No. 14 — No. 15: DTC 27 / (F49) No. 7 — No. 8: Is the measured value within the specified range?</li> </ul>	1 - 1.5 kΩ	Go to step <b>12</b> .	Repair harness/ connector between ABSCM&H/U and ABS sensor.

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	Step	Value	Yes	No
12	CHECK BATTERY SHORT OF HARNESS. Measure voltage between ABSCM&H/U con- nector and chassis ground. Connector & terminal DTC 21 / (F49) No. 11 (+) — Chassis ground (-): DTC 23 / (F49) No. 9 (+) — Chassis ground (-): DTC 25 / (F49) No. 14 (+) — Chassis ground (-): DTC 27 / (F49) No. 7 (+) — Chassis ground (-): Is the measured value less than the specified value?	1 V	Go to step 13.	Repair harness between ABSCM&H/U and ABS sensor.
13	<ul> <li>CHECK BATTERY SHORT OF HARNESS.</li> <li>1) Turn ignition switch to ON.</li> <li>2) Measure voltage between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal DTC 21 / (F49) No. 11 (+) — Chassis ground (-): DTC 23 / (F49) No. 9 (+) — Chassis ground (-): DTC 25 / (F49) No. 14 (+) — Chassis ground (-): DTC 27 / (F49) No. 7 (+) — Chassis ground (-): Is the measured value less than the specified value?</li> </ul>	1 V	Go to step 14.	Repair harness between ABSCM&H/U and ABS sensor.
14	CHECK INSTALLATION OF ABS SENSOR. Are the ABS sensor installation bolts tightened with the specified torque?	32±10 N⋅m (3.3±1.0 kgf-m, 24±7 ft-lb)	Go to step 15.	Tighten ABS sen- sor installation bolts securely.
15	CHECK ABS SENSOR GAP. Measure tone wheel to ABS sensor piece gap over entire perimeter of the wheel. Is the measured value within the specified range?	Front wheel 0.3 — 0.8 mm (0.012 — 0.031 in) and Rear wheel 0.44 — 0.94 mm (0.0173 — 0.0370 in)	Go to step 16.	Adjust the gap. NOTE: Adjust the gap us ing spacers (Par No. 26755AA000) If spacers canno correct the gap, re place worn senso or worn tone wheel.
16	CHECK TONE WHEEL RUNOUT. Measure tone wheel runout. Is the measured value within the specified range?	0.05 mm (0.0020 in)	Go to step 17.	Replace tone wheel. Front: <ref. abs-19,<br="" to="">Front Tone Wheel.&gt; Rear: <ref. abs-20,<br="" to="">Rear Tone Wheel.&gt;</ref.></ref.>

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	Step	Value	Yes	No
17	<ul> <li>CHECK GROUND SHORT OF ABS SENSOR.</li> <li>1) Turn ignition switch to ON.</li> <li>2) Measure resistance between ABS sensor and chassis ground.</li> <li>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: Does the measured value exceed the spec- ified value?</li> </ul>	1 ΜΩ	Go to step 18.	Replace ABS sen- sor and ABSCM&H/U. Front: <ref. to<br="">ABS-12, Front ABS Sensor.&gt; Rear: <ref. to<br="">ABS-15, Rear ABS Sensor.&gt; and <ref. abs-<br="" to="">6, ABS Control Module and Hydraulic Control Unit (ABSCM&amp;H/ U).&gt;</ref.></ref.></ref.>
18	<ul> <li>CHECK GROUND SHORT OF HARNESS.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Connect connector to ABS sensor.</li> <li>3) Measure resistance between ABSCM&amp;H/U connector terminal and chassis ground.</li> <li>Connector &amp; terminal DTC 21 / (F49) No. 11 — Chassis ground: DTC 23 / (F49) No. 9 — Chassis ground: DTC 25 / (F49) No. 14 — Chassis ground: DTC 27 / (F49) No. 7 — Chassis ground:</li> </ul>	1 ΜΩ	Go to step 19.	Repair harness between ABSCM&H/U and ABS sensor. And replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
19	CHECK POOR CONTACT IN CONNECTORS. Is there poor contact in connectors between ABSCM&H/U and ABS sensor?	There is no poor contact.	Go to step 20.	Repair connector.
20	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC.</li> <li>Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 21.	Replace ABSCM&H/U.
21	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact. NOTE: Check harness and connectors between AB- SCM&H/U and ABS sensor.	Proceed with the diagnosis corre- sponding to the DTC.

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### G: DTC 22 FRONT RIGHT ABNORMAL ABS SENSOR SIGNAL

NOTE:

For the diagnostic procedure, refer to DTC 28. <Ref. to ABS-92, DTC 28 REAR LEFT ABNORMAL ABS SENSOR SIGNAL, Diagnostics Chart with Subaru Select Monitor.>

### H: DTC 24 FRONT LEFT ABNORMAL ABS SENSOR SIGNAL

#### NOTE:

For the diagnostic procedure, refer to DTC 28. <Ref. to ABS-92, DTC 28 REAR LEFT ABNORMAL ABS SENSOR SIGNAL, Diagnostics Chart with Subaru Select Monitor.>

### I: DTC 26 REAR RIGHT ABNORMAL ABS SENSOR SIGNAL

#### NOTE:

For the diagnostic procedure, refer to DTC 28. <Ref. to ABS-92, DTC 28 REAR LEFT ABNORMAL ABS SENSOR SIGNAL, Diagnostics Chart with Subaru Select Monitor.>







ABS (DIAGNOSTICS)

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# J: DTC 28 REAR LEFT ABNORMAL ABS SENSOR SIGNAL DIAGNOSIS:

• Faulty ABS sensor signal (noise, irregular signal, etc.)

• Faulty harness/connector

TROUBLE SYMPTOM:

• ABS does not operate.

WIRING DIAGRAM:







	Step	Value	Yes	No
1	<ul> <li>CHECK OUTPUT OF ABS SENSOR USING SELECT MONITOR.</li> <li>1) Select "Current data display &amp; Save" on the select monitor.</li> <li>2) Read the ABS sensor output corresponding to the faulty system in the select monitor data display mode. 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?</li> </ul>	Change as same.	Go to step 2.	Go to step 8.
2	CHECK POOR CONTACT IN CONNECTORS. Turn ignition switch to OFF. Is there poor contact in connectors between ABSCM&H/U and ABS sensor?	There is no poor contact.	Go to step 3.	Repair connector.
3	CHECK SOURCES OF SIGNAL NOISE. Is the car telephone or the wireless transmitter properly installed?	Installed properly.	Go to step 4.	Properly install the car telephone or the wireless trans- mitter.
4	CHECK SOURCES OF SIGNAL NOISE. Are noise sources (such as an antenna) installed near the sensor harness?	Noise source is not installed near the sensor harness.	Go to step 5.	Install the noise sources apart from the sensor har- ness.
5	<ul> <li>CHECK SHIELD CIRCUIT.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Connect all connectors.</li> <li>3) Measure resistance between shield connector and chassis ground.</li> <li>Connector &amp; terminal DTC 22 / (B62) No. 1 — Chassis ground: DTC 24 / (B62) No. 10 — Chassis ground:</li> <li>Is the measured value less than the specified value?</li> <li>NOTE: For the DTC 26 and 28: Go to step 6.</li> </ul>	0.5 Ω	Go to step <b>6</b> .	Repair shield har- ness.
6	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 7.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
7	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary noise interference.	Proceed with the diagnosis corre- sponding to the DTC.
8	<b>CHECK INSTALLATION OF ABS SENSOR.</b> Are the ABS sensor installation bolts tightened with the specified torque?	32±10 N·m (3.3±1.0 kgf-m, 24±7 ft-lb)	Go to step 9.	Tighten ABS sen- sor installation bolts securely.

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	Step	Value	Yes	No
9	CHECK ABS SENSOR GAP. Measure tone wheel to ABS sensor piece gap over entire perimeter of the wheel. Is the measured value within the specified range?	Front wheel 0.3 — 0.8 mm (0.012 — 0.031 in) and Rear wheel 0.44 — 0.94 mm (0.0173 — 0.0370 in)	Go to step 10.	Adjust the gap. NOTE: Adjust the gap us- ing spacer (Part No. 26755AA000). If spacers cannot correct the gap, re- place worn sensor or worn tone wheel.
10	PREPARE OSCILLOSCOPE. Is an oscilloscope available?	Available.	Go to step 11.	Go to step 12.
11	<ul> <li>CHECK ABS SENSOR SIGNAL.</li> <li>1) Lift-up the vehicle.</li> <li>2) Turn ignition switch to OFF.</li> <li>3) Connect the oscilloscope to the connector.</li> <li>4) Turn ignition switch to ON.</li> <li>5) Rotate wheels and measure voltage at specified frequency. <ref. abs-15,="" control="" i="" module="" o="" signal.="" to="" waveform,=""></ref.></li> <li>NOTE:</li> <li>When this inspection is completed, the AB-SCM&amp;H/U sometimes stores the trouble code 29.</li> <li>Connector &amp; terminal DTC 22 / (B62) No. 3 (+) — No. 2 (-): DTC 24 / (B62) No. 12 (+) — No. 11 (-): DTC 28 / (F55) No. 3 (+) — No. 7 (-): Is the measured value same with the specified value?</li> </ul>	Oscilloscope pattern is as shown in figure.	Go to step <b>15</b> .	Go to step 12.
12	CHECK CONTAMINATION OF ABS SENSOR OR TONE WHEEL. Remove disc rotor from hub in accordance with diagnostic trouble code. Is the ABS sensor piece or the tone wheel con- taminated by mud or other foreign matter?	ABS sensor piece or the tone wheel is not contaminated.	Go to step 13.	Thoroughly remove dirt or other foreign mat- ter.
13	CHECK DAMAGE OF ABS SENSOR OR TONE WHEEL. Are there broken or damaged in the ABS sen- sor piece or the tone wheel?	No broken or damaged.	Go to step 14.	Replace ABS sen- sor or tone wheel. Front: <ref. to<br="">ABS-12, Front ABS Sensor.&gt; Rear: <ref. to<br="">ABS-15, Rear ABS Sensor.&gt; and Front: <ref. to ABS-19, Front Tone Wheel.&gt; Rear: <ref. to<br="">ABS-20, Rear Tone Wheel.&gt;</ref.></ref. </ref.></ref.>
14	<b>CHECK TONE WHEEL RUNOUT.</b> Measure tone wheel runout. Is the measured value less than the specified value?	0.05 mm (0.0020 in)	Go to step <b>15</b> .	Replace tone wheel. Front: <ref. abs-19,<br="" to="">Front Tone Wheel.&gt; Rear: <ref. abs-20,<br="" to="">Rear Tone Wheel.&gt;</ref.></ref.>

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	Step	Value	Yes	No
15	<ul> <li>CHECK RESISTANCE OF ABS SENSOR.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect connector from ABS sensor.</li> <li>3) Measure resistance between ABS sensor connector terminals.</li> <li>Terminal <ul> <li>Front RH No. 1 — No. 2:</li> <li>Front LH No. 1 — No. 2:</li> <li>Rear RH No. 1 — No. 2:</li> <li>Rear LH No. 1 — No. 2:</li> <li>Is the measured value within the specified range?</li> </ul> </li> </ul>	1 - 1.5 kΩ	Go to step 16.	Replace ABS sen- sor. Front: <ref. to ABS-12, Front ABS Sensor.&gt; Rear: <ref. to<br="">ABS-15, Rear ABS Sensor.&gt;</ref.></ref. 
16	CHECK GROUND SHORT OF ABS SENSOR. Measure resistance between ABS sensor and chassis ground. <i>Terminal</i> <i>Front RH No. 1 — Chassis ground:</i> <i>Front LH No. 1 — Chassis ground:</i> <i>Rear RH No. 1 — Chassis ground:</i> <i>Rear LH No. 1 — Chassis ground:</i> Does the measured value exceed the specified value?	. 1 ΜΩ	Go to step 17.	Replace ABS sensor. Front: <ref. to ABS-12, Front ABS Sensor.&gt; Rear: <ref. to<br="">ABS-15, Rear ABS Sensor.&gt;</ref.></ref. 
17	<ul> <li>CHECK HARNESS/CONNECTOR BETWEEN ABSCM&amp;H/U AND ABS SENSOR.</li> <li>1) Connect connector to ABS sensor.</li> <li>2) Disconnect connector from ABSCM&amp;H/U.</li> <li>3) Measure resistance at ABSCM&amp;H/U connector terminals.</li> <li>Connector &amp; terminal DTC 22 / (F49) No. 11 — No. 12: DTC 24 / (F49) No. 9 — No. 10: DTC 26 / (F49) No. 14 — No. 15: DTC 28 / (F49) No. 7 — No. 8: Is the measured value within the specified range?</li> </ul>	1 - 1.5 kΩ	Go to step 18.	Repair harness/ connector between ABSCM&H/U and ABS sensor.
18	CHECK GROUND SHORT OF HARNESS. Measure resistance between ABSCM&H/U connector and chassis ground. Connector & terminal DTC 22 / (F49) No. 11 — Chassis ground: DTC 24 / (F49) No. 9 — Chassis ground: DTC 26 / (F49) No. 14 — Chassis ground: DTC 28 / (F49) No. 7 — Chassis ground: DTC 28 / (F49) No. 7 — Chassis ground: Does the measured value exceed the specified value?	1 MΩ	Go to step 19.	Repair harness/ connector between ABSCM&H/U and ABS sensor.
19	CHECK GROUND CIRCUIT OF ABSCM&H/U. Measure resistance between ABSCM&H/U and chassis ground. Connector & terminal (F49) No. 23 — GND: Is the measured value less than the specified value?	0.5 Ω	Go to step 20.	Repair ABSCM&H/U ground harness.
20	CHECK POOR CONTACT IN CONNECTORS. Is there poor contact in connectors between ABSCM&H/U and ABS sensor?	There is no poor contact.	Go to step 21.	Repair connector.



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	Step	Value	Yes	No
21	CHECK SOURCES OF SIGNAL NOISE. Is the car telephone or the wireless transmitter properly installed?	Installed properly.	Go to step 22.	Properly install the car telephone or the wireless transmitter.
22	CHECK SOURCES OF SIGNAL NOISE. Are noise sources (such as an antenna) installed near the sensor harness?	Noise source is not installed near the sensor harness.	Go to step 23.	Install the noise sources apart from the sensor har- ness.
23	<ul> <li>CHECK SHIELD CIRCUIT.</li> <li>1) Connect all connectors.</li> <li>2) Measure resistance between shield connector and chassis ground.</li> <li>Connector &amp; terminal DTC 22 / (B62) No. 1 — Chassis ground: DTC 24 / (B62) No. 10 — Chassis ground: Is the measured value less than the specified value?</li> <li>NOTE: For the DTC 26 and 28: Go to step 24.</li> </ul>	0.5 Ω	Go to step 24.	Repair shield har- ness.
24	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step <b>25</b> .	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
25	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary noise interference.	Proceed with the diagnosis corre- sponding to the DTC.

**ABS-96** • Vehicle-id: SIE-id::J:DTC 28 Rear left Abnormal ABS Sensor Signal ~

62q\_usa.book 97 ページ 2002年4月11日 木曜日 午後1時34分



## DIAGNOSTICS CHART WITH SUBARU SELECT MONITOR ABS (DIAGNOSTICS)

MEMO:







ABS (DIAGNOSTICS)

### K: DTC 29 ABNORMAL ABS SENSOR SIGNAL ON ANY ONE OF FOUR SEN-SOR

**DIAGNOSIS:** 

•

- 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:



**ABS-98** Vehicle-id: SIE-id::K:DTC 29 Abnormal ABS Sensor Signal on Any One of Four Sensor

ABS00293



	Step	Value	Yes	No
1	CHECK WHEELS FOR FREE TURNING. Have wheels 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.	Wheels have not turned freely.	Go to step 2.	The ABS is nor- mal. Erase the diagnostic trouble code. NOTE: When the wheels turn freely for a long time, such as when the vehicle is towed or jacked up, or when steer- ing wheel is contin- uously turned al the way, this trou- ble code may sometimes occur.
2	CHECK TIRE SPECIFICATIONS. Turn ignition switch to OFF. Are the tire specifications correct?	Correct specification.	Go to step <b>3</b> .	Replace tire.
3	CHECK WEAR OF TIRE. Is the tire worn excessively?	Not worn excessively.	Go to step 4.	Replace tire.
4	CHECK TIRE PRESSURE. Is the tire pressure correct?	Correct tire pressure.	Go to step 5.	Adjust tire pres- sure.
5	<b>CHECK INSTALLATION OF ABS SENSOR.</b> Are the ABS sensor installation bolts tightened with the specified torque?	32±10 N⋅m (3.3±1.0 kgf-m, 24±7 ft-lb)	Go to step 6.	Tighten ABS sen- sor installation bolts securely.
6	CHECK ABS SENSOR GAP. Measure tone wheel to ABS sensor piece gap over entire perimeter of the wheel. Is the measured value within the specified range?	Front wheel 0.3 — 0.8 mm (0.012 — 0.031 in) and Rear wheel 0.44 — 0.94 mm (0.0173 — 0.0370 in)	Go to step <b>7</b> .	Adjust the gap. NOTE: Adjust the gap us- ing spacer (Par No. 26755AA000) If spacers canno correct the gap, re- place worn senso or worn tone wheel.
7	PREPARE OSCILLOSCOPE. Is an oscilloscope available?	Available.	Go to step 8.	Go to step 9.
8	<ul> <li>CHECK ABS SENSOR SIGNAL.</li> <li>1) Lift up the vehicle.</li> <li>2) Turn ignition switch to OFF.</li> <li>3) Connect the oscilloscope to the connector (B62) in accordance with trouble code.</li> <li>4) Turn ignition switch to ON.</li> <li>5) Rotate wheels and measure voltage at specified frequency. <ref. abs-15,="" control="" i="" module="" o="" signal.="" to="" waveform,=""></ref.></li> <li>NOTE:</li> <li>When this inspection is completed, the AB-SCM&amp;H/U sometimes stores the DTC 29.</li> <li>Connector &amp; terminal (B62) No. 3 (+) — No. 2 (-) (Front RH): (F55) No. 3 (+) — No. 7 (-) (Rear RH): (F55) No. 8 (+) — No. 7 (-) (Rear LH): Is the measured value same as the speci-</li> </ul>	Oscilloscope pattern is as shown in figure.	Go to step <b>12</b> .	Go to step 9.

Vehicle-id: SIE-id::K:DTC 29 Abnormal ABS Sensor Signal on Any One of Four Sensor



	Step	Value	Yes	No
9	CHECK CONTAMINATION OF ABS SENSOR OR TONE WHEEL. Remove disc rotor from hub. Is the ABS sensor piece or the tone wheel con- taminated by mud or other foreign matter?	ABS sensor piece or the tone wheel is not contaminated.	Go to step <b>10</b> .	Thoroughly remove mud or other foreign mat- ter.
10	CHECK DAMAGE OF ABS SENSOR OR TONE WHEEL. Are there broken or damaged teeth in the ABS sensor piece or the tone wheel?	Not broken or damaged.	Go to step 11.	Replace ABS sen- sor or tone wheel. Front: <ref. to<br="">ABS-12, Front ABS Sensor.&gt; Rear: <ref. to<br="">ABS-15, Rear ABS Sensor.&gt; and Front: <ref. to ABS-19, Front Tone Wheel.&gt; Rear: <ref. to<br="">ABS-20, Rear Tone Wheel.&gt;</ref.></ref. </ref.></ref.>
11	CHECK TONE WHEEL RUNOUT. Measure tone wheel runout. Is the measured value less than the specified value?	0.05 mm (0.0020 in)	Go to step 12.	Replace tone wheel. Front: <ref. abs-19,<br="" to="">Front Tone Wheel.&gt; Rear: <ref. abs-20,<br="" to="">Rear Tone Wheel.&gt;</ref.></ref.>
12	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Connect all connectors.</li> <li>3) Erase the memory.</li> <li>4) Perform inspection mode.</li> <li>5) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 13.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
13	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.





### L: DTC 31 FRONT RIGHT INLET VALVE MALFUNCTION

#### NOTE:

For the diagnostic procedure, refer to DTC 37. <Ref. to ABS-102, DTC 37 REAR LEFT INLET VALVE MAL-FUNCTION, Diagnostics Chart with Subaru Select Monitor.>

### M: DTC 33 FRONT LEFT INLET VALVE MALFUNCTION

#### NOTE:

For the diagnostic procedure, refer to DTC 37. <Ref. to ABS-102, DTC 37 REAR LEFT INLET VALVE MAL-FUNCTION, Diagnostics Chart with Subaru Select Monitor.>

### **N: DTC 35 REAR RIGHT INLET VALVE MALFUNCTION**

#### NOTE:

For the diagnostic procedure, refer to DTC 37. <Ref. to ABS-102, DTC 37 REAR LEFT INLET VALVE MAL-FUNCTION, Diagnostics Chart with Subaru Select Monitor.>









ABS (DIAGNOSTICS)

## **O: DTC 37 REAR LEFT INLET VALVE MALFUNCTION**

**DIAGNOSIS:** 

- Faulty harness/connector · Faulty inlet solenoid valve
- TROUBLE SYMPTOM:

• ABS does not operate. WIRING DIAGRAM:









	Step	Value	Yes	No
1	<ul> <li>CHECK INPUT VOLTAGE OF ABSCM&amp;H/U.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect connector from ABSCM&amp;H/U.</li> <li>3) Run the engine at idle.</li> <li>4) Measure voltage between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal (F49) No. 1 (+) — Chassis ground (-): Is the measured value within the specified range?</li> </ul>	10 - 15 V	Go to step 2.	Repair harness connector between battery, ignition switch and ABSCM&H/U.
2	<ul> <li>CHECK GROUND CIRCUIT OF ABSCM&amp;H/U.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Measure resistance between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal         <ul> <li>(F49) No. 23 — Chassis ground:</li> <li>Is the measured value less than the specified value?</li> </ul> </li> </ul>	0.5 Ω	Go to step 3.	Repair ABSCM&H/U ground harness.
3	CHECK POOR CONTACT IN CONNECTORS. Is there poor contact in connectors between generator, battery and ABSCM&H/U?	There is no poor contact.	Go to step 4.	Repair connector.
4	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step <b>5</b> .	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
5	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.

Vehicle-id: SIE-id::0:DTC 37 Rear Left Inlet Valve Malfunction





ABS (DIAGNOSTICS)

### P: DTC 32 FRONT RIGHT OUTLET VALVE MALFUNCTION

NOTE:

For the diagnostic procedure, refer to DTC 38. <Ref. to ABS-106, DTC 38 REAR LEFT OUTLET VALVE MALFUNCTION, Diagnostics Chart with Subaru Select Monitor.>

### **Q: DTC 34 FRONT LEFT OUTLET VALVE MALFUNCTION**

#### NOTE:

For the diagnostic procedure, refer to DTC 38. <Ref. to ABS-106, DTC 38 REAR LEFT OUTLET VALVE MALFUNCTION, Diagnostics Chart with Subaru Select Monitor.>

### **R: DTC 36 REAR RIGHT OUTLET VALVE MALFUNCTION**

#### NOTE:

For the diagnostic procedure, refer to DTC 38. <Ref. to ABS-106, DTC 38 REAR LEFT OUTLET VALVE MALFUNCTION, Diagnostics Chart with Subaru Select Monitor.>



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MEMO:







ABS (DIAGNOSTICS)

### S: DTC 38 REAR LEFT OUTLET VALVE MALFUNCTION **DIAGNOSIS:**

• Faulty harness/connector

- Faulty outlet solenoid valve
- TROUBLE SYMPTOM:

• ABS does not operate. WIRING DIAGRAM:









	Step	Value	Yes	No
1	<ul> <li>CHECK INPUT VOLTAGE OF ABSCM&amp;H/U.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect connector from ABSCM&amp;H/U.</li> <li>3) Run the engine at idle.</li> <li>4) Measure voltage between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal (F49) No. 1 (+) — Chassis ground (-): Is the measured value within the specified range?</li> </ul>	10 - 15 V	Go to step 2.	Repair harness connector between battery, ignition switch and ABSCM&H/U.
2	<ul> <li>CHECK GROUND CIRCUIT OF ABSCM&amp;H/U.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Measure resistance between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal         <ul> <li>(F49) No. 23 — Chassis ground:</li> <li>Is the measured value less than the specified value?</li> </ul> </li> </ul>	0.5 Ω	Go to step 3.	Repair ABSCM&H/U ground harness.
3	CHECK POOR CONTACT IN CONNECTORS. Is there poor contact in connectors between generator, battery and ABSCM&H/U?	There is no poor contact.	Go to step 4.	Repair connector.
4	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC.</li> <li>Is the same DTC as in the current diagnosis still being output?</li> </ul>	Same DTC is not indicated.	Go to step <b>5</b> .	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
5	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.





ABS (DIAGNOSTICS)

#### T: DTC 41 ABS CONTROL MODULE MALFUNCTION **DIAGNOSIS:** • Faulty ABSCM&H/U **TROUBLE SYMPTOM:**

• ABS does not operate. WIRING DIAGRAM:



	otop	Value	100	110
1	CHECK GROUND CIRCUIT OF ABSCM&H/U.	0.5 Ω	Go to step 2.	Repair
	<ol> <li>Turn ignition switch to OFF.</li> </ol>			ABSCM&H/U
	2) Disconnect connector from ABSCM&H/U.			ground harness.
	3) Measure resistance between ABSCM&H/U			
	and chassis ground.			
	Connector & terminal			
	(F49) No. 23 — Chassis ground:			
	Is the measured value less than the speci- fied value?			
			•	•

Vehicle-id:

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	Step	Value	Yes	No
2	CHECK POOR CONTACT IN CONNECTORS. Is there poor contact in connectors between battery, ignition switch and ABSCM&H/U?	There is no poor contact.	Go to step 3.	Repair connector.
3	CHECK SOURCES OF SIGNAL NOISE. Is the car telephone or the wireless transmitter properly installed?	Installed properly.	Go to step 4.	Properly install the car telephone or the wireless trans- mitter.
4	CHECK SOURCES OF SIGNAL NOISE. Are noise sources (such as an antenna) installed near the sensor harness?	Noise source is not installed near the sensor harness.	Go to step 5.	Install the noise sources apart from the sensor har- ness.
5	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Connect all connectors.</li> <li>3) Erase the memory.</li> <li>4) Perform inspection mode.</li> <li>5) Read out the DTC.</li> <li>Is the same DTC as in the current diagnosis still being output?</li> </ul>	Same DTC is not indicated.	Go to step 6.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
6	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.

Vehicle-id: SIE-id::T:DTC 41 ABS Control Module Malfunction





ABS00294

## DIAGNOSTICS CHART WITH SUBARU SELECT MONITOR

ABS (DIAGNOSTICS)

# U: DTC 42 POWER SUPPLY VOLTAGE TOO LOW DIAGNOSIS:

Power source voltage of the ABSCM&H/U is low.
TROUBLE SYMPTOM:
ABS does not operate.
WIRING DIAGRAM:







	Step	Value	Yes	No
1	<ul> <li>CHECK GENERATOR.</li> <li>1) Start engine.</li> <li>2) Idling after warm-up.</li> <li>3) Measure voltage between generator B terminal and chassis ground.</li> <li>Terminal</li> <li>Generator B terminal — Chassis ground:</li> <li>Is the measured value within the specified range?</li> </ul>	10 - 15 V	Go to step 2.	<ul> <li>i) Repair generator.</li> <li>ii) H4 engine model:</li> <li>iii) <ref. generator.="" sc(h4so)-15,="" to=""></ref.></li> <li>iv) H6 engine model:</li> <li>v) <ref. generator.="" sc(h6do)-14,="" to=""></ref.></li> </ul>
2	<b>CHECK BATTERY TERMINAL.</b> Turn ignition switch to OFF. Are the positive and negative battery terminals tightly clamped?	Terminals are tightened securely.	Go to step 3.	Tighten the clamp of terminal.
3	<ul> <li>CHECK INPUT VOLTAGE OF ABSCM&amp;H/U.</li> <li>1) Disconnect connector from ABSCM&amp;H/U.</li> <li>2) Run the engine at idle.</li> <li>3) Measure voltage between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal (F49) No. 1 (+) — Chassis ground (-): Is the measured value within the specified range?</li> </ul>	10 - 15 V	Go to step 4.	Repair harness connector between battery, ignition switch and ABSCM&H/U.
4	<ul> <li>CHECK GROUND CIRCUIT OF ABSCM&amp;H/U.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Measure resistance between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal (F49) No. 23 — Chassis ground: Is the measured value less than the specified value?</li> </ul>	0.5 Ω	Go to step 5.	Repair ABSCM&H/U ground harness.
5	CHECK POOR CONTACT IN CONNECTORS. Is there poor contact in connectors between generator, battery and ABSCM&H/U?	There is no poor contact.	Go to step <b>6.</b>	Repair connector.
6	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 7.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
7	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.

Vehicle-id: SIE-id::U:DTC 42 Power Supply Voltage Too Low

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# V: DTC 42 POWER SUPPLY VOLTAGE TOO HIGH

DIAGNOSIS:

Power source voltage of the ABSCM&H/U is high.
TROUBLE SYMPTOM:
ABS does not operate.
WIRING DIAGRAM:







	Step	Value	Yes	No
1	<ul> <li>CHECK GENERATOR.</li> <li>1) Start engine.</li> <li>2) Idling after warm-up.</li> <li>3) Measure voltage between generator B terminal and chassis ground.</li> <li>Terminal</li> <li>Generator B terminal — Chassis</li> <li>ground:</li> <li>Is the measured value within the specified range?</li> </ul>	10 - 17 V	Go to step 2.	<ul> <li>i) Repair generator.</li> <li>ii) H4 engine model:</li> <li>iii) <ref. generator.="" sc(h4so)-15,="" to=""></ref.></li> <li>iv) H6 engine model:</li> <li>v) <ref. generator.="" sc(h6do)-14,="" to=""></ref.></li> </ul>
2	CHECK BATTERY TERMINAL. Turn ignition switch to OFF. Are the positive and negative battery terminals tightly clamped?	Terminals are tightened securely.	Go to step 3.	Tighten the clamp of terminal.
3	<ul> <li>CHECK INPUT VOLTAGE OF ABSCM&amp;H/U.</li> <li>1) Disconnect connector from ABSCM&amp;H/U.</li> <li>2) Run the engine at idle.</li> <li>3) Measure voltage between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal <ul> <li>(F49) No. 1 (+) — Chassis ground (-):</li> <li>Is the measured value within the specified range?</li> </ul> </li> </ul>	10 - 17 V	Go to step 4.	Repair harness connector between battery, ignition switch and ABSCM&H/U.
4	<ul> <li>CHECK GROUND CIRCUIT OF ABSCM&amp;H/U.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Measure resistance between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal         <ul> <li>(F49) No. 23 — Chassis ground:</li> <li>Is the measured value less than the specified value?</li> </ul> </li> </ul>	0.5 Ω	Go to step <b>5</b> .	Repair ABSCM&H/U ground harness.
5	CHECK POOR CONTACT IN CONNECTORS. Is there poor contact in connectors between generator, battery and ABSCM&H/U?	There is no poor contact.	Go to step <b>6</b> .	Repair connector.
6	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 7.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
7	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.

Vehicle-id: SIE-id::V:DTC 42 Power Supply Voltage Too High ~



ABS (DIAGNOSTICS)

### W: DTC 44 ABS-AT CONTROL (NON CONTROLLED)

DIAGNOSIS:
Combination of AT control faults
TROUBLE SYMPTOM:
ABS does not operate.
WIRING DIAGRAM:





	Step	Value	Yes	No
1	CHECK SPECIFICATIONS OF THE AB- SCM&H/U. Check specifications of the mark to the ABSCM&H/U. CG: AT (except OUTBACK) CH: MT (except OUTBACK) CI: AT (OUTBACK) CJ: MT (OUTBACK) Do the vehicle specification and the specifica- tion of ABSCM&HU match?	Both are the same specifica- tions.	Go to step 2.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
2	<ul> <li>CHECK GROUND SHORT OF HARNESS.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect two connectors from TCM.</li> <li>3) Disconnect connector from ABSCM&amp;H/U.</li> <li>4) Measure resistance between ABSCM&amp;H/U.</li> <li>4) Measure resistance between ABSCM&amp;H/U.</li> <li>connector and chassis ground.</li> <li>Connector &amp; terminal (F49) No. 3 — Chassis ground: Does the measured value exceed the specified value?</li> </ul>	1 ΜΩ	Go to step 3.	Repair harness between TCM and ABSCM&H/U.
3	<ul> <li>CHECK TCM.</li> <li>1) Connect all connectors to TCM.</li> <li>2) Turn ignition switch to ON.</li> <li>3) Measure voltage between TCM connector terminal and chassis ground.</li> <li>Connector &amp; terminal <ul> <li>(B54) No. 19 (+) — Chassis ground (-):</li> <li>Is the measured value within the specified range?</li> </ul> </li> </ul>	10 - 15 V	Go to step <b>5</b> .	Go to step 4.
4	CHECK AT. Is the AT functioning normally?	Function of AT is normal.	Replace TCM.	Repair AT.
5	CHECK OPEN CIRCUIT OF HARNESS. Measure voltage between ABSCM&H/U con- nector and chassis ground. Connector & terminal (F49) No. 3 (+) — Chassis ground (–): (F49) No. 31 (+) — Chassis ground (–): Is the measured value within the specified range?	10 - 15 V	Go to step 6.	Repair harness/ connector between TCM and ABSCM&H/U.
6	CHECK POOR CONTACT IN CONNECTORS. Is there poor contact in connectors between TCM and ABSCM&H/U?	There is no poor contact.	Go to step 7.	Repair connector.
7	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 8.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
8	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.

Vehicle-id: SIE-id::W:DTC 44 ABS-AT Control (Non Controlled)







ABS (DIAGNOSTICS)

### X: DTC 44 ABS-AT CONTROL (CONTROLLED)

DIAGNOSIS:
Combination of AT control faults
TROUBLE SYMPTOM:
ABS does not operate.
WIRING DIAGRAM:







	Step	Value	Yes	No
1	<ul> <li>CHECK BATTERY SHORT OF HARNESS.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect two connectors from TCM.</li> <li>3) Disconnect connector from ABSCM&amp;H/U.</li> <li>4) Measure voltage between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal (F49) No. 3 (+) — Chassis ground (-): Is the measured value less than the specified value?</li> </ul>	1 V	Go to step 2.	Repair harness between TCM and ABSCM&H/U.
2	<ul> <li>CHECK BATTERY SHORT OF HARNESS.</li> <li>1) Turn ignition switch to ON.</li> <li>2) Measure voltage between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal         <ul> <li>(F49) No. 3 (+) — Chassis ground (-):</li> <li>Is the measured value less than the specified value?</li> </ul> </li> </ul>	1 V	Go to step 3.	Repair harness between TCM and ABSCM&H/U.
3	<ul> <li>CHECK OPEN CIRCUIT OF HARNESS.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Connect all connectors to TCM.</li> <li>3) Turn ignition switch to ON.</li> <li>4) Measure voltage between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal <ul> <li>(F49) No. 3 (+) — Chassis ground (-):</li> <li>(F49) No. 31 (+) — Chassis ground (-):</li> </ul> </li> <li>Is the measured value within the specified range?</li> </ul>	10 - 13 V	Go to step 4.	Repair harness/ connector between TCM and ABSCM&H/U.
4	CHECK POOR CONTACT IN CONNECTORS. Turn ignition switch to OFF. Is there poor contact in connectors between TCM and ABSCM&H/U?	There is no poor contact.	Go to step 5.	Repair connector.
5	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step <b>6.</b>	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
6	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.

Vehicle-id: SIE-id::X:DTC 44 ABS-AT Control (Controlled)





# Y: DTC 51 VALVE RELAY MALFUNCTION DIAGNOSIS: Faulty valve relay TROUBLE SYMPTOM: ABS does not operate.

WIRING DIAGRAM:



ABS00297

ABS-118 Vehicle-id: SIE-id::Y:DTC 51 Valve Relay Malfunction



	Step	Value	Yes	No
1	<ul> <li>CHECK INPUT VOLTAGE OF ABSCM&amp;H/U.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect connector from ABSCM&amp;H/U.</li> <li>3) Run the engine at idle.</li> <li>4) Measure voltage between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal <ul> <li>(F49) No. 1 (+) — Chassis ground (-):</li> <li>(F49) No. 24 (+) — Chassis ground (-):</li> <li>Is the measured value within the specified range?</li> </ul> </li> </ul>	10 - 15 V	Go to step 2.	Repair harness connector between battery and ABSCM&H/U
2	<ul> <li>CHECK GROUND CIRCUIT OF ABSCM&amp;H/U.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Measure resistance between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal (F49) No. 23 — Chassis ground: Is the measured value less than the speci-</li> </ul>	0.5 Ω	Go to step 3.	Repair ABSCM&H/U ground harness.
3	fied value? CHECK POOR CONTACT IN CONNECTORS. Is there poor contact in connectors between generator, battery and ABSCM&H/U?	There is no poor contact.	Go to step 4.	Repair connector.
4	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 5.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
5	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.

Vehicle-id: SIE-id::Y:DTC 51 Valve Relay Malfunction





Z: DTC 51 VALVE RELAY ON FAILURE

DIAGNOSIS:
Faulty valve relay
TROUBLE SYMPTOM:
ABS does not operate.
WIRING DIAGRAM:



ABS00297





	Step	Value	Yes	No
1	CHECK VALVE RELAY IN ABSCM&H/U. Measure resistance between ABSCM&H/U ter- minals. <i>Terminals</i> <i>No. 23 (+) — No. 24 (–):</i> Does the measured value exceed the specified value?	1 ΜΩ	Go to step 2.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
2	CHECK POOR CONTACT IN CONNECTORS. Is there poor contact in connectors between generator, battery and ABSCM&H/U?	There is no poor contact.	Go to step 3.	Repair connector.
3	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 4.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
4	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.

Vehicle-id: SIE-id::Z:DTC 51 Valve Relay on Failure



ABS (DIAGNOSTICS)

# AA:DTC 52 OPEN CIRCUIT IN MOTOR RELAY CIRCUIT DIAGNOSIS:

- Faulty motor
- Faulty motor relay
- Faulty harness connector
- TROUBLE SYMPTOM:
- ABS does not operate.
- WIRING DIAGRAM:



ABS00298



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Vehicle-id: SIE-id::AA:DTC 52 Open Circuit in Motor Relay Circuit



	Step	Value	Yes	No
1	<ul> <li>CHECK INPUT VOLTAGE OF ABSCM&amp;H/U.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect connector from ABSCM&amp;H/U.</li> <li>3) Turn ignition switch to ON.</li> <li>4) Measure voltage between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal (F49) No. 25 (+) — Chassis ground (-): Is the measured value within the specified range?</li> </ul>	10 - 15 V	Go to step 2.	Repair harness/ connector between battery and ABSCM&H/U and check fuse SBF6.
2	<ul> <li>CHECK GROUND CIRCUIT OF MOTOR.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Measure resistance between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal         <ul> <li>(F49) No. 26 — Chassis ground:</li> <li>Is the measured value less than the specified value?</li> </ul> </li> </ul>	0.5 Ω	Go to step 3.	Repair ABSCM&H/U ground harness.
3	CHECK MOTOR OPERATION. Operate the sequence control. <ref. abs-<br="" to="">9, ABS Sequence Control.&gt; NOTE: Use the diagnosis connector to operate the se- quence control. Can motor revolution noise (buzz) be heard when carrying out the sequence?</ref.>	Operating sound is produced.	Go to step 4.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
4	CHECK POOR CONTACT IN CONNECTORS. Turn ignition switch to OFF. Is there poor contact in connector between generator, battery and ABSCM&H/U?	There is no poor contact.	Go to step <b>5</b> .	Repair connector.
5	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 6.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
6	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.

Vehicle-id: SIE-id::AA:DTC 52 Open Circuit in Motor Relay Cir-cuit ~



# AB:DTC 52 MOTOR RELAY ON FAILURE DIAGNOSIS:

- Faulty motor
- Faulty motor relay
- Faulty harness connector
- TROUBLE SYMPTOM:
- ABS does not operate.
- WIRING DIAGRAM:



ABS00298



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Vehicle-id: SIE-id::AB:DTC 52 Motor Relay on Failure



	Step	Value	Yes	No
1	CHECK MOTOR RELAY IN ABSCM&H/U. Measure resistance between ABSCM&H/U ter- minals. <i>Terminals</i> <i>No. 25 — No. 26:</i> Does the measured value exceed the specified value?	1 ΜΩ	Go to step 2.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
2	CHECK MOTOR OPERATION. Operate the sequence control. <ref. abs-<br="" to="">9, ABS Sequence Control.&gt; NOTE: Use the diagnosis connector to operate the se- quence control. Can motor revolution noise (buzz) be heard when carrying out the sequence control?</ref.>	There is no poor contact.	Go to step 3.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
3	CHECK POOR CONTACT IN CONNECTORS. Turn ignition switch to OFF. Is there poor contact in connector between generator, battery and ABSCM&H/U?	Operating sound is produced.	Go to step 4.	Repair connector.
4	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step <b>5</b> .	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
5	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.

Vehicle-id: SIE-id:: AB: DTC 52 Motor Relay on Failure





ABS (DIAGNOSTICS)

# AC:DTC 52 MOTOR MALFUNCTION DIAGNOSIS:

- Faulty motor
- Faulty motor relay
- Faulty harness connector
- TROUBLE SYMPTOM:
- ABS does not operate.
- WIRING DIAGRAM:



ABS00298

## ABS-126

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## Vehicle-id: SIE-id::AC:DTC 52 Motor Malfunction



	Step	Value	Yes	No
1	CHECK INPUT VOLTAGE OF ABSCM&H/U. 1) Turn ignition switch to OFF.	10 - 13 V	Go to step 2.	Repair harness/ connector
	2) Disconnect connector from ABSCM&H/U.			between battery
	3) Turn ignition switch to ON.			and ABSCM&H/U
	<ol> <li>Measure voltage between ABSCM&amp;H/U</li> </ol>			and check fuse
	connector and chassis ground.			SBF6.
	(F49) No. 25 (+) — Chassis ground (–):			
	Is the measured value within the specified			
	range?			
2	CHECK GROUND CIRCUIT OF MOTOR.	0.5 Ω	Go to step 3.	Repair
	1) Turn ignition switch to OFF.			ABSCM&H/U
	2) Measure resistance between ABSCM&H/U			ground harness.
	connector and chassis ground.			
	(F49) No. 26 — Chassis around:			
	Is the measured value less than the speci-			
	fied value?			
3	CHECK INPUT VOLTAGE OF ABSCM&H/U.	10 - 15 V	Go to step 4.	Repair harness
	1) Run the engine at idle.			connector
	2) Measure voltage between ABSCM&H/U			between battery,
	Connector and chassis ground.			Ignition switch and
	(F49) No. 1 (+) — Chassis around (–):			ABSCINIALI/U.
	Is the measured value within the specified			
	range?			
4	CHECK GROUND CIRCUIT OF ABSCM&H/U.	0.5 Ω	Go to step 5.	Repair
	1) Turn ignition switch to OFF.			ABSCM&H/U
	2) Measure resistance between ABSCM&H/U			ground harness.
	connector and chassis ground.			
	(F49) No. 23 — Chassis ground:			
	Is the measured value less than the speci-			
	fied value?			
5	CHECK MOTOR OPERATION.	Operating sound is produced.	Go to step 6.	Replace
	Operate the sequence control. < Ref. to ABS-	-		ABSCM&H/U.
	9, ABS Sequence Control.>			<ref. abs-6,<="" td="" to=""></ref.>
	NOTE:			ABS Control Mod
	Use the diagnosis connector to operate the se-			Control Unit
	Can motor revolution poise (buzz) be heard			(ABSCM&H/U).>
	when carrying out the sequence control?			
6	CHECK POOR CONTACT IN CONNECTORS.	There is no poor contact.	Go to step 7.	Repair connector
	Turn ignition switch to OFF.			
	Is there poor contact in connector between			
7	generator, battery and ABSCM&H/U?	Sama DTC is not indicated	Co to oton <b>9</b>	Doplage
1	CHECK ABSCM&H/U.	Same DIC is not indicated.	Go to step 8.	
	2) Frase the memory.			<ref. abs-6.<="" td="" to=""></ref.>
	3) Perform inspection mode.			ABS Control Mod
	4) Read out the DTC.			ule and Hydraulic
	Is the same DTC still being output?			Control Unit
			-	(ABSCM&H/U).>
8	CHECK ANY OTHER DTC APPEARANCE.	Other DTC is not indicated.	A temporary poor	Proceed with the
	Are other DIC being output?		contact.	ulagnosis corre-
				DTC

Vehicle-id: SIE-id:: AC: DTC 52 Motor Malfunction



ABS00299

# DIAGNOSTICS CHART WITH SUBARU SELECT MONITOR

ABS (DIAGNOSTICS)

#### AD:DTC 54 STOP LIGHT SWITCH SIGNAL CIRCUIT MALFUNCTION DIAGNOSIS: • Faulty stop light switch

Faulty stop light switch TROUBLE SYMPTOM:
ABS does not operate.
WIRING DIAGRAM:







	Step	Value	Yes	No
1	<ul> <li>CHECK OUTPUT OF STOP LIGHT SWITCH USING SELECT MONITOR.</li> <li>1) Select "Current data display &amp; Save" on the select monitor.</li> <li>2) Release the brake pedal.</li> <li>3) Read the stop light switch output in the select monitor data display. Is the reading indicated on monitor display less than the specified value?</li> </ul>	1.5 V	Go to step 2.	Go to step 3.
2	<ul> <li>CHECK OUTPUT OF STOP LIGHT SWITCH USING SELECT MONITOR.</li> <li>1) Depress the brake pedal.</li> <li>2) Read the stop light switch output in the select monitor data display. Is the reading indicated on monitor display within the specified range?</li> </ul>	10 - 15 V	Go to step 5.	Go to step 3.
3	CHECK IF STOP LIGHTS COME ON. Depress the brake pedal. Do stop lights turn on?	Stop lights come on.	Go to step 4.	Repair stop lights circuit.
4	<ul> <li>CHECK OPEN CIRCUIT IN HARNESS.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect connector from ABSCM&amp;H/U.</li> <li>3) Depress brake pedal.</li> <li>4) Measure voltage between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal <ul> <li>(F49) No. 2 — Chassis ground:</li> <li>Is the measured value within the specified range?</li> </ul> </li> </ul>	10 - 15 V	Go to step 5.	Repair harness between stop light switch and ABSCM&H/U con- nector.
5	CHECK POOR CONTACT IN CONNECTORS. Is there poor contact in connector between stop light switch and ABSCM&H/U?	There is no poor contact.	Go to step 6.	Repair connector.
6	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 7.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
7	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.

Vehicle-id: SIE-id::AD:DTC 54 Stop Light Switch Signal Circuit Malfunction ~

ABS-129

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### **AE:DTC 56 OPEN OR SHORT CIRCUIT IN G SENSOR CIRCUIT**

#### DIAGNOSIS:

• Faulty G sensor output voltage **TROUBLE SYMPTOM**:

• ABS does not operate.

WIRING DIAGRAM:

 Image: set of the set of



ABS-130 Wehicle-id: SIE-id::AE:DTC 56 Open or Short Circuit in G Sensor Circuit ~



	Step	Value	Yes	No
1	<ul> <li>CHECK OUTPUT OF G SENSOR USING SE- LECT MONITOR.</li> <li>1) Select "Current data display &amp; Save" on the select monitor.</li> <li>2) Read the G sensor output in select monitor data display. Is the G sensor output on the monitor dis- play within the specified range when the G sensor is in horizontal position?</li> </ul>	2.1 - 2.5 V	Go to step <b>2</b> .	Go to step <b>5</b> .
2	CHECK POOR CONTACT IN CONNECTORS. Is there poor contact in connector between ABSCM&H/U and G sensor?	There is no poor contact.	Go to step 3.	Repair connector.
3	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 4.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
4	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.
5	<ul> <li>CHECK INPUT VOLTAGE OF G SENSOR.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Remove console box.</li> <li>3) Disconnect G sensor from body. (Do not disconnect connector.)</li> <li>4) Turn ignition switch to ON.</li> <li>5) Measure voltage between G sensor connector terminals.</li> <li>Connector &amp; terminal (R70) No. 1 (+) - No. 3 (-): Is the measured value within the specified range?</li> </ul>	4.75 - 5.25 V	Go to step <b>6</b> .	Repair harness/ connector between G sensor and ABSCM&H/U.
6	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. 6 — No. 28: Is the measured value within the specified range?	5.0 - 5.6 kΩ	Go to step 7.	Repair harness/ connector between G sensor and ABSCM&H/U.
7	<ul> <li>CHECK GROUND SHORT IN G SENSOR OUTPUT HARNESS.</li> <li>1) Disconnect connector from G sensor.</li> <li>2) Measure resistance between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal (F49) No. 6 — Chassis ground: Does the measured value exceed the spec- ified value?</li> </ul>	1 ΜΩ	Go to step <b>8.</b>	Repair harness between G sensor and ABSCM&H/U.

Vehicle-id: SIE-id::AE:DTC 56 Open or Short Circuit in G Sen-sor Circuit ~



	Step	Value	Yes	No
8	<ul> <li>CHECK G SENSOR.</li> <li>1) Connect connector to G sensor.</li> <li>2) Connect connector to ABSCM&amp;H/U.</li> <li>3) Turn ignition switch to ON.</li> <li>4) Measure voltage between G sensor connector terminals.</li> <li>Connector &amp; terminal <ul> <li>(R70) No. 2 (+) — No. 3 (-):</li> <li>Is the voltage between within the specified range when G sensor is horizontal?</li> </ul> </li> </ul>	2.1 - 2.5 V	Go to step <b>9</b> .	Replace G sen- sor. <ref. abs-<br="" to="">21, G Sensor.&gt;</ref.>
9	CHECK G SENSOR. Measure voltage between G sensor connector terminals. Connector & terminal (R70) No. 2 (+) — No. 3 (–): Is the voltage between within the specified range when G sensor is inclined forwards to 90°?	3.7 - 4.1 V	Go to step <b>10</b> .	Replace G sen- sor. <ref. abs-<br="" to="">21, G Sensor.&gt;</ref.>
10	CHECK G SENSOR. Measure voltage between G sensor connector terminals. Connector & terminal (R70) No. 2 (+) — No. 3 (–): Is the voltage between within the specified range when G sensor is inclined backwards to 90°?	0.5 - 0.9 V	Go to step 11.	Replace G sen- sor. <ref. abs-<br="" to="">21, G SENSOR, .&gt;</ref.>
11	CHECK POOR CONTACT IN CONNECTORS. Turn ignition switch to OFF. Is there poor contact in connector between ABSCM&H/U and G sensor?	There is no poor contact.	Go to step 12.	Repair connector.
12	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 13.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
13	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.



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# DIAGNOSTICS CHART WITH SUBARU SELECT MONITOR ABS (DIAGNOSTICS)

MEMO:





ABS (DIAGNOSTICS)

# AF:DTC 56 BATTERY SHORT IN G SENSOR CIRCUIT

DIAGNOSIS:
Faulty G sensor output voltage TROUBLE SYMPTOM:
ABS does not operate.
WIRING DIAGRAM:







	Step	Value	Yes	No
1	<ul> <li>CHECK OUTPUT OF G SENSOR USING SELECT MONITOR.</li> <li>1) Select "Current data display &amp; Save" on the select monitor.</li> <li>2) Read the G sensor output in select monitor data display. Is the G sensor output on the monitor display between within the specified range when the G sensor is in horizontal position?</li> </ul>	2.1 - 2.5 V	Go to step 2.	Go to step 5.
2	CHECK POOR CONTACT IN CONNECTORS. Is there poor contact in connector between ABSCM&H/U and G sensor?	There is no poor contact.	Go to step <b>3</b> .	Repair connector.
3	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step <b>4</b> .	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
4	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.
5	<ul> <li>CHECK FREEZE FRAME DATA.</li> <li>1) Select "Freeze frame data" on the select monitor.</li> <li>2) Read front right wheel speed on the select monitor display. Is the front right wheel speed on monitor display same as the specified value?</li> </ul>	0 km/h (0 MPH)	Go to step <b>6</b> .	Go to step 16.
6	CHECK FREEZE FRAME DATA. Read front left wheel speed on the select mon- itor display. Is the front left wheel speed on monitor display same as the specified value?	0 km/h (0 MPH)	Go to step 7.	Go to step <b>16.</b>
7	CHECK FREEZE FRAME DATA. Read rear right wheel speed on the select monitor display. Is the rear right wheel speed on monitor dis- play same as the specified value?	0 km/h (0 MPH)	Go to step 8.	Go to step <b>16.</b>
8	CHECK FREEZE FRAME DATA. Read rear left wheel speed on the select moni- tor display. Is the rear left wheel speed on monitor display same as the specified value?	0 km/h (0 MPH)	Go to step <b>9.</b>	Go to step 16.
9	CHECK FREEZE FRAME DATA. Read G sensor output on the select monitor display. Does measured value exceed the specified value on monitor display?	3.65 V	Go to step <b>10.</b>	Go to step 16.

Vehicle-id: SIE-id::AF:DTC 56 Battery Short in G Sensor Circuit

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	Step	Value	Yes	No
10	<ul> <li>CHECK OPEN CIRCUIT IN G SENSOR OUT- PUT HARNESS AND GROUND HARNESS.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect connector from ABSCM&amp;H/U.</li> <li>3) Measure resistance between ABSCM&amp;H/U.</li> <li>4) Measure resista</li></ul>	5.0 - 5.6 kΩ	Go to step 11.	Repair harness/ connector between G sensor and ABSCM&H/U.
11	<ul> <li>CHECK BATTERY SHORT OF HARNESS.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Remove console box.</li> <li>3) Disconnect connector from G sensor.</li> <li>4) Disconnect connector from ABSCM&amp;H/U.</li> <li>5) Measure voltage between ABSCM&amp;H/U.</li> <li>5) Measure voltage between ABSCM&amp;H/U.</li> <li>5) Measure voltage between ABSCM&amp;H/U.</li> <li>connector and chassis ground.</li> <li>Connector &amp; terminal         <ul> <li>(F49) No. 6 (+) — Chassis ground (-):</li> <li>Is the measured value less than the specified value?</li> </ul> </li> </ul>	1 V	Go to step 12.	Repair harness between G sensor and ABSCM&H/U.
12	<ul> <li>CHECK BATTERY SHORT OF HARNESS.</li> <li>1) Turn ignition switch to ON.</li> <li>2) Measure voltage between ABSCM&amp;H/U connector and chassis ground.</li> <li>Connector &amp; terminal (F49) No. 6 (+) — Chassis ground (-): Is the measured value less than the specified value?</li> </ul>	1 V	Go to step 13.	Repair harness between G sensor and ABSCM&H/U.
13	CHECK POOR CONTACT IN CONNECTORS. Is there poor contact in connector between ABSCM&H/U and G sensor?	There is no poor contact.	Go to step 14.	Repair connector.
14	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step <b>15</b> .	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
15	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.
16	<ul> <li>CHECK INPUT VOLTAGE OF G SENSOR.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Remove console box.</li> <li>3) Disconnect G sensor from body. (Do not disconnect connector.)</li> <li>4) Turn ignition switch to ON.</li> <li>5) Measure voltage between G sensor connector terminals.</li> <li>Connector &amp; terminal (R70) No. 1 (+) - No. 3 (-): Is the measured value within the specified range?</li> </ul>	4.75 - 5.25 V	Go to step 17.	Repair harness/ connector between G sensor and ABSCM&H/U.

Vehicle-id: SIE-id::AF:DTC 56 Battery Short in G Sensor Circuit

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	Step	Value	Yes	No
17	<ul> <li>CHECK OPEN CIRCUIT IN G SENSOR OUT- PUT HARNESS AND GROUND HARNESS.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect connector from ABSCM&amp;H/U.</li> <li>3) Measure resistance between ABSCM&amp;H/U.</li> <li>3) Measure resistance between ABSCM&amp;H/U.</li> <li>connector terminals.</li> <li>Connector &amp; terminal (F49) No. 6 — No. 28: Is the measured value within the specified range?</li> </ul>	5.0 - 5.6 kΩ	Go to step 18.	Repair harness/ connector between G sensor and ABSCM&H/U
18	<ul> <li>CHECK G SENSOR.</li> <li>1) Connect connector to G sensor.</li> <li>2) Connect connector to ABSCM&amp;H/U.</li> <li>3) Turn ignition switch to ON.</li> <li>4) Measure voltage between G sensor connector terminals.</li> <li>Connector &amp; terminal     (R70) No. 2 (+) — No. 3 (-):     Is the voltage within the specified range     when G sensor is horizontal?</li> </ul>	2.1 - 2.5 V	Go to step 19.	Replace G sen- sor. <ref. abs<br="" to="">21, G Sensor.&gt;</ref.>
19	CHECK G SENSOR. Measure voltage between G sensor connector terminals. Connector & terminal (R70) No. 2 (+) — No. 3 (–): Is the voltage within the specified range when G sensor is inclined forwards to 90°?	3.7 - 4.1 V	Go to step <b>20.</b>	Replace G sen- sor. <ref. abs<br="" to="">21, G Sensor.&gt;</ref.>
20	CHECK G SENSOR. Measure voltage between G sensor connector terminals. Connector & terminal (R70) No. 2 (+) — No. 3 (–): Is the voltage within the specifed range when G sensor is inclined backwards to 90°?	0.5 - 0.9 V	Go to step 21.	Replace G sen- sor. <ref. abs<br="" to="">21, G Sensor.&gt;</ref.>
21	CHECK POOR CONTACT IN CONNECTORS. Turn ignition switch to OFF. Is there poor contact in connector between ABSCM&H/U and G sensor?	There is no poor contact.	Go to step 22.	Repair connector.
22	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 23.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
23	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.

Vehicle-id: SIE-id::AF:DTC 56 Battery Short in G Sensor Circuit



ABS (DIAGNOSTICS)

### AG:DTC 56 ABNORMAL G SENSOR HIGH M OUTPUT

DIAGNOSIS:
Faulty G sensor output voltage TROUBLE SYMPTOM:
ABS does not operate.
WIRING DIAGRAM:



ABS00300

![](_page_60_Figure_8.jpeg)

![](_page_61_Picture_1.jpeg)

	Step	Value	Yes	No
1	<ul> <li>CHECK OUTPUT OF G SENSOR USING SE- LECT MONITOR.</li> <li>1) Select "Current data display &amp; Save" on the select monitor.</li> <li>2) Read G sensor output on the select monitor display.</li> <li>Is the G sensor output on monitor display within the specified range when the G sen- sor is in horizontal position?</li> </ul>	2.1 - 2.5 V	Go to step 2.	Go to step 6.
2	CHECK POOR CONTACT IN CONNECTORS. Turn ignition switch to OFF. Is there poor contact in connector between ABSCM&H/U and G sensor?	There is no poor contact.	Go to step 3.	Repair connector.
3	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 4.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
4	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.
5	<ul> <li>CHECK OPEN CIRCUIT IN G SENSOR OUT- PUT HARNESS AND GROUND HARNESS.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect connector from ABSCM&amp;H/U.</li> <li>3) Measure resistance between ABSCM&amp;H/U.</li> <li>3) Measure resistance between ABSCM&amp;H/U.</li> <li>connector terminals.</li> <li>Connector &amp; terminal (F49) No. 6 — No. 28: Is the measured value within the specified range?</li> </ul>	5.0 - 5.6 kΩ	Go to step <b>6</b> .	Repair harness/ connector between G sensor and ABSCM&H/U
6	CHECK GROUND SHORT OF HARNESS. Measure resistance between ABSCM&H/U connector and chassis ground. Connector & terminal (F49) No. 28 — Chassis ground: Does the measured value exceed the specified value?	1 ΜΩ	Go to step 7.	Repair harness between G sensor and ABSCM&H/U. Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
7	<ul> <li>CHECK G SENSOR.</li> <li>1) Remove console box.</li> <li>2) Remove G sensor from vehicle.</li> <li>3) Connect connector to G sensor.</li> <li>4) Connect connector to ABSCM&amp;H/U.</li> <li>5) Turn ignition switch to ON.</li> <li>6) Measure voltage between G sensor connector terminals.</li> <li>Connector &amp; terminal     (<i>R70</i>) No. 2 (+) — No. 3 (-):     Is the voltage within the specified range     when G sensor is horizontal?</li> </ul>	2.1 - 2.5 V	Go to step 8.	Replace G sen- sor. <ref. abs<br="" to="">21, G Sensor.&gt;</ref.>

Vehicle-id: SIE-id:: AG:DTC 56 Abnormal G Sensor High  $\mu$  Output

![](_page_62_Picture_1.jpeg)

	Step	Value	Yes	No
8	CHECK G SENSOR. Measure voltage between G sensor connector terminals. Connector & terminal (R70) No. 2 (+) — No. 3 (–): Is the voltage within the specified range when G sensor is inclined forwards to 90°?	3.7 - 4.1 V	Go to step <b>9.</b>	Replace G sen- sor. <ref. abs-<br="" to="">21, G Sensor.&gt;</ref.>
9	CHECK G SENSOR. Measure voltage between G sensor connector terminals. Connector & terminal (R70) No. 2 (+) — No. 3 (–): Is the voltage within the specified range when G sensor is inclined backwards to 90°?	0.5 - 0.9 V	Go to step <b>10.</b>	Replace G sen- sor. <ref. abs-<br="" to="">21, G Sensor.&gt;</ref.>
10	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Connect all connectors.</li> <li>3) Erase the memory.</li> <li>4) Perform inspection mode.</li> <li>5) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 11.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
11	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.

0 Vehicle-id: SIE-id::AG:DTC 56 Abnormal G Sensor High  $\mu$  Output ~

![](_page_62_Figure_6.jpeg)

![](_page_63_Picture_1.jpeg)

### DIAGNOSTICS CHART WITH SUBARU SELECT MONITOR ABS (DIAGNOSTICS)

MEMO:

![](_page_63_Picture_4.jpeg)

![](_page_63_Figure_5.jpeg)

![](_page_64_Figure_1.jpeg)

### **AH:DTC 56 DETECTION OF G SENSOR STICK**

### DIAGNOSIS:

• Faulty G sensor output voltage **TROUBLE SYMPTOM**:

• ABS does not operate.

WIRING DIAGRAM:

![](_page_64_Figure_8.jpeg)

![](_page_64_Figure_9.jpeg)

# ABS-142 ABS-142 Vehicle-id: SIE-id::AH:DTC 56 Detection of G Sensor Stick

![](_page_65_Picture_1.jpeg)

	Step	Value	Yes	No
1	CHECK WHEELS FOR FREE TURNING. Have the wheels been turned freely such as	Wheel have not turned freely.	Go to step 2.	The ABS is nor- mal. Erase the
	when the vehicle is lifted up, or operated on a rolling road?			trouble code.
2	<ul> <li>CHECK OUTPUT OF G SENSOR USING SE- LECT MONITOR.</li> <li>1) Select "Current data display &amp; Save" on the select monitor.</li> <li>2) Read the select monitor display. Is the G sensor output on the monitor dis- play within the specified range when the vehicle is in horizontal position?</li> </ul>	2.1 - 2.5 V	Go to step 3.	Go to step 8.
3	<ul> <li>CHECK OUTPUT OF G SENSOR USING SE- LECT MONITOR.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Remove console box.</li> <li>3) Remove G sensor from vehicle. (Do not disconnect connector.)</li> <li>4) Turn ignition switch to ON.</li> <li>5) Select "Current data display &amp; Save" on the select monitor.</li> <li>6) Read the select monitor display. Is the G sensor output on the monitor dis- play within the specified range when G sensor is inclined forwards to 90°?</li> </ul>	3.7 - 4.1 V	Go to step 4.	Replace G sen- sor. <ref. abs<br="" to="">21, G Sensor.&gt;</ref.>
4	CHECK OUTPUT OF G SENSOR USING SE- LECT MONITOR. Read the select monitor display. Is the G sensor output on the monitor display within the specified range when G sensor is inclined backwards to 90°?	0.5 - 0.9 V	Go to step 5.	Replace G sen- sor. <ref. abs<br="" to="">21, G Sensor.&gt;</ref.>
5	CHECK POOR CONTACT IN CONNECTORS. Turn ignition switch to OFF. Is there poor contact in connector between ABSCM&H/U and G sensor?	There is no poor contact.	Go to step 6.	Repair connector.
6	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Connect all connectors.</li> <li>2) Erase the memory.</li> <li>3) Perform inspection mode.</li> <li>4) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 7.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
7	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.
8	<ul> <li>CHECK OPEN CIRCUIT IN G SENSOR OUT- PUT HARNESS AND GROUND HARNESS.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect connector from ABSCM&amp;H/U.</li> <li>3) Measure resistance between ABSCM&amp;H/U.</li> <li>4) Measure resistance between ABSCM&amp;H/U.</li> <li>4) Measure resistance between ABSCM&amp;H/U.</li> <li>4) Measure resistance between ABSCM&amp;H/U.</li> <li>5) Measure resistance between ABSCM&amp;H/U.</li> <li>6) Measure resistance between ABSCM&amp;H/U.</li> <li>6) Measure resistance between ABSCM&amp;H/U.</li> </ul>	5.0 - 5.6 kΩ	Go to step 9.	Repair harness/ connector between G sensor and ABSCM&H/U.

Vehicle-id: SIE-id::AH:DTC 56 Detection of G Sensor Stick

![](_page_65_Figure_7.jpeg)

![](_page_66_Picture_1.jpeg)

	Step	Value	Yes	No
9	<ul> <li>CHECK G SENSOR.</li> <li>1) Remove console box.</li> <li>2) Remove G sensor from vehicle.</li> <li>3) Connect connector to G sensor.</li> <li>4) Connect connector to ABSCM&amp;H/U.</li> <li>5) Turn ignition switch to ON.</li> <li>6) Measure voltage between G sensor connector terminals.</li> <li>Connector &amp; terminal <ul> <li>(R70) No. 2 (+) — No. 3 (-):</li> <li>Is the voltage within the specified range when G sensor is horizontal?</li> </ul> </li> </ul>	2.1 - 2.5 V	Go to step 10.	Replace G sen- sor. <ref. abs<br="" to="">21, G Sensor.&gt;</ref.>
10	CHECK G SENSOR. Measure voltage between G sensor connector terminals. Connector & terminal (R70) No. 2 (+) — No. 3 (–): Is the voltage within the specified range when G sensor is inclined forwards to 90°?	3.7 - 4.1 V	Go to step 11.	Replace G sen- sor. <ref. abs<br="" to="">21, G Sensor.&gt;</ref.>
11	CHECK G SENSOR. Measure voltage between G sensor connector terminals. Connector & terminal (R70) No. 2 (+) — No. 3 (–): Is the voltage within the specified range when G sensor is inclined backwards to 90°?	0.5 - 0.9 V	Go to step <b>12</b> .	Replace G sen- sor. <ref. abs<br="" to="">21, G Sensor.&gt;</ref.>
12	<ul> <li>CHECK ABSCM&amp;H/U.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Connect all connectors.</li> <li>3) Erase the memory.</li> <li>4) Perform inspection mode.</li> <li>5) Read out the DTC. Is the same DTC still being output?</li> </ul>	Same DTC is not indicated.	Go to step 13.	Replace ABSCM&H/U. <ref. abs-6,<br="" to="">ABS Control Mod- ule and Hydraulic Control Unit (ABSCM&amp;H/U).&gt;</ref.>
13	CHECK ANY OTHER DTC APPEARANCE. Are other DTC being output?	Other DTC is not indicated.	A temporary poor contact.	Proceed with the diagnosis corre- sponding to the DTC.

Vehicle-id: SIE-id::AH:DTC 56 Detection of G Sensor Stick ~