14. Diagnostics Chart with Select Monitor sousse

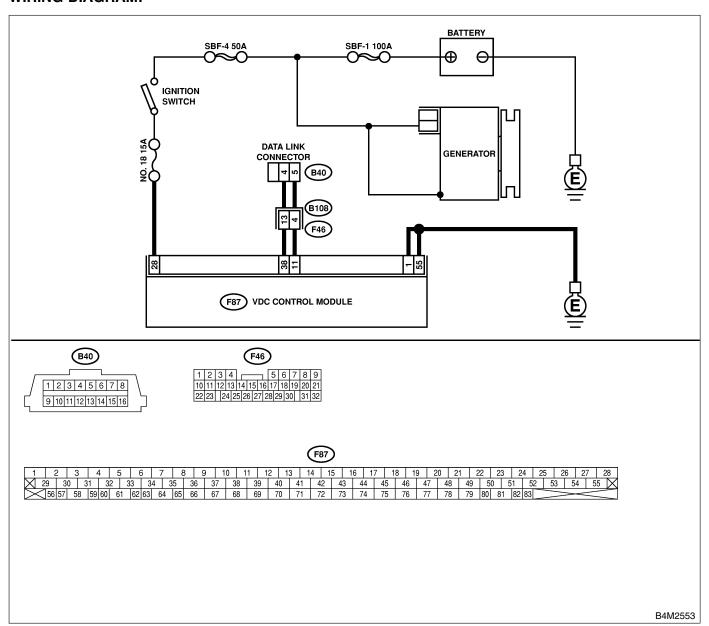
A: COMMUNICATION FOR INITIALIZING IMPOSSIBLE (SELECT MONITOR COMMUNICATION FAILURE) SOUSSOMESS

DIAGNOSIS:

• Faulty harness connector

TROUBLE SYMPTOM:

ABS warning light remains on.



No.	Step	Check	Yes	No
1	CHECK IGNITION SWITCH.	Is ignition switch ON?	Go to step 2.	Turn ignition switch ON, and select brake con- trol mode using the select monitor.
2	CHECK GENERATOR. 1) Start the engine. 2) Idle the engine. 3) Measure voltage between generator and chassis ground. Terminal Generator B terminal (+) — Chassis ground (-):	Is the voltage between 10 and 15 V?	Go to step 3.	Repair generator.
3	CHECK BATTERY TERMINAL. Turn ignition switch to OFF.	Is there poor contact at battery terminal?	Repair battery terminal.	Go to step 4.
4	CHECK COMMUNICATION OF SELECT MONITOR. Using the select monitor, check whether communication to other system (such as engine, AT, etc.) can be executed normally.	Are the name and year of the system displayed on the select monitor?	Go to step 5.	Repair select monitor communi- cation cable and connector.
5	CHECK INSTALLATION OF VDCCM CONNECTOR. Turn ignition switch to OFF.	Is VDCCM connector inserted into VDCCM until the clamp locks onto it?	Go to step 6.	Insert VDCCM connector into VDCCM until the clamp locks onto it.
6	CHECK POWER SUPPLY OF VDCCM. 1) Disconnect connector from VDCCM. 2) Start engine. 3) Idle the engine. 4) Measure voltage between VDCCM connector and chassis ground. Connector & terminal (F87) No. 28 (+) — Chassis ground (-):	Is the voltage between 10 and 15 V?	Go to step 7.	Repair VDCCM power supply circuit.
7	CHECK GROUND CIRCUIT OF VDCCM. 1) Turn ignition switch to OFF. 2) Measure resistance between VDCCM connector and chassis ground. Connector & terminal (F87) No. 1 — Chassis ground: (F87) No. 55 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 8.	Repair harness/ connector between VDCCM and chassis ground.
8	CHECK HARNESS/CONNECTOR BETWEEN VDCCM AND DATA LINK CONNECTOR. 1) Turn ignition switch OFF. 2) Measure resistance between VDCCM connector and data link connector. Connector & terminal (F87) No. 11 — (B40) No. 5: (F87) No. 38 — (B40) No. 4:	Is the resistance less than 0.5 Ω ?	Go to step 9.	Repair harness and connector between VDCCM and data link con- nector.
9	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in connectors between VDCCM and data link connector?	Repair connector.	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>

VDC (Diagnostics)

B: DTC 21 FRONT RIGHT ABS SENSOR CIRCUIT OPEN OR SHORTED BATTERY 5005504/37

NOTE:

For diagnostic procedure, refer to DTC 27. <Ref. to VDC-132, DTC 27 REAR LEFT ABS SENSOR CIRCUIT OPEN OR SHORTED BATTERY, Diagnostics Chart with Select Monitor.>

C: DTC 23 FRONT LEFT ABS SENSOR CIRCUIT OPEN OR SHORTED BATTERY 5005504/38

NOTE:

For diagnostic procedure, refer to DTC 27. <Ref. to VDC-132, DTC 27 REAR LEFT ABS SENSOR CIRCUIT OPEN OR SHORTED BATTERY, Diagnostics Chart with Select Monitor.>

D: DTC 25 REAR RIGHT ABS SENSOR CIRCUIT OPEN OR SHORTED BATTERY 5005504J39

NOTE:

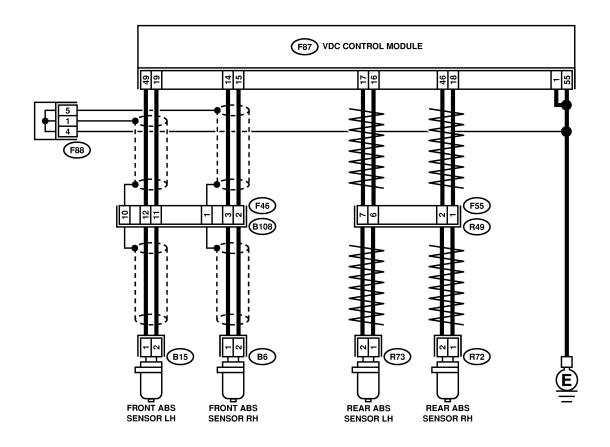
For diagnostic procedure, refer to DTC 27. <Ref. to VDC-132, DTC 27 REAR LEFT ABS SENSOR CIRCUIT OPEN OR SHORTED BATTERY, Diagnostics Chart with Select Monitor.>

E: DTC 27 REAR LEFT ABS SENSOR CIRCUIT OPEN OR SHORTED BATTERY 5005504J40

DIAGNOSIS:

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

- ABS does not operate.
- VDC does not operate.



F55	F88	B6	F46
1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	B15 R72 R73	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 29 29 30 31 32

		(18)																														
	1	2	2	3	7	ļ.	5	-	6	7	8	9		0 .	11	12 1	3 1	4 1	5 1	16 1	7 1	8 1	9 2	0 2	1 2	22	23	24	25	26	27	28
D	$\sqrt{2}$	29	30	П	31	32		33	34	1 3	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	5	2 5	3 :	54 5	55 🗙
	<	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81 8	2 83			<	

No.	Step	Check	Yes	No
1	CHECK OUTPUT OF ABS SENSOR USING SELECT MONITOR. 1) Select "Current data display & Save" on the select monitor. 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 straight-ahead position?	Go to step 2.	Go to step 9.
2	CHECK INSTALLATION OF ABS SENSOR. Tightening torque: 32±10 N⋅m (3.3±1.0 kgf-m, 24±7 ft-lb)	Are the ABS sensor installation bolts tightened securely?	Go to step 3.	Tighten ABS sensor installation bolts securely.
3	CHECK ABS SENSOR GAP. Measure tone wheel-to-pole piece gap over entire perimeter of the wheel. Specifications Front wheel 0.3 — 0.8 mm (0.012 — 0.031 in) Rear wheel 0.44 — 0.94 mm (0.0173 — 0.0370 in)	Is the gap within the specifications?	Go to step 4.	Adjust the gap. NOTE: Adjust the gap using spacers (Part No. 26755AA000). If spacers cannot correct the gap, replace worn sen- sor or worn tone wheel.
4	CHECK TONE WHEEL RUNOUT. Measure tone wheel runout.	Is the runout less than 0.05 mm (0.0020 in)?	Go to step 5.	Repair tone wheel. Front <ref. to VDC-30, Front Tone Wheel.> Rear <ref. to<br="">VDC-31, Rear Tone Wheel.></ref.></ref.
5	CHECK POOR CONTACT IN CONNECTORS. Turn ignition switch to OFF.	Is there poor contact in connectors between VDCCM and ABS sensor?	Repair connector.	Go to step 6.
6	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 7.
7	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact. NOTE: Check harness and connectors between VDCCM and ABS sensor.
8	CHECK ABS SENSOR. 1) Turn ignition switch to OFF. 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:	Is the resistance between 1.0 and 1.5 k Ω ?	Go to step 9.	Replace ABS sensor. Front <ref. abs="" front="" sensor.="" to="" vdc-28,=""> Rear <ref. abs="" rear="" sensor.="" to="" vdc-29,=""></ref.></ref.>

No.	Step	Check	Yes	No
9	CHECK BATTERY SHORT OF ABS SENSOR. 1) Disconnect connector from VDCCM. 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 (-):	Is the voltage less than 1 V?	Go to step 10.	Replace ABS sensor. Front <ref. abs="" front="" sensor.="" to="" vdc-28,=""> Rear <ref. abs="" rear="" sensor.="" to="" vdc-29,=""></ref.></ref.>
10	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 (-):	Is the voltage less than 1 V?	Go to step 11.	Replace ABS sensor. Front <ref. abs="" front="" sensor.="" to="" vdc-28,=""> Rear <ref. abs="" rear="" sensor.="" to="" vdc-29,=""></ref.></ref.>
11	CHECK HARNESS/CONNECTOR BETWEEN VDCCM AND ABS SENSOR. 1) Turn ignition switch to OFF. 2) Connect connector to ABS sensor. 3) Measure resistance between VDCCM connector terminals. Connector & terminal DTC 21 / (F87) No. 14 — No. 15: DTC 23 / (F87) No. 49 — No. 19: DTC 25 / (F87) No. 18 — No. 46: DTC 27 / (F87) No. 16 — No. 17:	Is the resistance between 1.0 and 1.5 kΩ?	Go to step 12.	Repair harness/ connector between VDCCM and ABS sensor.
12	CHECK BATTERY SHORT OF HARNESS. Measure voltage between VDCCM connector and chassis ground. Connector & terminal DTC 21 / (F87) No. 14 (+) — Chassis ground (-): DTC 23 / (F87) No. 49 (+) — Chassis ground (-): DTC 25 / (F87) No. 18 (+) — Chassis ground (-): DTC 27 / (F87) No. 16 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 13.	Repair harness between VDCCM and ABS sensor.

No.	Step	Check	Yes	No
13	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to ON. 2) Measure voltage between VDCCM connector and chassis ground. Connector & terminal DTC 21 / (F87) No. 14 (+) — Chassis ground (-): DTC 23 / (F87) No. 49 (+) — Chassis ground (-): DTC 25 / (F87) No. 18 (+) — Chassis ground (-): DTC 27 / (F87) No. 16 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 14.	Repair harness between VDCCM and ABS sensor.
14	CHECK INSTALLATION OF ABS SENSOR. Tightening torque: 32±10 N·m (3.3±1.0 kgf-m, 24±7 ft-lb)	Are the ABS sensor installation bolts tightened securely?	Go to step 15.	Tighten ABS sensor installation bolts securely.
15	CHECK ABS SENSOR GAP. Measure tone wheel-to-pole piece gap over entire perimeter of the wheel. Specifications Front wheel 0.3 — 0.8 mm (0.012 — 0.031 in) Rear wheel 0.44 — 0.94 mm (0.0173 — 0.0370 in)	Is the gap within the specifications?	Go to step 16.	Adjust the gap. NOTE: Adjust the gap using spacers (Part No. 26755AA000). If spacers cannot correct the gap, replace worn sen- sor or worn tone wheel.
16	CHECK HUB AND TONE WHEEL RUNOUT. Measure hub and tone wheel runout.	Is the runout less than 0.05 mm (0.0020 in)?	Go to step 17.	Repair hub and tone wheel. Front <ref. to="" vdc-28,<br="">Front ABS Sen- sor.> Rear <ref. to VDC-29, Rear ABS Sensor.></ref. </ref.>
17	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in connectors between VDCCM and ABS sensor?	Repair connector.	Go to step 18.
18	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 19.
19	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact. NOTE: Check harness and connectors between VDCCM and ABS sensor.

VDC (Diagnostics)

MEMO:

VDC (Diagnostics)

F: DTC 22 FRONT RIGHT ABS SENSOR SIGNAL SOOSSOAJA1

NOTE:

For diagnostic procedure, refer to DTC 28. <Ref. to VDC-138, DTC 28 REAR LEFT ABS SENSOR SIGNAL, Diagnostics Chart with Select Monitor.>

G: DTC 24 FRONT LEFT ABS SENSOR SIGNAL S005504J42

NOTE:

For diagnostic procedure, refer to DTC 28. <Ref. to VDC-138, DTC 28 REAR LEFT ABS SENSOR SIGNAL, Diagnostics Chart with Select Monitor.>

H: DTC 26 REAR RIGHT ABS SENSOR SIGNAL SOOSSOOAJAS

NOTE:

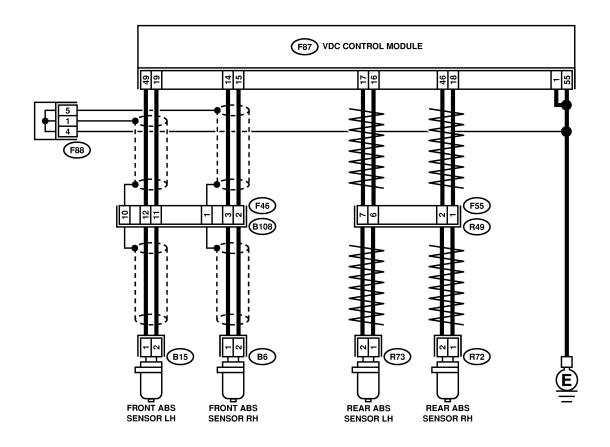
For diagnostic procedure, refer to DTC 28. <Ref. to VDC-138, DTC 28 REAR LEFT ABS SENSOR SIGNAL, Diagnostics Chart with Select Monitor.>

I: DTC 28 REAR LEFT ABS SENSOR SIGNAL SODSSONAJAA

DIAGNOSIS:

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

- ABS does not operate.
- VDC does not operate.



F55	F88	B6	F46
1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	B15 R72 R73	1 2 3 4

											(F87)												
1 2 3	3 4	5	6	7	, E) 1	0 .	11	12	13 1	4 1	5 1	16 1	7 1	8 1	9 20) 21	22	23	24	25	26	27	28
29 30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52 5	3 54	55	\boxtimes
56 57 5	8 59	60 61	62 63	3 64	4 65	66	67	68	69	70	71	72	73	74	75	76	77	78	79 8	0 81	82 83		>		

No.	Step	Check	Yes	No
1	CHECK OUTPUT OF ABS SENSOR USING SELECT MONITOR. 1) Select "Current data display & Save" on the select monitor. 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 straight-ahead position?	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 VDCCM and ABS sensor?	Repair connector.	Go to step 3.
3	CHECK SOURCES OF SIGNAL NOISE.	Is the car telephone or the wireless transmitter properly installed?	Go to step 4.	Properly install the car telephone or the wireless transmitter.
4	CHECK SOURCES OF SIGNAL NOISE.	Are noise sources (such as an antenna) installed near the sensor harness?	Install the noise sources apart from the sensor harness.	Go to step 5.
5	CHECK SHIELD CIRCUIT. 1) Turn ignition switch to OFF. 2) Connect all connectors. 3) Measure resistance between shield connector and chassis ground. Connector & terminal DTC 22 / (B108) No. 1 — Chassis ground: DTC 24 / (B108) No. 10 — Chassis ground: NOTE: For the DTC 26 and 28, Go to step 6.	Is the resistance less than 0.5 Ω ?	Go to step 6.	Repair shield harness.
6	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 7.
7	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary noise interference.
8	CHECK INSTALLATION OF ABS SENSOR. Tightening torque: 32±10 N·m (3.3±1.0 kgf-m, 24±7 ft-lb)	Are the ABS sensor installation bolts tightened securely?	Go to step 9.	Tighten ABS sensor installation bolts securely.
9	CHECK ABS SENSOR GAP. Measure tone wheel to pole piece gap over entire perimeter of the wheel. Specifications Front wheel 0.3 — 0.8 mm (0.012 — 0.031 in) Rear wheel 0.44 — 0.94 mm (0.0173 — 0.0370 in)	Is the gap within the specifications?	Go to step 10.	Adjust the gap. NOTE: Adjust the gap using spacer (Part No. 26755AA000). If spacers cannot correct the gap, replace worn sen- sor or worn tone wheel.
10	CHECK OSCILLOSCOPE.	Is an oscilloscope available?	Go to step 11.	Go to step 12.

No.	Step	Check	Yes	No
11	CHECK ABS SENSOR SIGNAL. 1) Raise all four wheels of ground. 2) Turn ignition switch OFF. 3) Remove VDCCM connector cover. <ref. connector="" cover.="" to="" vdc-17,="" vdccm=""> 4) Connect the oscilloscope to the connector. 5) Turn ignition switch ON. 6) Rotate wheels and measure voltage at specified frequency. NOTE: When this inspection is completed, the VDCCM sometimes stores the DTC 29. Connector & terminal DTC 22 / (F87) No. 14 (+) — No. 15 (-): DTC 24 / (F87) No. 49 (+) — No. 19 (-): DTC 26 / (F87) No. 18 (+) — No. 46 (-): DTC 28 / (F87) No. 16 (+) — No. 17 (-):</ref.>	Is oscilloscope pattern smooth, as shown in figure?	Go to step 15.	Go to step 12.
12	CHECK CONTAMINATION OF ABS SENSOR OR TONE WHEEL. Remove disc rotor or drum from hub in accordance with diagnostic trouble code.	Is the ABS sensor pole piece or the tone wheel contaminated by dirt or other foreign matter?	Thoroughly remove dirt or other foreign matter.	Go to step 13.
13	CHECK DAMAGE OF ABS SENSOR OR TONE WHEEL.	Are there broken or damaged in the ABS sensor pole piece or the tone wheel?	Replace ABS sensor or tone wheel. Front <ref. abs="" front="" sensor.="" to="" vdc-28,=""> and <ref. front="" to="" tone="" vdc-30,="" wheel.=""> Rear <ref. abs="" rear="" sensor.="" to="" vdc-29,=""> and <ref. rear="" to="" tone="" vdc-31,="" wheel.=""></ref.></ref.></ref.></ref.>	Go to step 14.
14	CHECK TONE WHEEL RUNOUT. Measure tone wheel runout.	Is the runout less than 0.05 mm (0.0020 in)?	Go to step 15.	Repair tone wheel. Front <ref. front="" to="" tone="" vdc-30,="" wheel.=""> Rear <ref. rear="" to="" tone="" vdc-31,="" wheel.=""></ref.></ref.>
15	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:	Is the resistance between 1.0 and 1.5 k Ω ?	Go to step 16.	Replace ABS sensor. Front <ref. abs="" front="" sensor.="" to="" vdc-28,=""> Rear <ref. abs="" rear="" sensor.="" to="" vdc-29,=""></ref.></ref.>
16	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:	Is the resistance more than 1 M Ω ?	Go to step 17.	Replace ABS sensor. Front <ref. abs="" front="" sensor.="" to="" vdc-28,=""> Rear <ref. abs="" rear="" sensor.="" to="" vdc-29,=""></ref.></ref.>

No.	Step	Check	Yes	No
17	CHECK HARNESS/CONNECTOR	Is the resistance between	Go to step 18.	Repair harness/
	BETWEEN VDCCM AND ABS SENSOR.	1.0 and 1.5 kΩ?		connector
	1) Connect connector to ABS sensor.			between VDCCM
	2) Disconnect connector from VDCCM.			and ABS sensor.
	3) Measure resistance at VDCCM connector			
	terminals.			
	Connector & terminal			
	DTC 22 / (F87) No. 14 — No. 15:			
	DTC 24 / (F87) No. 49 — No. 19:			
	DTC 26 / (F87) No. 18 — No. 46: DTC 28 / (F87) No. 16 — No. 17:			
18	CHECK GROUND SHORT OF HARNESS.	Is the resistance more than	Go to step 19.	Repair harness/
10	Measure resistance between VDCCM connec-	1 M Ω ?	Go to step 19.	connector
	tor and chassis ground.	1 10122:		between VDCCM
	Connector & terminal			and ABS sensor.
	DTC 22 / (F87) No. 14 — Chassis			and Abo scrisor.
	ground:			
	DTC 24 / (F87) No. 49 — Chassis			
	ground:			
	DTC 26 / (F87) No. 18 — Chassis			
	ground:			
	DTC 28 / (F87) No. 16 — Chassis			
	ground:			
19	CHECK GROUND CIRCUIT OF VDCCM.	Is the resistance less than	Go to step 20.	Repair VDCCM
	Measure resistance between VDCCM and	0.5 Ω?		ground harness.
	chassis ground.			
	Connector & terminal			
	(F87) No. 1 — Chassis ground:			
	(F87) No. 55 — Chassis ground:		5	0
20	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in	Repair connector.	Go to step 21.
	IORS.	connectors between VDCCM and ABS sensor?		
01	CHECK COMBOES OF SIGNAL MOISE		O a to atom 00	Duanauli, inatall
21	CHECK SOURCES OF SIGNAL NOISE.	Is the car telephone or the wireless transmitter prop-	Go to step 22.	Properly install the car telephone
		erly installed?		or the wireless
		erry mistalieu:		transmitter.
22	CHECK SOURCES OF SIGNAL NOISE.	Are noise sources (such as	Install the noise	Go to step 23.
	CHECK SOUTIOES OF SIGNAL NOISE.	an antenna) installed near	sources apart	GO 10 316p 23 .
		the sensor harness?	from the sensor	
			harness.	
23	CHECK SHIELD CIRCUIT.	Is the resistance less than	Go to step 24.	Repair shield har-
-	1) Connect all connectors.	0.5Ω ?		ness.
	2) Measure resistance between shield con-			
	nector and chassis ground.			
	Connector & terminal			
	DTC 22 / (B62) No. A5 — Chassis			
	ground:			
	DTC 24 / (B62) No. A6 — Chassis			
	ground:			
	NOTE:			
	For the DTC 26 and 28, Go to step 25.			
24	CHECK VDCCM.	Is the same diagnostic	Replace VDCCM.	Go to step 25.
	1) Connect all connectors.	trouble code as in the cur-	<ref. td="" to="" vdc-9,<=""><td></td></ref.>	
	2) Erase the memory.	rent diagnosis still being	VDC Control Mod-	
	3) Perform inspection mode.	output?	ule (VDCCM).>	
	4) Read out the diagnostic trouble code.			

VDC (Diagnostics)

No.	Step	Check	Yes	No
25	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?		A temporary noise interference.

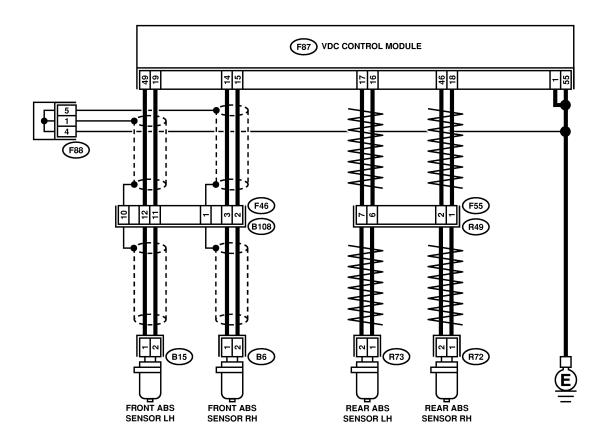
VDC (Diagnostics)

J: DTC 29 ANY ONE OF FOUR ABS SENSOR SIGNAL S005504J45

DIAGNOSIS:

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

- ABS does not operate.
- VDC does not operate.



F55	F88	B6	F46
1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8	(B15) (R72)	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
		(R73)	

																		F	37)															
1	1	2	3		4	5		6	7		8	9	1	0	11	12	13	14	15	16	1	7 .	18	19	20	21	22	2	23	24	25	26	27	28
$\langle \cdot \rangle$	29	3	0	31	3.	2	33	3	4	35	3	36	37	38	39	40	4	1 4	2 -	43	44	45	46	4	7	48	49	50	5	1 5	2 5	3 {	54	55 🗙
\leq	56	57	58	59	9 60	61	6	2 63	64	65	5 6	66	67	68	69	70	7	1 7	2	73	74	75	76	7	7	78	79	80	81	82 83		<u> </u>	<	<

No.	Step	Check	Yes	No
1	CHECK IF THE WHEELS HAVE TURNED	Check if the wheels have	The VDC is nor-	Go to step 2.
	FREELY FOR A LONG TIME.	been turned freely for more	mal. Erase the	0.0 10 010 2.
		than one minute, such as	diagnostic trouble	
		when the vehicle is jacked-	code.	
		up, under full-lock corner-	NOTE:	
		ing or when tire is not in	When the wheels	
		contact with road surface.	turn freely for a	
			long time, such as when the vehicle	
			is towed or	
			jacked-up, or	
			when steering	
			wheel is continu-	
			ously turned all	
			the way, this	
			trouble code may	
			sometimes occur.	
2	CHECK TIRE SPECIFICATIONS.	Are the tire specifications correct?	Go to step 3.	Replace tire.
3	CHECK WEAR OF TIRE.	Is the tire worn exces-	Replace tire.	Go to step 4.
	OUTON TIPE PRESSURE	sively?	0-15	A disease time are a
4	CHECK TIRE PRESSURE.	Is the tire pressure correct?	Go to step 5.	Adjust tire pressure.
5	CHECK INSTALLATION OF ABS SENSOR.	Are the ABS sensor instal-	Go to step 6.	Tighten ABS sen-
	Tightening torque:	lation bolts tightened		sor installation
	32±10 N·m (3.3±1.0 kgf-m, 24±7 ft-lb)	securely?	–	bolts securely.
6	CHECK ABS SENSOR GAP.	Is the gap within the specifications?	Go to step 7.	Adjust the gap.
	Measure tone wheel to pole piece gap over entire perimeter of the wheel.	ilcations?		Adjust the gap
	Specifications			using spacer (Part
	Front wheel			No. 26755AA000).
	0.3 — 0.8 mm (0.012 — 0.031 in)			If spacers cannot
	Rear wheel			correct the gap,
	0.44 — 0.94 mm (0.0173 — 0.0370 in)			replace worn sen-
				sor or worn tone
7	CHECK OSCILLOSCOPE.	Is an oscilloscope avail-	Go to step 8.	wheel. Go to step 9.
		able?	·	·
8	CHECK ABS SENSOR SIGNAL.	Is oscilloscope pattern	Go to step 12.	Go to step 9.
	1) Raise all four wheels.	smooth, as shown in fig-		
	2) Turn ignition switch OFF.	ure?		
	3) Remove VDCCM connector cover. <ref. th="" to<=""><th></th><th></th><th></th></ref.>			
	VDC-17, VDCCM Connector Cover.> 4) Connect the oscilloscope to the connector.			
	5) Turn ignition switch ON.			
	6) Rotate wheels and measure voltage at			
	specified frequency.			
	NOTE:			
	When this inspection is completed, the			
	VDCCM sometimes stores the DTC 29.			
	Connector & terminal			
	(F49) No. 14 (+) — No. 15 (-) (Front RH):			
	(F49) No. 49 (+) — No. 19 (-) (Front			
	LH):			
	(F49) No. 18 (+) — No. 46 (-) (Rear			
	RH):			
	(F49) No. 16 (+) — No. 17 (-) (Rear LH):			

No.	Step	Check	Yes	No
9	CHECK CONTAMINATION OF ABS SENSOR OR TONE WHEEL. Remove disc rotor from hub.	Is the ABS sensor pole piece or the tone wheel contaminated by dirt or other foreign matter?	Thoroughly remove dirt or other foreign matter.	Go to step 10.
10	CHECK DAMAGE OF ABS SENSOR OR TONE WHEEL.	Are there broken or damaged teeth in the ABS sensor pole piece or the tone wheel?	Replace ABS sensor or tone wheel. Front <ref. abs="" front="" sensor.="" to="" vdc-28,=""> and <ref. front="" to="" tone="" vdc-30,="" wheel.=""> Rear <ref. abs="" rear="" sensor.="" to="" vdc-29,=""> and <ref. rear="" to="" tone="" vdc-31,="" wheel.=""></ref.></ref.></ref.></ref.>	Go to step 11.
11	CHECK TONE WHEEL RUNOUT. Measure tone wheel runout.	Is the runout less than 0.05 mm (0.0020 in)?	Go to step 12.	Repair tone wheel. Front <ref. to VDC-30, Front Tone Wheel.> Rear <ref. to<br="">VDC-31, Rear Tone Wheel.></ref.></ref.
12	CHECK VDCCM. 1) Turn ignition switch to OFF. 2) Connect all connectors. 3) Erase the memory. 4) Perform inspection mode. 5) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 13.
13	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

VDC (Diagnostics)

K: DTC 31 FR HOLD VALVE MALFUNCTION (FRONT RIGHT INLET VALVE MALFUNCTION) 5005504J46

NOTE:

For diagnostic procedure, refer to DTC 62. <Ref. to VDC-148, DTC 62 NORMAL OPENING VALVE 1 MALFUNCTION (SECONDARY CUT VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

L: DTC 33 FL HOLD VALVE MALFUNCTION (FRONT LEFT INLET VALVE MALFUNCTION) 5005504,J47

NOTE:

For diagnostic procedure, refer to DTC 62. <Ref. to VDC-148, DTC 62 NORMAL OPENING VALVE 1 MALFUNCTION (SECONDARY CUT VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

M: DTC 35 RR HOLD VALVE MALFUNCTION (REAR RIGHT INLET VALVE MALFUNCTION) 5005504J48

NOTE:

For diagnostic procedure, refer to DTC 62. <Ref. to VDC-148, DTC 62 NORMAL OPENING VALVE 1 MALFUNCTION (SECONDARY CUT VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

N: DTC 37 RL HOLD VALVE MALFUNCTION (REAR LEFT INLET VALVE MALFUNCTION) 5005504J49

NOTE:

For diagnostic procedure, refer to DTC 62. <Ref. to VDC-148, DTC 62 NORMAL OPENING VALVE 1 MALFUNCTION (SECONDARY CUT VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

O: DTC 61 NORMAL OPENING VALVE 2 MALFUNCTION (PRIMARY CUT VALVE MALFUNCTION) 5005504J50

NOTE:

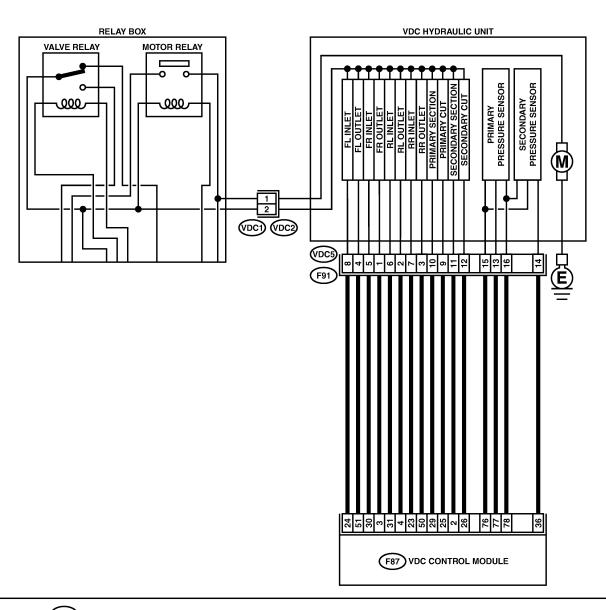
For diagnostic procedure, refer to DTC 62. <Ref. to VDC-148, DTC 62 NORMAL OPENING VALVE 1 MALFUNCTION (SECONDARY CUT VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

P: DTC 62 NORMAL OPENING VALVE 1 MALFUNCTION (SECONDARY CUT VALVE MALFUNCTION) 5005504J51

DIAGNOSIS:

- Faulty harness/connector
- Faulty solenoid valve in VDCH/U

- ABS does not operate.
- VDC does not operate.



VDC11 2



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1	2	3	-	4	5	6	7	7	3 :)	10	11	12	13	14	15	16	17	7 1	8 1	19	20	21	22	23	24	25	26	27	28
\boxtimes	29	30	31	32		33 3	34	35	36	37	38	39	40	41	42	2 4	43	44	45	46	47	48	3 4	19 5	0 5	51 5	2 5	3 5	4	55 🗙
\geq	56 57	7 58	59	60	61	62 63	6	4 65	66	67	68	69	70	71	72		73	74	75	76	77	78	3 7	79 80	81	82 83		\geq	_	

No.	Step	Check	Yes	No
1	CHECK RESISTANCE OF SOLENOID VALVE. 1) Turn ignition switch to OFF. 2) Disconnect two connectors (VDC1, F91) from VDCH/U. 3) Measure resistance between VDCH/U connector terminals. Connector & terminal DTC 31/(VDC5) No. 5 — (VDC2) No. 2: DTC 33/(VDC5) No. 7 — (VDC2) No. 2: DTC 35/(VDC5) No. 6 — (VDC2) No. 2: DTC 37/(VDC5) No. 6 — (VDC2) No. 2: DTC 61/(VDC5) No. 9 — (VDC2) No. 2: DTC 62/(VDC5) No. 12 — (VDC2) No. 2:	Is the resistance between 8.04 and 9.04 Ω ?	Go to step 2.	Replace VDCH/U. <ref. to="" vdc-11,<br="">Hydraulic Control Unit (H/U).></ref.>
2	CHECK GROUND SHORT OF SOLENOID VALVE. Measure resistance between VDCH/U connector and chassis ground. Connector & terminal DTC 31/(VDC5) No. 5 — Chassis ground: DTC 33/(VDC5) No. 8 — Chassis ground: DTC 35/(VDC5) No. 7 — Chassis ground: DTC 37/(VDC5) No. 6 — Chassis ground: DTC 61/(VDC5) No. 9 — Chassis ground: DTC 61/(VDC5) No. 12 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 3.	Replace VDCH/U. <ref. to="" vdc-11,<br="">Hydraulic Control Unit (H/U).></ref.>
3	CHECK BATTERY SHORT OF SOLENOID VALVE. 1) Disconnect connector from VDCCM. 2) Measure voltage between VDCH/U connector and chassis ground. Connector & terminal DTC 31/(VDC5) No. 5 (+) — Chassis ground (-): DTC 33/(VDC5) No. 8 (+) — Chassis ground (-): DTC 35/(VDC5) No. 7 (+) — Chassis ground (-): DTC 37/(VDC5) No. 6 (+) — Chassis ground (-): DTC 61/(VDC5) No. 9 (+) — Chassis ground (-): DTC 62/(VDC5) No. 12 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 4.	Replace VDCH/U. <ref. to="" vdc-11,<br="">Hydraulic Control Unit (H/U).></ref.>

No.	Step	Check	Yes	No
4	CHECK BATTERY SHORT OF SOLENOID VALVE. 1) Turn ignition switch to ON. 2) Measure voltage between VDCH/U connector and chassis ground. Connector & terminal DTC 31/(VDC5) No. 5 (+) — Chassis ground (-): DTC 33/(VDC5) No. 8 (+) — Chassis ground (-): DTC 35/(VDC5) No. 7 (+) — Chassis ground (-): DTC 37/(VDC5) No. 6 (+) — Chassis ground (-): DTC 61/(VDC5) No. 9 (+) — Chassis ground (-): DTC 62/(VDC5) No. 12 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 5.	Replace VDCH/U. <ref. to="" vdc-11,<br="">Hydraulic Control Unit (H/U).></ref.>
5	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to OFF. 2) Measure voltage between VDCCM connector and chassis ground. Connector & terminal DTC 31/(F87) No. 30 (+) — Chassis ground (-): DTC 33/(F87) No. 24 (+) — Chassis ground (-): DTC 35/(F87) No. 23 (+) — Chassis ground (-): DTC 37/(F87) No. 31 (+) — Chassis ground (-): DTC 61/(F87) No. 25 (+) — Chassis ground (-): DTC 62/(F87) No. 26 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 6.	Repair harness between VDCCM and VDCH/U.
6	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to ON. 2) Measure voltage between VDCCM connector and chassis ground. Connector & terminal DTC 31/(F87) No. 30 (+) — Chassis ground (-): DTC 33/(F87) No. 24 (+) — Chassis ground (-): DTC 35/(F87) No. 23 (+) — Chassis ground (-): DTC 37/(F87) No. 31 (+) — Chassis ground (-): DTC 61/(F87) No. 25 (+) — Chassis ground (-): DTC 62/(F87) No. 26 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 7.	Repair harness between VDCCM and VDCH/U.

No.	Step	Check	Yes	No
7	CHECK GROUND SHORT OF HARNESS. 1) Turn ignition switch to OFF. 2) Measure resistance between VDCCM connector and chassis ground. Connector & terminal DTC 31/(F87) No. 30 — Chassis ground: DTC 33/(F87) No. 24 — Chassis ground: DTC 35/(F87) No. 23 — Chassis ground: DTC 37/(F87) No. 31 — Chassis ground: DTC 61/(F87) No. 25 — Chassis ground: DTC 62/(F87) No. 26 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 8.	Repair harness between VDCCM and VDCH/U.
8	CHECK HARNESS/CONNECTOR BETWEEN VDCCM AND VDCH/U. 1) Connect connector (F91) to VDCH/U. 2) Measure resistance between VDCCM connector and VDCH/U connector. Connector & terminal DTC 31/(F87) No. 30 — (VDC2) No. 2: DTC 33/(F87) No. 24 — (VDC2) No. 2: DTC 35/(F87) No. 23 — (VDC2) No. 2: DTC 37/(F87) No. 31— (VDC2) No. 2: DTC 61/(F87) No. 25 — (VDC2) No. 2: DTC 62/(F87) No. 26 — (VDC2) No. 2:	Is the resistance between 7 and 10 Ω ?	Go to step 9.	Repair harness/ connector between VDCCM and VDCH/U.
9	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in connectors between VDCCM and VDCH/U?	Repair connector.	Go to step 10.
10	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Repair VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 11.
11	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

VDC (Diagnostics)

MEMO:

VDC (Diagnostics)

Q: DTC 32 FR PRESSURE REDUCING VALVE MALFUNCTION (FRONT RIGHT OUTLET VALVE MALFUNCTION) 5005504J52

NOTE:

For diagnostic procedure, refer to DTC 64. <Ref. to VDC-154, DTC 64 NORMAL CLOSING VALVE 1 MAL-FUNCTION (SECONDARY SUCTION VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

R: DTC 34 FL PRESSURE REDUCING VALVE MALFUNCTION (FRONT LEFT OUTLET VALVE MALFUNCTION) 5005504J5

NOTE:

For diagnostic procedure, refer to DTC 64. <Ref. to VDC-154, DTC 64 NORMAL CLOSING VALVE 1 MAL-FUNCTION (SECONDARY SUCTION VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

S: DTC 36 RR PRESSURE REDUCING VALVE MALFUNCTION (REAR RIGHT OUTLET VALVE MALFUNCTION) 5005504J54

NOTE:

For diagnostic procedure, refer to DTC 64. <Ref. to VDC-154, DTC 64 NORMAL CLOSING VALVE 1 MAL-FUNCTION (SECONDARY SUCTION VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

T: DTC 38 RL PRESSURE REDUCING VALVE MALFUNCTION (REAR LEFT OUTLET VALVE MALFUNCTION) 5005504J5

NOTE:

For diagnostic procedure, refer to DTC 64. <Ref. to VDC-154, DTC 64 NORMAL CLOSING VALVE 1 MAL-FUNCTION (SECONDARY SUCTION VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

U: DTC 63 NORMAL CLOSING VALVE 2 MALFUNCTION (PRIMARY SUCTION VALVE MALFUNCTION) 5005504J56

NOTE:

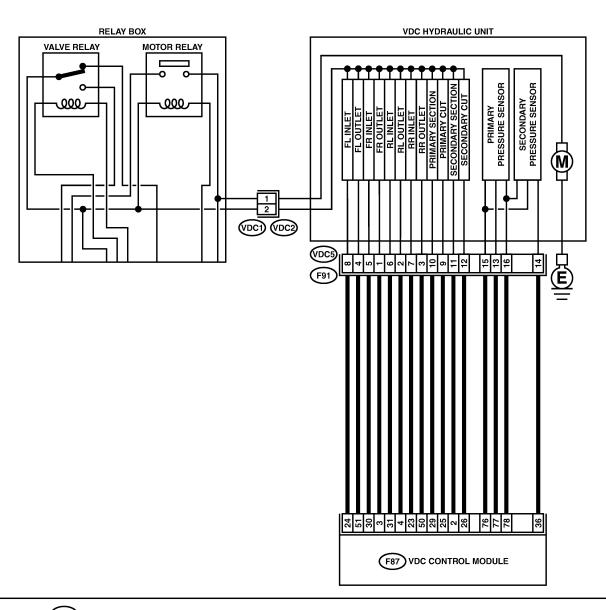
For diagnostic procedure, refer to DTC 64. <Ref. to VDC-154, DTC 64 NORMAL CLOSING VALVE 1 MAL-FUNCTION (SECONDARY SUCTION VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

V: DTC 64 NORMAL CLOSING VALVE 1 MALFUNCTION (SECONDARY SUCTION VALVE MALFUNCTION) 5005504J57

DIAGNOSIS:

- Faulty harness/connector
- Faulty solenoid valve in VDCH/U

- ABS does not operate.
- VDC does not operate.



VDC11 2



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	\times	56	57	58	59	60	61	(62 63	64	65	66	67	68	3 69	70	7		72	73	74	7	5 7	6	77	78	79 8	0	81 8	32 83		>	_	

No.	Step	Check	Yes	No
1	CHECK RESISTANCE OF SOLENOID VALVE. 1) Turn ignition switch to OFF. 2) Disconnect two connectors (VDC1, F91) from VDCH/U. 3) Measure resistance between VDCH/U connector terminals. Connector & terminal DTC 32/(VDC5) No. 1 — (VDC2) No. 2: DTC 34/(VDC5) No. 3 — (VDC2) No. 2: DTC 36/(VDC5) No. 2 — (VDC2) No. 2: DTC 38/(VDC5) No. 10 — (VDC2) No. 2: DTC 63/(VDC5) No. 10 — (VDC2) No. 2: DTC 64/(VDC5) No. 11 — (VDC2) No. 2:	Is the resistance between 3.8 and 4.8 Ω ?	Go to step 2.	Replace VDCH/U. <ref. to="" vdc-11,<br="">Hydraulic Control Unit (H/U).></ref.>
2	CHECK GROUND SHORT OF SOLENOID VALVE. Measure resistance between VDCH/U connector and chassis ground. Connector & terminal DTC 32/(VDC5) No. 1 — Chassis ground: DTC 34/(VDC5) No. 4 — Chassis ground: DTC 36/(VDC5) No. 3 — Chassis ground: DTC 38/(VDC5) No. 2 — Chassis ground: DTC 63/(VDC5) No. 10 — Chassis ground: DTC 63/(VDC5) No. 11 — Chassis ground: DTC 64/(VDC5) No. 11 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 3.	Replace VDCH/U. <ref. to="" vdc-11,<br="">Hydraulic Control Unit (H/U).></ref.>
3	CHECK BATTERY SHORT OF SOLENOID VALVE. 1) Disconnect connector from VDCCM. 2) Measure voltage between VDCH/U connector and chassis ground. Connector & terminal DTC 32/(VDC5) No. 1 (+) — Chassis ground (-): DTC 34/(VDC5) No. 3 (+) — Chassis ground (-): DTC 36/(VDC5) No. 2 (+) — Chassis ground (-): DTC 38/(VDC5) No. 10 (+) — Chassis ground (-): DTC 63/(VDC5) No. 10 (+) — Chassis ground (-): DTC 64/(VDC5) No. 11 (+) — Chassis ground (-): DTC 64/(VDC5) No. 11 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 4.	Replace VDCH/U. <ref. to="" vdc-11,<br="">Hydraulic Control Unit (H/U).></ref.>

No.	Step	Check	Yes	No
4	CHECK BATTERY SHORT OF SOLENOID VALVE. 1) Turn ignition switch to ON. 2) Measure voltage between VDCH/U connector and chassis ground. Connector & terminal DTC 32/(VDC5) No. 1 (+) — Chassis ground (-): DTC 34/(VDC5) No. 4 (+) — Chassis ground (-): DTC 36/(VDC5) No. 3 (+) — Chassis ground (-): DTC 38/(VDC5) No. 2 (+) — Chassis ground (-): DTC 63/(VDC5) No. 10 (+) — Chassis ground (-): DTC 64/(VDC5) No. 11 (+) — Chassis ground (-): DTC 64/(VDC5) No. 11 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 5.	Replace VDCH/U. <ref. to="" vdc-11,<br="">Hydraulic Control Unit (H/U).></ref.>
5	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to OFF. 2) Measure voltage between VDCCM connector and chassis ground. Connector & terminal DTC 32/(F87) No. 3 (+) — Chassis ground (-): DTC 34/(F87) No. 51 (+) — Chassis ground (-): DTC 36/(F87) No. 50 (+) — Chassis ground (-): DTC 38/(F87) No. 4 (+) — Chassis ground (-): DTC 63/(F87) No. 29 (+) — Chassis ground (-): DTC 64/(F87) No. 2 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 6.	Repair harness between VDCCM and VDCH/U.
6	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to ON. 2) Measure voltage between VDCCM connector and chassis ground. Connector & terminal DTC 32/(F87) No. 3 (+) — Chassis ground (-): DTC 34/(F87) No. 51 (+) — Chassis ground (-): DTC 36/(F87) No. 50 (+) — Chassis ground (-): DTC 38/(F87) No. 4 (+) — Chassis ground (-): DTC 63/(F87) No. 29 (+) — Chassis ground (-): DTC 64/(F87) No. 2 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 7.	Repair harness between VDCCM and VDCH/U.

No.	Step	Check	Yes	No
7	CHECK GROUND SHORT OF HARNESS. 1) Turn ignition switch to OFF. 2) Measure resistance between VDCCM connector and chassis ground. Connector & terminal DTC 32/(F87) No. 3 — Chassis ground: DTC 34/(F87) No. 51 — Chassis ground: DTC 36/(F87) No. 50 — Chassis ground: DTC 38/(F87) No. 4 — Chassis ground: DTC 63/(F87) No. 29 — Chassis ground: DTC 64/(F87) No. 2 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 8.	Repair harness between VDCCM and VDCH/U.
8	CHECK HARNESS/CONNECTOR BETWEEN VDCCM AND VDCH/U. 1) Connect connector (F91) to VDCH/U. 2) Measure resistance between VDCCM connector and VDCH/U connector. Connector & terminal DTC 32/(F87) No. 3 — (VDC2) No. 1: DTC 34/(F87) No. 51 — (VDC2) No. 1: DTC 36/(F87) No. 50 — (VDC2) No. 1: DTC 38/(F87) No. 4 — (VDC2) No. 1: DTC 63/(F87) No. 29 — (VDC2) No. 1: DTC 64/(F87) No. 2 — (VDC2) No. 1:	Is the resistance between 4 and 6 Ω ?	Go to step 9.	Repair harness/ connector between VDCCM and VDCH/U.
9	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in connectors between VDCCM and VDCH/U?	Repair connector.	Go to step 10.
10	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 11.
11	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

VDC (Diagnostics)

MEMO:

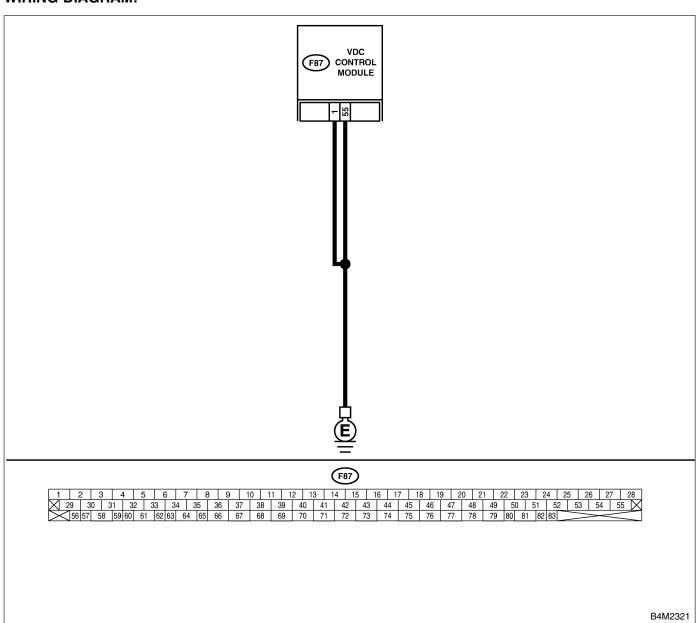
W: DTC 41 ELECTRICAL CONTROL MODULE (VDC CONTROL MODULE MALFUNCTION) 5005504J58

DIAGNOSIS:

Faulty VDCCM

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK GROUND CIRCUIT OF VDCCM. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM. 3) Measure resistance between VDCCM and chassis ground. Connector & terminal (F87) No. 1 — Chassis ground: (F87) No. 55 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 2.	Repair VDCCM ground harness.
2	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in connectors between battery, ignition switch and VDCCM?	Repair connector.	Go to step 3.
3	CHECK SOURCES OF SIGNAL NOISE.	Is the car telephone or the wireless transmitter properly installed?	Go to step 4.	Properly install the car telephone or the wireless transmitter.
4	CHECK SOURCES OF SIGNAL NOISE.	Are noise sources (such as an antenna) installed near the sensor harness?	Install the noise sources apart from the sensor harness.	Go to step 5.
5	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 6.
6	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

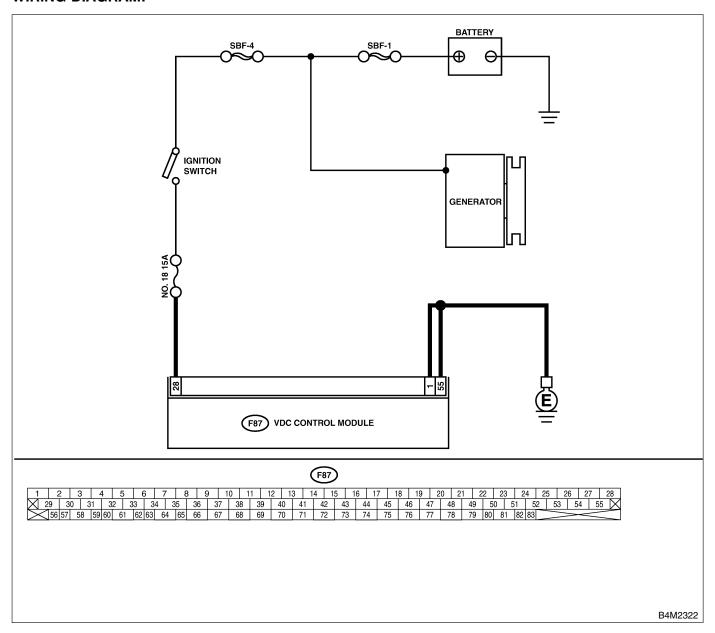
X: DTC 42 POWER SUPPLY VOLTAGE LOW SOOSSOAJS9

DIAGNOSIS:

• Power source voltage of the VDCCM is low.

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.



No.	Step	Check	Yes	No
1	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:	Is the voltage between 10 and 15 V?	Go to step 2.	Repair generator.
2	CHECK BATTERY TERMINAL. Turn ignition switch to OFF.	Are the positive and negative battery terminals tightly clamped?	Go to step 3.	Tighten the clamp of terminal.
3	CHECK INPUT VOLTAGE OF VDCCM. 1) Disconnect connector from VDCCM. 2) Run the engine at idle. 3) Measure voltage between VDCCM connector and chassis ground. Connector & terminal (F87) No. 28 (+) — Chassis ground (-):	Is the voltage between 10 and 15 V?	Go to step 4.	Repair harness connector between battery, ignition switch and VDCCM.
4	CHECK GROUND CIRCUIT OF VDCCM. 1) Turn ignition switch to OFF. 2) Measure resistance between VDCCM and chassis ground. Connector & terminal (F87) No. 1 — Chassis ground: (F87) No. 55 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 5.	Repair VDCCM ground harness.
5	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in connectors between generator, battery and VDCCM?	Repair connector.	Go to step 6.
6	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 7.
7	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

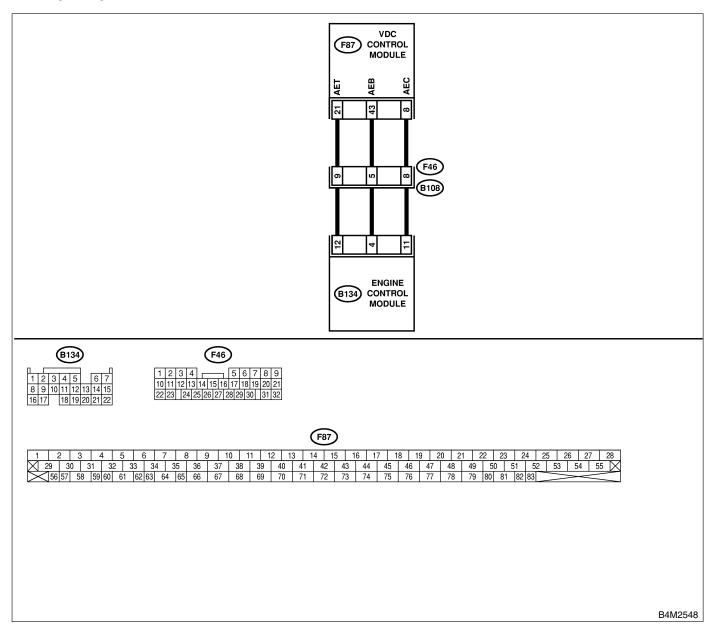
Y: DTC 43 AET COMMUNICATION LINE MALFUNCTION SODSSOAJSO

DIAGNOSIS:

• AET communication line is broken or short circuited.

TROUBLE SYMPTOM:

VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK HARNESS/CONNECTOR BETWEEN VDCCM AND ECM. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM. 3) Disconnect connector from ECM. 4) Measure resistance between VDCCM connector and ECM. Terminal (F87) No. 21 — (B135) No. 6:	Is the resistance less than 0.5 Ω ?	Go to step 2.	Repair harness/ connector between VDCCM and ECM.

No.	Step	Check	Yes	No
2	CHECK GROUND SHORT OF HARNESS.	Is the resistance more than	Go to step 3.	Repair harness/
_	Measure resistance between VDCCM connec-	1 ΜΩ?	GIO TO GIOP C.	connector
	tor and chassis ground.			between VDCCM
	Terminal			and ECM.
	(F87) No. 21 — Chassis ground:			
3	CHECK BATTERY SHORT OF HARNESS.	Is the voltage less than 0.5	Go to step 4.	Repair harness/
	Measure voltage between VDCCM connector and chassis ground.	V?		connector between VDCCM
	Terminal			and ECM.
	(F87) No. 21 (+) — Chassis ground (-):			
4	CHECK BATTERY SHORT OF HARNESS.	Is the voltage less than 1	Go to step 5.	Repair harness/
	1) Turn ignition switch to ON.	V?		connector
	2) Measure voltage between VDCCM connec-			between VDCCM
	tor and chassis ground.			and ECM.
	Terminal (E87) No. 21 (1) Chassis ground (1):			
5	(F87) No. 21 (+) — Chassis ground (-): CHECK HARNESS/CONNECTOR	Is the voltage between 10	Go to step 6.	Go to step 9.
3	BETWEEN VDCCM AND ECM.	and 15 V?	do to step o .	Go to step 3.
	1) Turn ignition switch to OFF.			
	2) Connect connector to ECM.			
	3) Turn ignition switch to ON.			
	4) Measure voltage between VDCCM connector and chassis ground.			
	Connector & terminal			
	(F87) No. 21 (+) — Chassis ground (-):			
6	CHECK POOR CONTACT IN CONNEC-	Is there poor contact in	Repair connector.	Go to step 7.
	TORS.	connectors between ECM		
		and VDCCM?		
7	CHECK VDCCM.	Is the same diagnostic	Replace VDCCM.	Go to step 8.
	Turn ignition switch to OFF. Connect all connectors.	trouble code as in the cur- rent diagnosis still being	<ref. to="" vdc-9,<br="">VDC Control Mod-</ref.>	
	3) Erase the memory.	output?	ule (VDCCM).>	
	4) Perform inspection mode.	oup att	(*200).	
	5) Read out the diagnostic trouble code.			
8	CHECK ANY OTHER DIAGNOSTIC	Are other diagnostic trouble	Proceed with the	A temporary poor
	TROUBLE CODES APPEARANCE.	codes being output?	diagnosis corre-	contact.
			sponding to the	
			diagnostic trouble code.	
9	CHECK ECM.	Is the voltage between 10	Repair harness/	Go to step 10.
-	1) Turn ignition switch to ON.	and 15 V?	connector	33 to stop 10.
	2) Measure voltage between ECM connector		between ECM	
	terminal and chassis ground.		and VDCCM.	
	Connector & terminal			
	(B134) No. 12 (+) — Chassis ground (-):			
10	CHECK POOR CONTACT IN CONNEC-	Is there poor contact in	Repair connector.	Go to step 11.
.0	TORS.	connector ECM?	Tiopaii connector.	GO to stop 11.
11	CHECK ENGINE.	Is the engine functioning	Replace ECM.	Repair engine.
		normally?		

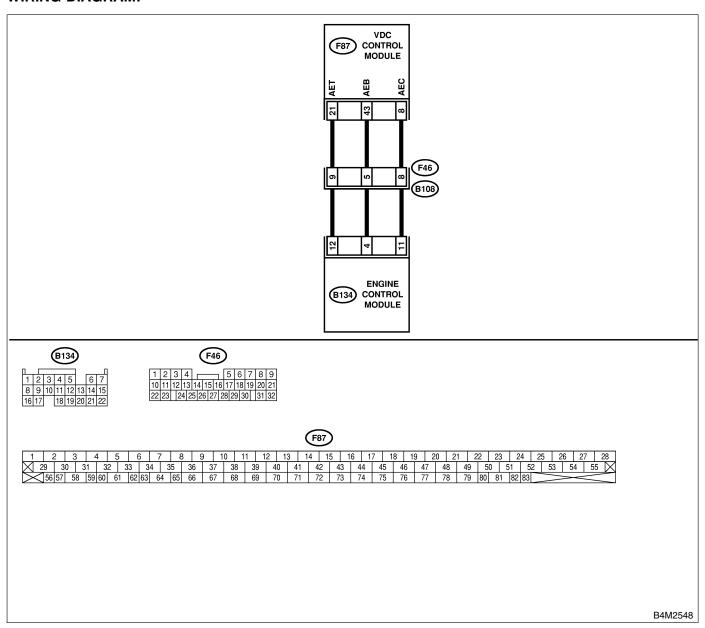
Z: DTC 43 AEB COMMUNICATION LINE MALFUNCTION S005504J61

DIAGNOSIS:

AEB communication line is broken or short circuited.

TROUBLE SYMPTOM:

VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK HARNESS/CONNECTOR BETWEEN VDCCM AND ECM.	Is the resistance less than 0.5Ω ?	Go to step 2.	Repair harness/ connector
	1) Turn ignition switch to OFF.	0.0 12.		between VDCCM
	2) Disconnect connector from VDCCM.			and ECM.
	3) Disconnect connector from ECM.			
	4) Measure resistance between VDCCM con-			
	nector and ECM.			
	Terminal			
	(F87) No. 43 — (B135) No. 4:			
2	CHECK GROUND SHORT OF HARNESS.	Is the resistance more than	Go to step 3.	Repair harness/
	Measure resistance between VDCCM connec-	1 ΜΩ?		connector
	tor and chassis ground.			between VDCCM
	Terminal			and ECM.
	(F87) No. 43 — Chassis ground:			,
3	CHECK BATTERY SHORT OF HARNESS.	Is the voltage less than 0.5	Go to step 4.	Repair harness/
	Measure voltage between VDCCM connector	V?		connector
	and chassis ground.			between VDCCM
	Terminal			and ECM.
Λ	(F87) No. 43 (+) — Chassis ground (-): CHECK BATTERY SHORT OF HARNESS.	lo the veltere less there	Co to star 5	Donois boss /
4		Is the voltage less than 1 V?	Go to step 5.	Repair harness/
	1) Turn ignition switch to ON.	V?		connector between VDCCM
	2) Measure voltage between VDCCM connector and chassis ground.			and ECM.
	Terminal			and Edw.
	(F87) No. 43 (+) — Chassis ground (-):			
5	CHECK HARNESS/CONNECTOR	Is the voltage between 10	Go to step 6.	Go to step 9.
J	BETWEEN VDCCM AND ECM.	and 15 V?	do to step o .	Go to step 9.
	1) Turn ignition switch to OFF.	and 10 V.		
	2) Connect connector to ECM.			
	3) Turn ignition switch to ON.			
	4) Measure voltage between VDCCM connec-			
	tor and chassis ground.			
	Connector & terminal			
	(F87) No. 43 (+) — Chassis ground (-):			
6	CHECK POOR CONTACT IN CONNEC-	Is there poor contact in	Repair connector.	Go to step 7.
	TORS.	connectors between ECM		
		and VDCCM?		
7	CHECK VDCCM.	Is the same diagnostic	Replace VDCCM.	Go to step 8.
	1) Turn ignition switch to OFF.	trouble code as in the cur-	<ref. td="" to="" vdc-9,<=""><td></td></ref.>	
	2) Connect all connectors.	rent diagnosis still being	VDC Control Mod-	
	3) Erase the memory.	output?	ule (VDCCM).>	
	4) Perform inspection mode.			
	5) Read out the diagnostic trouble code.			
8	CHECK ANY OTHER DIAGNOSTIC	Are other diagnostic trouble	Proceed with the	A temporary poor
	TROUBLE CODES APPEARANCE.	codes being output?	diagnosis corre-	contact.
			sponding to the	
			diagnostic trouble code.	
9	CHECK ECM.	le the voltage between 10	Repair harness/	Go to stop 10
J	1) Turn ignition switch to ON.	Is the voltage between 10 and 15 V?	connector	Go to step 10.
	Measure voltage between ECM connector	and 15 v:	between ECM	
	terminal and chassis ground.		and VDCCM.	
	Connector & terminal			
	(B134) No. 5 (+) — Chassis ground (-):			
10	CHECK POOR CONTACT IN CONNEC-	Is there poor contact in	Repair connector.	Go to step 11.
10	TORS.	connector ECM?		3.5 to 5.5p 11.
		0000.01 = 0.W1.	l	I
11	CHECK ENGINE.	Is the engine functioning	Replace ECM.	Repair engine.

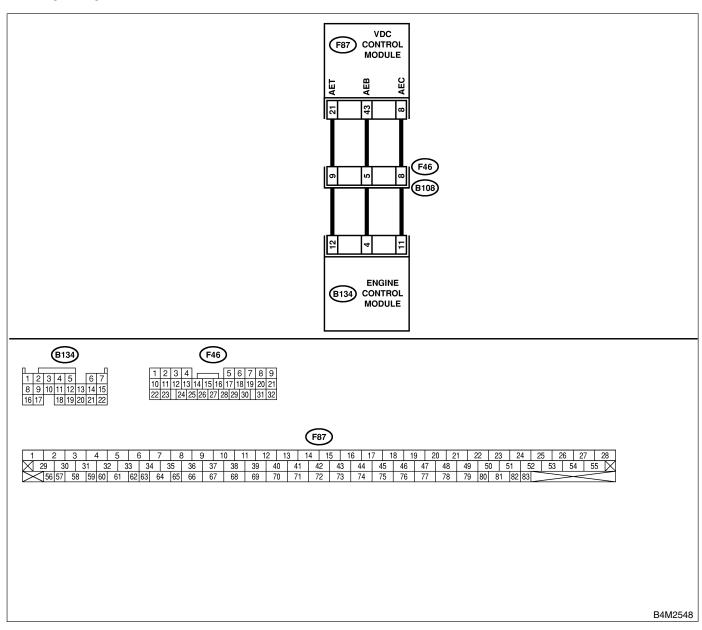
AA: DTC 43 AEC COMMUNICATION LINE MALFUNCTION SODSOONS

DIAGNOSIS:

• AEC communication line is broken or short circuited.

TROUBLE SYMPTOM:

VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK HARNESS/CONNECTOR BETWEEN VDCCM AND ECM. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM. 3) Disconnect connector from ECM. 4) Measure resistance between VDCCM connector and ECM. Terminal (F87) No. 8 — (B135) No. 11:	Is the resistance less than 0.5 Ω ?	Go to step 2.	Repair harness/ connector between VDCCM and ECM.

No.	Step	Check	Yes	No
2	CHECK GROUND SHORT OF HARNESS. Measure resistance between VDCCM connector and chassis ground. Terminal (F87) No. 8 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 3.	Repair harness/ connector between VDCCM and ECM.
3	CHECK BATTERY SHORT OF HARNESS. Measure voltage between VDCCM connector and chassis ground. Terminal (F87) No. 8 (+) — Chassis ground (-):	Is the voltage less than 0.5 V?	Go to step 4.	Repair harness/ connector between VDCCM and ECM.
4	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to ON. 2) Measure voltage between VDCCM connector and chassis ground. Terminal (F87) No. 8 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 5.	Repair harness/ connector between VDCCM and ECM.
5	CHECK HARNESS/CONNECTOR BETWEEN VDCCM AND ECM. 1) Turn ignition switch to OFF. 2) Connect connector to ECM. 3) Turn ignition switch to ON. 4) Measure voltage between VDCCM connector and chassis ground. Connector & terminal (F87) No. 8 (+) — Chassis ground (-):	Is the voltage between 10 and 15 V?	Go to step 6.	Go to step 9.
6	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in connectors between ECM and VDCCM?	Repair connector.	Go to step 7.
7	CHECK VDCCM. 1) Turn ignition switch to OFF. 2) Connect all connectors. 3) Erase the memory. 4) Perform inspection mode. 5) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 8.
8	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.
9	CHECK ECM. 1) Turn ignition switch to ON. 2) Measure voltage between ECM connector terminal and chassis ground. Connector & terminal (B134) No. 11 (+) — Chassis ground (-):	Is the voltage between 10 and 15 V?	Repair harness/ connector between ECM and VDCCM.	Go to step 10.
10	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in connector ECM?	Repair connector.	Go to step 11.
11	CHECK ENGINE.	Is the engine functioning normally?	Replace ECM.	Repair engine.

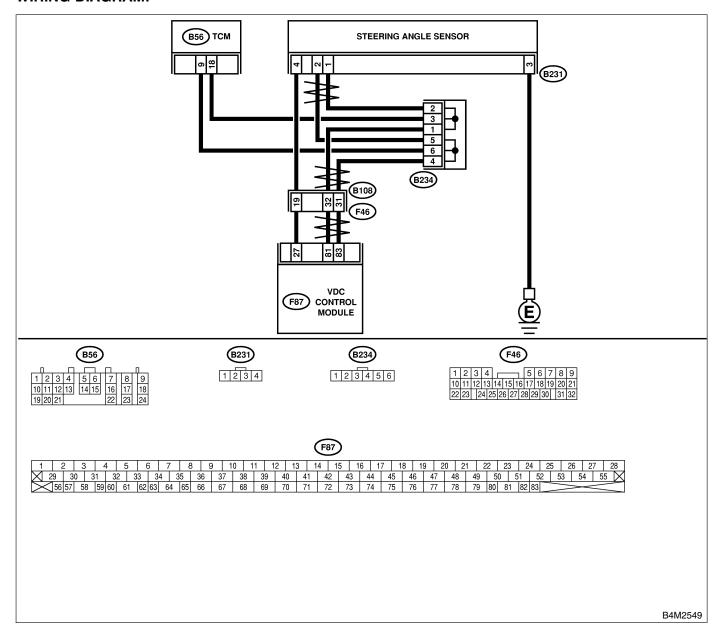
AB: DTC 44 TCM COMMUNICATION CIRCUIT SOOSSOAJES

DIAGNOSIS:

Communication with AT control faults

TROUBLE SYMPTOM:

VDC does not operate.



VDC (Diagnostics)

No.	Step	Check	Yes	No
1	CHECK RESISTANCE OF HARNESS. 1) Turn ignition switch to OFF. 2) Disconnect two connectors from TCM. 3) Measure resistance between TCM connector terminals. Connector & terminal (B56) No. 9 — No. 18:	Is the resistance 60±3 Ω?	Go to step 2.	Repair harness between TCM and VDCCM.
2	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in TCM connectors?	Repair connector.	Go to step 3.
3	CHECK TCM. 1) Turn ignition switch to OFF. 2) Connect all connectors. 3) Erase the memory. 4) Perform inspection mode. 5) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace TCM. <ref. at-49,<br="" to="">Transmission Control Module (TCM).></ref.>	Go to step 4.
4	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

VDC (Diagnostics)

AC: DTC 45 INCORRECT VDC CONTROL MODULE 5005504J64

DIAGNOSIS:

• Control module out of specification

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.

No.	Step	Check	Yes	No
1	CHECK VDCCM SPECIFICATIONS. Check the VDCCM identification mark. VDCCM identification mark P	Does the VDCCM identification mark agree with the vehicle specifications?	Go to step 2.	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>
2	CHECK TCM SPECIFICATIONS. Check the TCM identification mark. TCM identification mark ZV	Does the TCM identification mark agree with the vehicle specifications?	Go to step 3.	Replace TCM. <ref. at-49,<br="" to="">Transmission Control Module (TCM).></ref.>
3	CHECK TCM. 1) Replace TCM. <ref. (tcm).="" at-49,="" control="" module="" to="" transmission=""> 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.</ref.>	Is the same diagnostic trouble code as in the current diagnosis still being output?	Go to step 4.	The original TCM has been faulty.
4	CHECK TCM.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Go to step 5.	Proceed with the diagnosis corresponding to the diagnostic trouble code.
5	CHECK VDCCM. 1) Install original TCM. 2) Replace VDCCM. <ref. (vdccm).="" control="" module="" to="" vdc="" vdc-9,=""> 3) Erase the memory. 4) Perform inspection mode. 5) Read out the diagnostic trouble code.</ref.>	Is the same diagnostic trouble code as in the current diagnosis still being output?	Go to step 6.	The original VDCCM has been faulty.
6	CHECK VDCCM.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace TCM. <ref. at-49,<br="" to="">Transmission Control Module (TCM).></ref.>	Proceed with the diagnosis corresponding to the diagnostic trouble code.

VDC (Diagnostics)

AD: DTC 45 TCM MALFUNCTION SPECIFICATIONS S005504J65

DIAGNOSIS:

• Control module out of specification

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.

No.	Step	Check	Yes	No
1	CHECK AT SYSTEM.	Is AT system diagnostic	Repair AT system.	Replace VDCCM.
	1) Start the engine.	trouble code stored in		
	2) Check AT system diagnostic trouble code.	memory?		

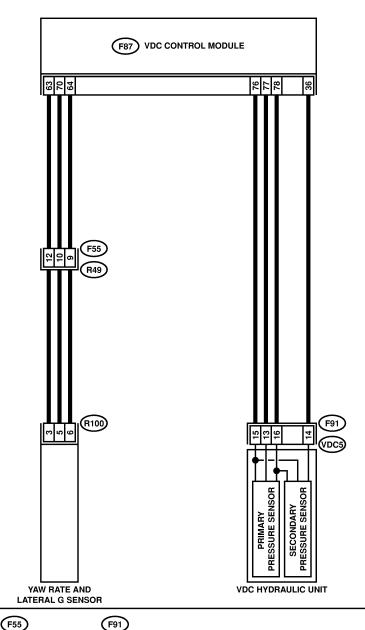
AE: DTC 46 ABNORMAL VOLTAGE OF 5 V POWER SUPPLY S005504J29

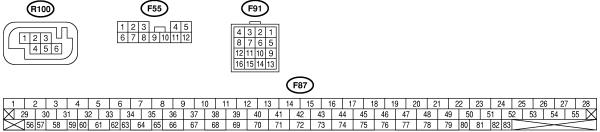
DIAGNOSIS:

5 volt power supply is abnormal.

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.





No.	Step	Check	Yes	No
1	CHECK GROUND SHORT OF SENSOR AND HARNESS. 1) Turn ignition switch OFF.	Is the resistance more than 1 M Ω ?	Go to step 3.	Go to step 2.
	2) Disconnect connector from VDCCM. 3) Measure resistance between VDCCM connector and chassis ground.			
	Connector & terminal (F87) No. 63 — Chassis ground (Lateral G sensor): (F87) No. 78 — Chassis ground (Pressure sensor):			
2	CHECK GROUND SHORT OF HARNESS. 1) Disconnect connector from faulty sensors. 2) Measure resistance between VDCCM and chassis ground. Connector & terminal (F87) No. 63 — Chassis ground (Lateral G sensor): (F87) No. 78 — Chassis ground (Pressure sensor):	Is the resistance more than 1 $\mbox{M}\Omega ?$	Replace faulty sensors.	Repair or replace harness connector between VDCCM and faulty sensor.
3	CHECK BATTERY SHORT OF SENSOR AND HARNESS. Measure voltage between VDCCM and chassis ground. Connector & terminal (F87) No. 63 (+) — Chassis ground (-) (Lateral G sensor): (F87) No. 78 (+) — Chassis ground (-)	Is the voltage less than 0.5 V?	Go to step 4.	Go to step 5.
4	(Pressure sensor): CHECK BATTERY SHORT OF SENSOR AND HARNESS. 1) Turn ignition switch to ON. 2) Measure voltage between VDCCM connector and chassis ground. Connector & terminal (F87) No. 63 (+) — Chassis ground (-) (Lateral G sensor): (F87) No. 78 (+) — Chassis ground (-) (Pressure sensor):	Is the voltage less than 0.5 V?	Replace VDCCM.	Go to step 5.
5	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to OFF. 2) Disconnect connector from faulty sensors. 3) Measure voltage between VDCCM and chassis ground. Connector & terminal (F87) No. 63 (+) — Chassis ground (-) (Lateral G sensor): (F87) No. 78 (+) — Chassis ground (-) (Pressure sensor):	Is the voltage less than 0.5 V?	Go to step 6.	Repair or replace harness connector between VDCCM and faulty sensor.
6	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to ON. 2) Measure voltage between VDCCM and chassis ground. Connector & terminal (F87) No. 63 (+) — Chassis ground (-) (Lateral G sensor): (F87) No. 78 (+) — Chassis ground (-) (Pressure sensor):	Is the voltage less than 0.5 V?	Replace faulty sensor.	Repair or replace harness connector between VDCCM and faulty sensor.

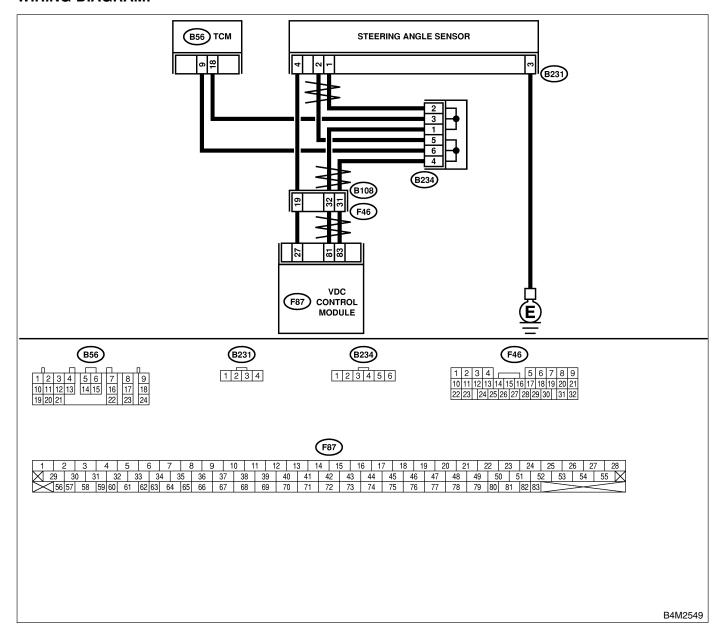
AF: DTC 47 IMPROPER CAN COMMUNICATION S005504J66

DIAGNOSIS:

CAN communication line is broken or short circuited.

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN VDCCM,	Is the resistance less than	Go to step 3.	Go to step 2.
	STEERING ANGLE SENSOR AND TCM.	0.5 Ω?	·	·
	1) Turn ignition switch OFF.			
	2) Disconnect connector from VDCCM, TCM			
	and steering angle sensor.			
	3) Measure resistance between VDCCM,			
	TCM and steering angle sensor. Connector & terminal			
	(F87) No. 83 — (B56) No. 9:			
	(F87) No. 81 — (B56) No. 18:			
	(F87) No. 83 — (B231) No. 2:			
	(F87) No. 81 — (B231) No. 1:			
2	CHECK HARNESS BETWEEN STEERING	Is the resistance less than	Repair or replace	Repair or replace
	ANGLE SENSOR AND TCM.	0.5 Ω?	harness connector	harness connector
	Measure resistance between TCM and steer-		between VDCCM	between TCM and
	ing angle sensor.		and steering	steering angle
	Connector & terminal		angle sensor.	sensor.
	(B56) No. 9 — (B231) No. 2:			
	(B56) No. 18 — (B231) No. 1:			
3	CHECK GROUND SHORT OF HARNESS.	Is the resistance more than	Go to step 4.	Repair or replace
	Measure resistance between VDCCM and	1 MΩ?		harness connector
	chassis ground. Connector & terminal			between VDCCM,
	(F87) No. 83 — Chassis ground:			TCM and steering angle sensor.
	(F87) No. 81 — Chassis ground:			angle sensor.
4	CHECK BATTERY SHORT OF SENSOR.	Is the voltage less than 0.5	Go to step 5.	Repair or replace
-	Measure voltage between VDCCM and chas-	V?		harness connector
	sis ground.			between VDCCM,
	Connector & terminal			TCM and steering
	(F87) No. 83 — Chassis ground:			angle sensor.
	(F87) No. 81 — Chassis ground:			
5	CHECK BATTERY SHORT OF SENSOR.	Is the voltage less than 0.5	Go to step 6.	Repair or replace
	1) Turn ignition switch to ON.	V?		harness connector
	Measure voltage between VDCCM and chassis ground.			between VDCCM, TCM and steering
	Connector & terminal			angle sensor.
	(F87) No. 83 — Chassis ground:			angle concer.
	(F87) No. 81 — Chassis ground:			
6	CHECK STEERING ANGLE SENSOR.	Is the resistance 120 \pm 6 Ω ?	Go to step 8.	Go to step 7.
	1) Turn ignition switch to OFF.			
	2) Connect connector to steering angle sen-			
	sor.			
	3) Measure resistance between VDCCM con-			
	nector terminals.			
	Connector & terminal			
7	(F87) No. 83 — No. 81:	le there peer contact in	Poplace statis	Popoir or replace
7	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in steering angle sensor?	Replace steering angle sensor.	Repair or replace steering angle
	10110.	Stoering angle sensor!	angle senson.	sensor connector.
8	CHECK VDCCM.	Is the resistance 120 \pm 6 Ω ?	Go to step 10.	Go to step 9.
	1) Connect connector to VDCCM.	10 100.000.000 120.00 321	3.5 to 5top 10.	3.3 to stop 6 .
	Disconnect connector from steering angle			
	sensor.			
	3) Measure resistance between steering angle			
	sensor connector terminals.			
	Connector & terminal			
	(B231) No. 1 — No. 2:			

VDC (Diagnostics)

No.	Step	Check	Yes	No
9	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in steering angle sensor?	Replace VDCCM.	Repair or replace VDCCM connector.
10	CHECK TCM. 1) Connect connector to TCM. 2) Disconnect connector from VDCCM. 3) Measure resistance between steering angle sensor terminals. Connector & terminal (B231) No. 1 — No. 2:	Is the resistance more than 1 M Ω ?	Go to step 12.	Go to step 11.
11	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in steering angle sensor?	Replace TCM.	Repair or replace TCM connector.
12	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Are other diagnostic trouble codes being output?	Go to step 13.	A temporary poor contact.
13	CHECK DIAGNOSTIC TROUBLE CODE.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Go to step 14.	Proceed with the diagnosis corresponding to the diagnostic trouble code.
14	CHECK AT SYSTEM DIAGNOSTIC TROUBLE CODE.	Is the AT system DTC No. 86?	Replace steering angle sensor.	Replace VDCCM.

VDC (Diagnostics)

MEMO:

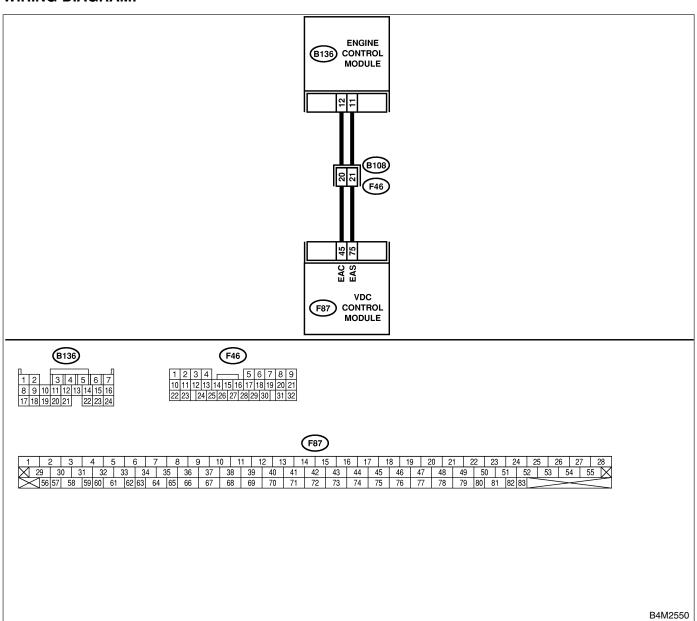
AG: DTC 48 IMPROPER EAC COMMUNICATION SOUSSOULET

DIAGNOSIS:

EAC communication line is broken or short circuited.

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN ECM AND VDCCM. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM and ECM. 3) Measure resistance between VDCCM and ECM. Connector & terminal (F87) No. 45 — (B137) No. 12:	Is the resistance less than 0.5 Ω ?	Go to step 2.	Repair or replace open circuit between VDCCM and ECM.
2	CHECK GROUND SHORT OF HARNESS. Measure resistance between VDCCM and ECM. Connector & terminal (F87) No. 45 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 3.	Repair or replace ground short cir- cuit between VDCCM and ECM.
3	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to ON. 2) Measure voltage between VDCCM and chassis ground. Connector & terminal (F87) No. 45 — Chassis ground:	Is the voltage less than 0.5 V?	Go to step 4.	Repair or replace battery short cir- cuit between VDCCM and ECM.
4	CHECK INPUT VOLTAGE FROM ECM. 1) Turn ignition switch to OFF. 2) Connect connector to VDCCM. 3) Turn ignition switch to ON. 4) Measure voltage between ECM and chassis ground. Connector & terminal (B136) No. 12 (+) — Chassis ground (-):	Is the voltage between 10 and 15 V?	Go to step 6.	Go to step 5.
5	CHECK POOR CONTACT IN ECM CONNECTORS.	Is there poor contact in ECM connector?	Replace ECM.	Repair or replace ECM connector.
6	ERASE MEMORY. 1) Connect all connectors. 2) Erase the memory.	Can the memory be erased?	Go to step 7.	Replace VDCCM.
7	CHECK DIAGNOSTIC TROUBLE CODE. 1) Perform inspection mode. 2) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace ECM.	A temporary poor contact.

VDC (Diagnostics)

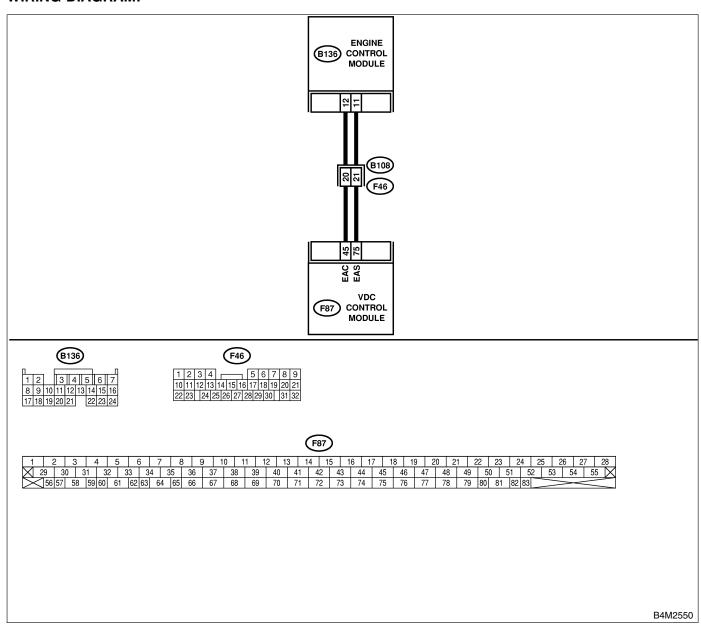
AH: DTC 48 EAS COMMUNICATION LINE GROUNDING SHORTED SODS SOLD SOLD SOLD SHORTED SOLD SOLD SOLD SOLD SHORTED SOLD SOLD SOLD SHORTED SOLD SOLD SOLD SHORTED SOLD SOLD SHORTED SOLD SHORTED SOLD SOLD SHORTED SHORTED SOLD SHORTED SO

DIAGNOSIS:

EAS communication line is short circuited.

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK GROUND SHORT OF HARNESS. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM and ECM. 3) Measure resistance between VDCCM and ECM. Connector & terminal (F87) No. 75 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 2.	Repair or replace ground short cir- cuit between VDCCM and ECM.
2	CHECK INPUT VOLTAGE FROM ECM. 1) Connect connector to VDCCM. 2) Turn ignition switch to ON. 3) Measure voltage between ECM and chassis ground. Connector & terminal (B136) No. 11 (+) — Chassis ground (-):	Is the voltage between 10 and 15 V?	Go to step 4.	Go to step 3.
3	CHECK POOR CONTACT IN ECM CONNECTORS.	Is there poor contact in ECM connector?	Replace ECM.	Repair or replace ECM connector.
4	ERASE MEMORY. 1) Connect all connectors. 2) Erase the memory.	Can the memory be erased?	Go to step 5.	Replace VDCCM.
5	CHECK DIAGNOSTIC TROUBLE CODE. 1) Perform inspection mode. 2) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace ECM.	A temporary poor contact.

VDC (Diagnostics)

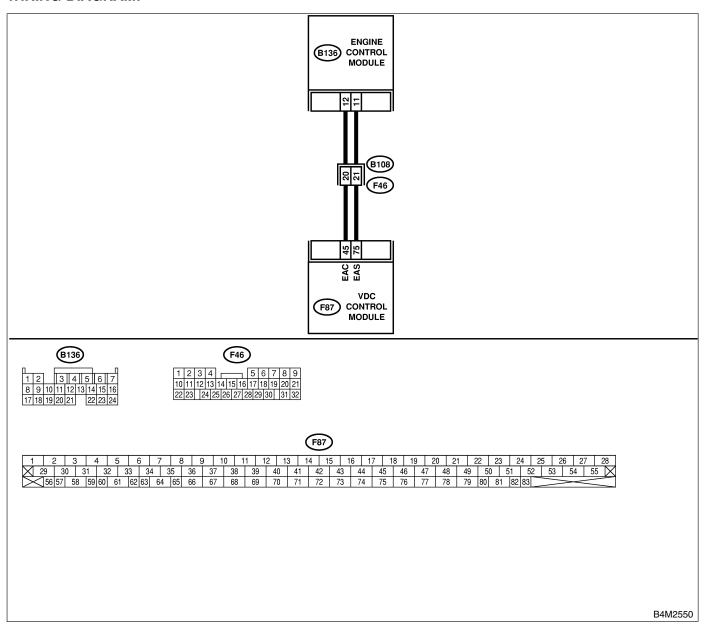
AI: DTC 48 ERRONEOUS COMMUNICATION FROM EGI TO VDC SOUSSOULDS

DIAGNOSIS:

- EAS communication line is broken or short circuited.
- EAC communication line is broken or short circuited.

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN ECM AND VDCCM. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM and ECM. 3) Measure resistance between VDCCM and ECM. Connector & terminal (F87) No. 75 — (B137) No. 11: (F87) No. 45 — (B137) No. 12:	Is the resistance less than 0.5 Ω ?	Go to step 2.	Repair or replace open circuit between VDCCM and ECM.
2	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to ON. 2) Measure voltage between VDCCM and chassis ground. Connector & terminal (F87) No. 75 — Chassis ground: (F87) No. 45 — Chassis ground:	Is the voltage less than 0.5 V?	Go to step 3.	Repair or replace battery short cir- cuit between VDCCM and ECM.
3	CHECK INPUT VOLTAGE FROM ECM. 1) Turn ignition switch to OFF. 2) Connect connector to VDCCM. 3) Turn ignition switch to ON. 4) Measure voltage between ECM and chassis ground. Connector & terminal (B136) No. 11 (+) — Chassis ground (-): (B136) No. 12 (+) — Chassis ground (-):	Is the voltage between 10 and 15 V?	Go to step 5.	Go to step 4.
4	CHECK POOR CONTACT IN ECM CONNECTORS.	Is there poor contact in ECM connector?	Replace ECM.	Repair or replace ECM connector.
5	ERASE MEMORY. 1) Connect all connectors. 2) Erase the memory.	Can the memory be erased?	Go to step 6.	Replace VDCCM.
6	CHECK DIAGNOSTIC TROUBLE CODE. 1) Perform inspection mode. 2) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace ECM.	A temporary poor contact.

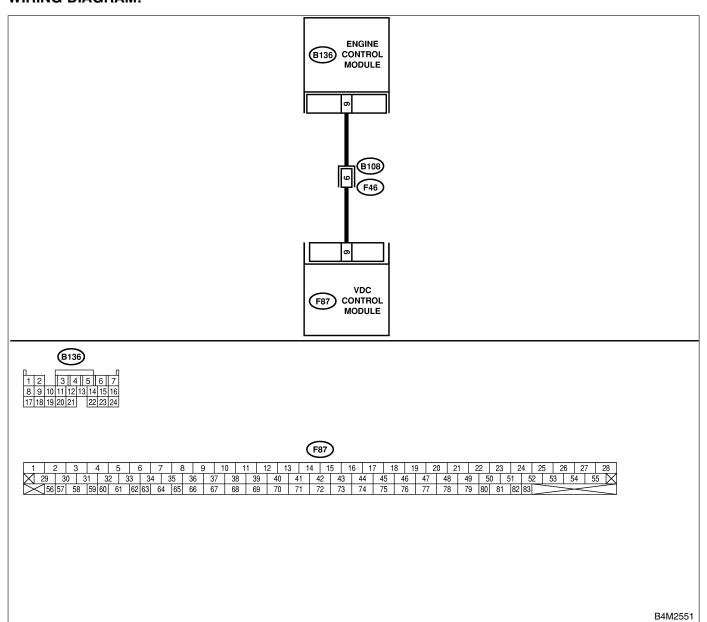
AJ: DTC 49 ABNORMAL ENGINE SPEED SIGNAL S005504J32

DIAGNOSIS:

• Engine speed signal line is broken or short circuited.

TROUBLE SYMPTOM:

VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK TACHOMETER OPERATION IN COMBINATION METER.	Does tachometer operate normally?	Go to step 2.	Repair tachometer.
2	CHECK HARNESS BETWEEN VDCCM AND ECM. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM and ECM. 3) Measure resistance between VDCCM connector and ECM. Connector & terminal (F87) No. 9 — (B136) No. 9:	Is the resistance less than 0.5 Ω ?	Go to step 3.	Repair harness connector between VDCCM and ECM.
3	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in connectors between VDCCM and ECM?	Repair connector.	Go to step 4.
4	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 5.
5	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

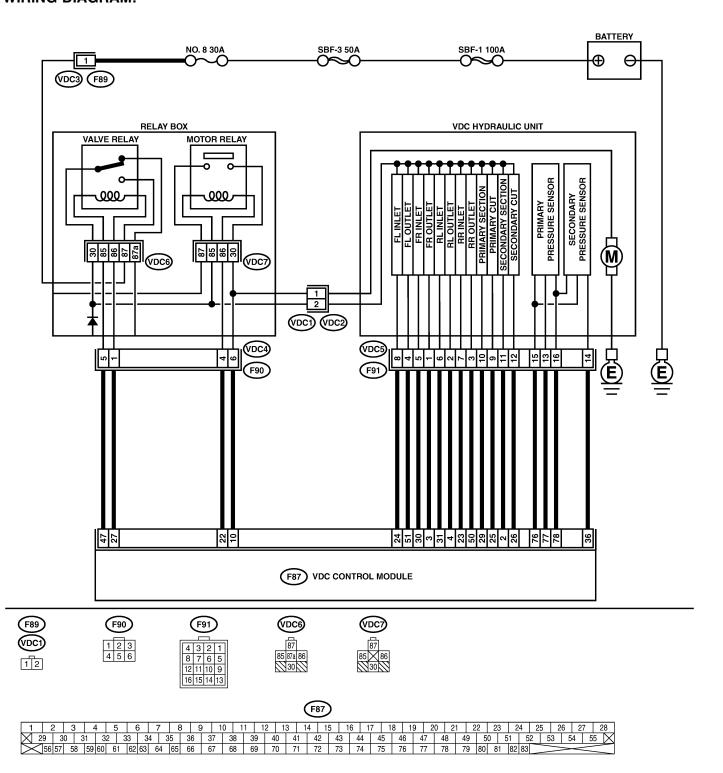
AK: DTC 51 VALVE RELAY S005504J70

DIAGNOSIS:

Faulty valve relay

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK RESISTANCE OF VALVE RELAY.	Is the resistance between	Go to step 2.	Replace valve
	1) Turn ignition switch to OFF.	93 and 113 Ω?	·	relay.
	2) Remove valve relay from relay box.			
	3) Measure resistance between valve relay			
	terminals.			
	Terminals			
	No. 85 — No. 86:		_	
2	CHECK CONTACT POINT OF VALVE	Is the resistance less than	Go to step 3.	Replace valve
	RELAY.	0.5 Ω?		relay.
	1) Connect battery to valve relay terminals No. 85 and No. 86.			
	2) Measure resistance between valve relay			
	terminals.			
	Terminals			
	No. 30 — No. 87:			
3	CHECK CONTACT POINT OF VALVE	Is the resistance more than	Go to step 4.	Replace valve
	RELAY.	1 ΜΩ?		relay.
	Measure resistance between valve relay ter-			
	minals.			
	Terminals			
	No. 30 — No. 87a:	la de a mariata n	0-1	Danie a d
4	CHECK CONTACT POINT OF VALVE RELAY.	Is the resistance more than 1 $M\Omega$?	Go to step 5.	Replace valve relay.
	Disconnect battery from valve relay termi-	1 10152 :		Telay.
	nals.			
	2) Measure resistance between valve relay			
	terminals.			
	Terminals			
	No. 30 — No. 87:			
5	CHECK CONTACT POINT OF VALVE	Is the resistance less than	Go to step 6.	Replace valve
	RELAY.	0.5 Ω?		relay.
	Measure resistance between valve relay terminals.			
	Terminals			
	No. 30 — No. 87a:			
6	CHECK SHORT OF VALVE RELAY.	Is the resistance more than	Go to step 7.	Replace valve
	Measure resistance between valve relay ter-	1 MΩ?		relay.
	minals.			
	Terminals			
	No. 86 — No. 87:			
	No. 86 — No. 87a:			
7	CHECK POWER SUPPLY FOR VALVE	Is the voltage between 10	Go to step 8.	Repair harness
	RELAY. 1) Disconnect connector (F89) from relay box.	and 15 V?		between battery and relay box
	2) Turn ignition switch to ON.			connector. Check
	3) Measure voltage between relay box con-			fuse No. 8.
	nector and chassis ground.			
	Connector & terminal			
	(F89) No. 1 (+) — Chassis ground (-):			
8	CHECK OPEN CIRCUIT AND GROUND	Is the voltage between 10	Go to step 9.	Replace relay box
	SHORT IN POWER SUPPLY CIRCUIT OF	and 15 V?		and check fuse
	RELAY BOX.			No. 8.
	1) Disconnect connector (VDC1) from VDCH/U.			
	2) Connect connector (F89) to relay box.			
	3) Turn ignition switch to ON.			
	4) Measure voltage of relay box.			
	Connector & terminal			
	Valve relay installing point No. 87 —			
	Chassis ground:			

No.	Step	Check	Yes	No
9	CHECK OPEN CIRCUIT IN CONTROL CIR-	Is the resistance less than	Go to step 10.	Replace relay
	CUIT OF RELAY BOX.	0.5 Ω?	'	box.
	1) Turn ignition switch to OFF.			
	2) Disconnect connector (F90) from relay box.			
	3) Measure resistance between relay box			
	connector and valve relay installing point.			
	Connector & terminal			
	(VDC4) No. 5 — Valve relay installing			
	point No. 85:			
	(VDC4) No. 1 — Valve relay installing			
40	point No. 86:		0 1 1 44	D 1 1 1
10	CHECK GROUND SHORT IN CONTACT	Is the resistance more than 1 $M\Omega$?	Go to step 11.	Replace relay box
	POINT CIRCUIT OF RELAY BOX.	1 VI\$2?		and check fuse SBF6.
	Measure resistance between relay box connector and chassis ground.			SDF0.
	Connector & terminal			
	(VDC4) No. 5 — Chassis ground:			
	(VDC4) No. 1 — Chassis ground:			
11	CHECK OPEN CIRCUIT IN CONTROL SYS-	Is the resistance less than	Go to step 12.	Repair harness
	TEM HARNESS OF VALVE RELAY.	0.5 Ω?		between VDCCM
	1) Turn ignition switch to OFF.			and relay box.
	2) Disconnect connector from VDCCM.			
	3) Measure resistance between VDCCM con-			
	nector and relay box connector.			
	Connector & terminal			
	(F87) No. 47 — (F90) No. 5:			
	(F87) No. 27 — (F90) No. 1:			
12	CHECK GROUND SHORT IN CONTROL	Is the resistance more than	Go to step 13.	Repair harness
	SYSTEM HARNESS OF VALVE RELAY.	1 ΜΩ?		between VDCCM
	Measure resistance between VDCCM connec-			and relay box.
	tor and chassis ground.			
	Connector & terminal			
	(F87) No. 47 — Chassis ground:			
13	(F87) No. 27 — Chassis ground: CHECK OPEN CIRCUIT IN CONTACT	le the registeres less than	Co to stop 14	Donlogo rolov
13	POINT CIRCUIT OF RELAY BOX.	Is the resistance less than 0.5Ω ?	Go to step 14.	Replace relay box.
	Measure resistance between VDCH/U con-	0.5 12 !		DOX.
	nector and valve relay installing point.			
	Connector & terminal			
	(VDC1) No. 2 — Valve relay installing			
	point No. 30:			
14	CHECK GROUND SHORT IN CONTACT	Is the resistance more than	Go to step 15.	Replace relay box
	POINT CIRCUIT OF RELAY BOX.	1 ΜΩ?		and check fuse
	Measure resistance between VDCH/U con-			No. 8.
	nector and chassis ground.			
	Connector & terminal			
	(VDC1) No. 2 — Chassis ground:			
15	CHECK RESISTANCE OF INLET AND CUT	Is the resistance between	Go to step 16.	Replace VDCH/U.
	SOLENOID VALVES.	8.04 and 9.04 Ω?		
	1) Disconnect connector from VDCH/U.			
	2) Measure resistance between VDCH/U con-			
	nector terminals.			
	Connector & terminal			
	(VDC5) No. 8 — (VDC2) No. 2: (VDC5) No. 5 — (VDC2) No. 2:			
	(VDC5) No. 5 — (VDC2) No. 2: (VDC5) No. 6 — (VDC2) No. 2:			
	(VDC5) No. 7 — (VDC2) No. 2:			
		i	Î.	İ.
	(VDC5) No. 7 — (VDC2) No. 2:			

No.	Step	Check	Yes	No
16	CHECK RESISTANCE OF OUTLET SOLE-	Is the resistance between	Go to step 17.	Replace VDCH/U.
	NOID VALVE.	4.04 and 4.54 Ω?		
	Measure resistance between VDCH/U con-			
	nector terminals. Connector & terminal			
	(VDC5) No. 4 — (VDC2) No. 2:			
	(VDC5) No. 1 — (VDC2) No. 2:			
	(VDC5) No. 2 — (VDC2) No. 2:			
	(VDC5) No. 3 — (VDC2) No. 2:			
	(VDC5) No. 10 — (VDC2) No. 2:			
	(VDC5) No. 11 — (VDC2) No. 2:			
17	CHECK GROUND SHORT OF SOLENOID VALVE.	Is the resistance more than 1 $M\Omega$?	Go to step 18.	Replace VDCH/U
	Measure resistance between VDCH/U con-	1 IVIS2?		and check all fuses.
	nector and chassis ground.			luses.
	Connector & terminal			
	(VDC2) No. 2 — Chassis ground:			
18	CHECK GROUND SHORT OF HARNESS.	Is the resistance more than	Go to step 19.	Repair harness
	1) Turn ignition switch to OFF.	1 ΜΩ?		between VDCH/U
	2) Measure resistance between VDCCM con-			and VDCCM.
	nector and chassis ground. Connector & terminal			
	(F87) No. 30 — Chassis ground:			
	(F87) No. 24 — Chassis ground:			
	(F87) No. 23 — Chassis ground:			
	(F87) No. 31 — Chassis ground:			
	(F87) No. 26 — Chassis ground:			
	(F87) No. 25 — Chassis ground:			
	(F87) No. 3 — Chassis ground:			
	(F87) No. 51 — Chassis ground: (F87) No. 50 — Chassis ground:			
	(F87) No. 4 — Chassis ground:			
	(F87) No. 2 — Chassis ground:			
	(F87) No. 29 — Chassis ground:			
19	CHECK HARNESS/CONNECTOR	Is the resistance between	Go to step 20.	Repair harness/
	BETWEEN VDCCM AND VDCH/U.	8.0 and 10.0 Ω?		connector
	1) Connect connector (F91) to VDCH/U. 2) Measure resistance between VDCCM con-			between VDCH/U and VDCCM.
	nector and VDCH/U			and vboolvi.
	Connector & terminal			
	(F87) No. 30 — (VDC2) No. 2:			
	(F87) No. 24 — (VDC2) No. 2:			
	(F87) No. 23 — (VDC2) No. 2:			
	(F87) No. 31 — (VDC2) No. 2: (F87) No. 26 — (VDC2) No. 2:			
	(F87) No. 25 — (VDC2) No. 2:			
20	CHECK HARNESS/CONNECTOR	Is the resistance between	Go to step 21.	Repair harness/
	BETWEEN VDCCM AND VDCH/U.	4.0 and 6.0 Ω ?		connector
	Measure resistance between VDCCM connec-			between VDCH/U
	tor terminals.			and VDCCM.
	Connector & terminal			
	(F87) No. 3 — (VDC2) No. 2:			
	(F87) No. 51 — (VDC2) No. 2: (F87) No. 50 — (VDC2) No. 2:			
	(F87) No. 4 — (VDC2) No. 2:			
	(F87) No. 2 — (VDC2) No. 2:			
	(F87) No. 29 — (VDC2) No. 2:			
21	CHECK POOR CONTACT IN CONNEC-	Is there poor contact in	Repair connector.	Go to step 22.
	TORS.	connector between		·
		VDCCM and VDCH/U?		

VDC (Diagnostics)

No.	Step	Check	Yes	No
22	 CHECK VDCCM. Connect all connectors. Erase the memory. Perform inspection mode. Read out the diagnostic trouble code. 	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM.	Go to step 23.
23	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

VDC (Diagnostics)

MEMO:

VDC (Diagnostics)

AL: DTC 51 VALVE RELAY ON FAILURE S005504177

DIAGNOSIS:

• Faulty valve relay

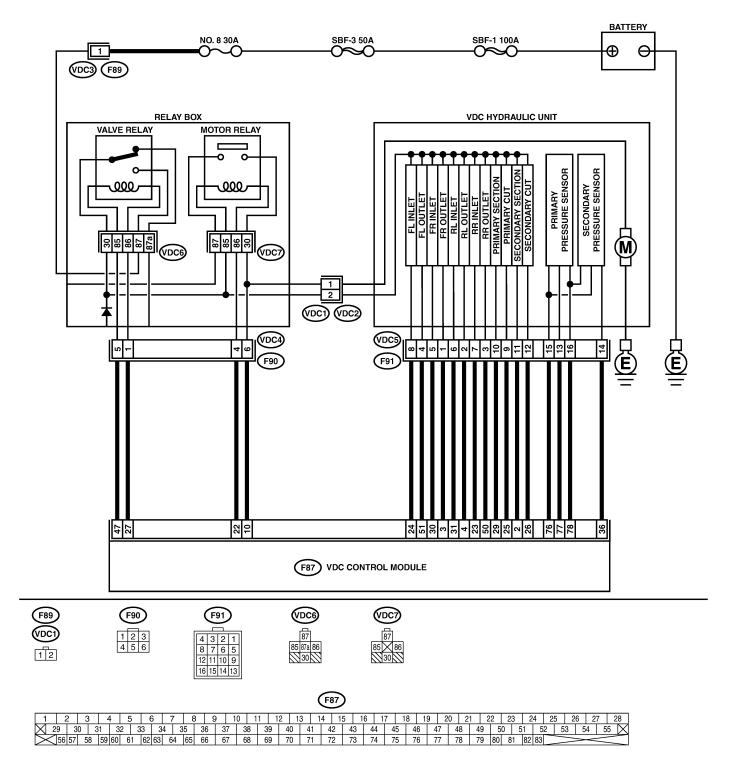
NOTE:

When DTC 74 inspection is carried out, DTC 51 is memorized.

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.

WIRING DIAGRAM:



B4M2328

No.	Step	Check	Yes	No
1	CHECK CONTACT POINT OF VALVE RELAY. 1) Turn ignition switch to OFF. 2) Remove valve relay from relay box. 3) Connect battery to valve relay terminals No. 85 and No. 86. 4) Measure resistance between valve relay terminals. Terminals No. 30 — No. 87:	Is the resistance less than 0.5 Ω ?	Go to step 2.	Replace valve relay.
2	CHECK CONTACT POINT OF VALVE RELAY. Measure resistance between valve relay terminals. Terminals No. 30 — No. 87a:	Is the resistance more than 1 M Ω ?	Go to step 3.	Replace valve relay.
3	CHECK CONTACT POINT OF VALVE RELAY. 1) Disconnect battery from valve relay terminals. 2) Measure resistance between valve relay terminals. Terminals No. 30 — No. 87:	Is the resistance more than 1 $\text{M}\Omega?$	Go to step 4.	Replace valve relay.
4	CHECK CONTACT POINT OF VALVE RELAY. Measure resistance between valve relay terminals. Terminals No. 30 — No. 87a:	Is the resistance less than 0.5 Ω ?	Go to step 5.	Replace valve relay.
5	CHECK SHORT OF VALVE RELAY. Measure resistance between valve relay terminals. Terminals No. 86 — No. 87: No. 86 — No. 87a:	Is the resistance more than 1 M Ω ?	Go to step 6.	Replace valve relay.
6	CHECK BATTERY SHORT IN CONTACT POINT CIRCUIT OF RELAY BOX. 1) Disconnect connector (F90) from relay box. 2) Measure voltage between relay box connector and chassis ground. Connector & terminal (VDC4) No. 5 (+) — Chassis ground (-): (VDC4) No. 1 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 7.	Replace relay box. Check fuse No. 8 and SBF3.
7	CHECK BATTERY SHORT IN CONTACT POINT CIRCUIT OF RELAY BOX. 1) Turn ignition switch to ON. 2) Measure voltage between VDCH/U connector and chassis ground. Connector & terminal (VDC4) No. 5 (+) — Chassis ground (-): (VDC4) No. 1 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 8.	Replace relay box. Check fuse No. 8 and SBF3.

No.	Step	Check	Yes	No
9	CHECK BATTERY SHORT IN CONTROL SYSTEM HARNESS OF VALVE RELAY. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM. 3) Disconnect connector from VDCH/U. 4) Measure voltage between VDCCM connector and chassis ground. Connector & terminal (F87) No. 27 (+) — Chassis ground (-): (F87) No. 47 (+) — Chassis ground (-): CHECK BATTERY SHORT IN CONTROL	Is the voltage less than 1 V?	Go to step 9. Go to step 10.	Repair harness between VDCCM and relay box and check all fuses.
	SYSTEM HARNESS OF VALVE RELAY. 1) Turn ignition switch to ON. 2) Measure voltage between VDCCM connector and chassis ground. Connector & terminal (F87) No. 27 (+) — Chassis ground (-): (F87) No. 47 (+) — Chassis ground (-):	V?	do to stop 10.	between VDCCM and relay box and check all fuses.
10	CHECK BATTERY SHORT IN CONTACT POINT CIRCUIT OF RELAY BOX. 1) Disconnect connector VDC1 from relay box. 2) Measure voltage between VDCH/U connector and chassis ground. Connector & terminal (VDC1) No. 2 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 11.	Replace relay box.
11	CHECK BATTERY SHORT IN CONTACT POINT CIRCUIT OF RELAY BOX. 1) Turn ignition switch to ON. 2) Measure voltage between VDCH/U connector and chassis ground. Connector & terminal (VDC1) No. 2 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 12.	Replace relay box.
12	CHECK BATTERY SHORT OF SOLENOID VALVE. 1) Turn ignition switch to OFF. 2) Measure voltage between VDCH/U connector and chassis ground. Connector & terminal (VDC2) No. 2 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 13.	Replace VDCH/U and check all fuses.
13	CHECK BATTERY SHORT OF SOLENOID VALVE. 1) Turn ignition switch to ON. 2) Measure voltage between VDCH/U connector and chassis ground. Connector & terminal (VDC2) No. 2 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 14.	Replace VDCH/U and check all fuses.

No.	Step	Check	Yes	No
14	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to OFF. 2) Measure voltage between VDCCM connector and chassis ground. Connector & terminal (F87) No. 30 (+) — Chassis ground (-): (F87) No. 24 (+) — Chassis ground (-): (F87) No. 23 (+) — Chassis ground (-): (F87) No. 31 (+) — Chassis ground (-): (F87) No. 26 (+) — Chassis ground (-): (F87) No. 25 (+) — Chassis ground (-): (F87) No. 51 (+) — Chassis ground (-): (F87) No. 50 (+) — Chassis ground (-): (F87) No. 4 (+) — Chassis ground (-): (F87) No. 2 (+) — Chassis ground (-): (F87) No. 29 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 15.	Repair harness between VDCH/U and VDCCM and check all fuses.
15	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to ON. 2) Measure voltage between VDCCM connector and chassis ground. Connector & terminal (F87) No. 30 (+) — Chassis ground (-): (F87) No. 24 (+) — Chassis ground (-): (F87) No. 23 (+) — Chassis ground (-): (F87) No. 31 (+) — Chassis ground (-): (F87) No. 26 (+) — Chassis ground (-): (F87) No. 3 (+) — Chassis ground (-): (F87) No. 51 (+) — Chassis ground (-): (F87) No. 50 (+) — Chassis ground (-): (F87) No. 4 (+) — Chassis ground (-): (F87) No. 2 (+) — Chassis ground (-): (F87) No. 29 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 16.	Repair harness between VDCH/U and VDCCM and check all fuses.
16	CHECK POOR CONTACT IN CONNECTORS. Turn ignition switch to OFF.	Is there poor contact in connector between VDCCM and VDCH/U?	Repair connector.	Go to step 17.
17	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM.	Go to step 18.
18	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

VDC (Diagnostics)

MEMO:

VDC (Diagnostics)

AM: DTC 52 MOTOR AND MOTOR RELAY OFF FAILURE SOUSSOUJ71

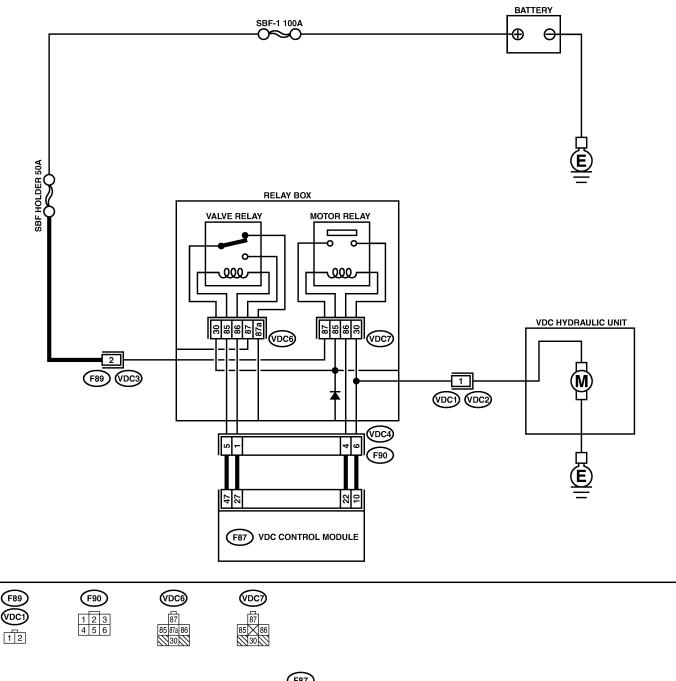
DIAGNOSIS:

- Faulty motor relay
- Faulty harness connector

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.

WIRING DIAGRAM:



B4M2329

No.	Step	Check	Yes	No
1	CHECK CONTACT POINT OF MOTOR RELAY.	Is the resistance more than 1 M Ω ?	Go to step 2.	Replace motor relay.
	1) Turn ignition switch to OFF.			
	Remove motor relay from relay box. Measure resistance between motor relay			
	terminals.			
	Terminals			
	No. 30 — No. 87:			
2	CHECK SHORT OF MOTOR RELAY.	Is the resistance more than	Go to step 3.	Replace motor
	Measure resistance between motor relay terminals.	1 MΩ?		relay.
	Terminals			
	No. 85 — No. 30:			
	No. 85 — No. 87:			
3	CHECK GROUND SHORT IN CIRCUIT OF	Is the resistance more than	Go to step 4.	Replace relay
	RELAY BOX.	1 MΩ?		box.
	 Disconnect connector (F90) from relay box. Measure resistance between relay box 			
	connector unit and chassis ground.			
	Connector & terminal			
	(VDC4) No. 4 — Chassis ground:			
4	CHECK BATTERY SHORT IN CIRCUIT OF	Is the voltage less than 1	Go to step 5.	Replace relay
	RELAY BOX. Measure voltage between relay box connector	V?		box.
	and chassis ground.			
	Connector & terminal			
	(VDC4) No. 6 (+) — Chassis ground			
	(-):			
5	CHECK BATTERY SHORT IN CIRCUIT OF RELAY BOX.	Is the voltage less than 1 V?	Go to step 6.	Replace relay box.
	1) Turn ignition switch to ON.	V :		DOX.
	2) Measure voltage between relay box con-			
	nector and chassis ground.			
	Connector & terminal			
	(VDC4) No. 6 (+) — Chassis ground (-):			
6	CHECK GROUND SHORT IN HARNESS	Is the resistance more than	Go to step 7.	Repair harness
	BETWEEN RELAY BOX AND VDCCM.	1 ΜΩ?		between VDCCM
	1) Turn ignition switch to OFF.			and relay box.
	2) Disconnect connector from VDCCM.			Check fuse SBF
	3) Measure resistance between VDCCM connector and chassis ground.			holder.
	Connector & terminal			
	(F87) No. 22 — Chassis ground:			
7	CHECK BATTERY SHORT IN HARNESS	Is the voltage less than 1	Go to step 8.	Repair harness
	BETWEEN RELAY BOX AND VDCCM.	V?		between VDCCM
	Measure voltage between VDCCM connector and chassis ground.			and relay box.
	Connector & terminal			
	(F87) No. 10 (+) — Chassis ground (-):			
8	CHECK BATTERY SHORT IN HARNESS	Is the voltage less than 1	Go to step 9.	Repair harness
	BETWEEN RELAY BOX AND VDCCM.	V?	-	between VDCCM
	1) Turn ignition switch to ON.			and relay box.
	2) Measure voltage between VDCCM connector and chassis ground.			
	Connector & terminal			
	(F87) No. 10 (+) — Chassis ground (-):			

No.	Step	Check	Yes	No
9	CHECK POOR CONTACT IN CONNECTORS. Turn ignition switch to OFF.	Is there poor contact in connector between VDCH/U, relay box and VDCCM?	Repair connector.	Go to step 10.
10	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM.	Go to step 11.
11	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

VDC (Diagnostics)

AN: DTC 52 MOTOR AND MOTOR RELAY ON FAILURE S005504J72

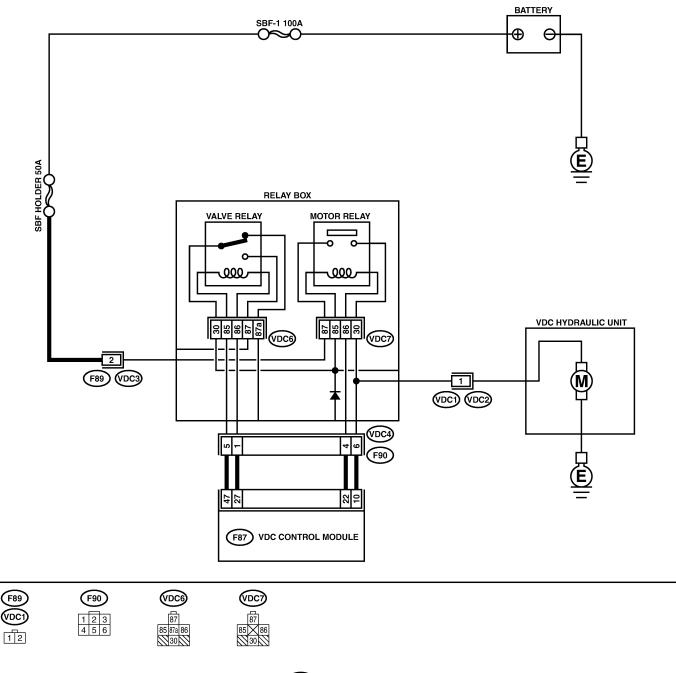
DIAGNOSIS:

- Faulty motor relay
- Faulty harness connector

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.

WIRING DIAGRAM:



F87

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55

56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83

B4M2329

No.	Step	Check	Yes	No
1	CHECK RESISTANCE OF MOTOR RELAY.	Is the resistance between	Go to step 2.	Replace motor
l [*]	1) Turn ignition switch to OFF.	70 and 90 Ω ?	Go to stop 2.	relay.
	2) Remove motor relay from relay box.			
	3) Measure resistance between motor relay			
	terminals.			
	Terminals			
	No. 85 — No. 86:		0	D
2	CHECK CONTACT POINT OF MOTOR RELAY.	Is the resistance less than 0.5Ω ?	Go to step 3.	Replace motor relay.
	1) Connect battery to motor relay terminals	0.5 22 !		Telay.
	No. 85 and No. 86.			
	2) Measure resistance between motor relay			
	terminals.			
	Terminals			
	No. 30 — No. 87:			
3	CHECK SHORT OF MOTOR RELAY.	Is the resistance more than	Go to step 4.	Replace motor
	Measure resistance between motor relay terminals.	1 MΩ?		relay.
	Terminals			
	No. 85 — No. 30:			
	No. 85 — No. 87:			
4	CHECK INPUT VOLTAGE OF RELAY BOX.	Is the voltage between 10	Go to step 5.	Repair harness/
	1) Disconnect connector (F89) from relay box.	and 15 V?		connector
	2) Disconnect connector from VDCCM.			between battery
	3) Turn ignition switch to ON.			and relay box, and check fuse
	4) Measure voltage between relay box connector and chassis ground.			SBF holder.
	Connector & terminal			ODI HOIGOI.
	(F89) No. 2 (+) — Chassis ground (-):			
5	CHECK INPUT VOLTAGE OF MOTOR	Is the voltage between 10	Go to step 6.	Replace relay
	RELAY.	and 15 V?		box.
	1) Turn ignition switch to OFF.			
	2) Connect connector (F89) to relay box. 3) Turn ignition switch to ON.			
	4) Measure voltage between relay box and			
	chassis ground.			
	Connector & terminal			
	Relay installing point No. 87 (+) —			
	Chassis ground (–):			
6	CHECK OPEN CIRCUIT IN CONTACT	Is the resistance less than	Go to step 7.	Replace relay
	POINT CIRCUIT OF RELAY BOX. 1) Turn ignition switch to OFF.	0.5 Ω?		box.
	2) Disconnect connectors (VDC2, F90) from			
	relay box.			
	3) Measure resistance between relay box			
	connector unit and motor relay installing por-			
	tion.			
	Connector & terminal (VDC1) No. 1 — Motor relay installing			
	(VDC1) No. 1 — Motor relay installing portion No. 30:			
7	CHECK OPEN CIRCUIT IN MONITOR SYS-	Is the resistance less than	Go to step 8.	Replace relay
	TEM CIRCUIT OF RELAY BOX.	0.5Ω ?	5.0 to 5top 6 .	box.
	Measure resistance between relay box con-			
	nector and motor relay installing point.			
	Connector & terminal			
	(VDC4) No. 6 — Motor relay installing			
	point No. 30:			

No.	Step	Check	Yes	No
8	CHECK OPEN CIRCUIT IN CONTROL CIR- CUIT OF RELAY BOX. Measure resistance between motor relay installing point and relay box connector. Connector & terminal (VDC4) No. 4 — Motor relay installing point No. 85:	Is the resistance less than 0.5 Ω ?	Go to step 9.	Replace relay box.
9	CHECK OPEN CIRCUIT IN CONTROL CIRCUIT OF RELAY BOX. 1) Remove valve relay from relay box. 2) Measure resistance between motor relay installing point and valve relay installing point. Connector & terminal Motor relay installing point No. 86— Valve relay installing point No. 30:	Is the resistance less than 0.5 Ω ?	Go to step 10.	Replace relay box.
10	CHECK GROUND SHORT IN CIRCUIT OF RELAY BOX. Measure resistance between relay box connector and chassis ground. Connector & terminal (VDC4) No. 4 — Chassis ground: (VDC4) No. 6 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 11.	Replace relay box.
11	CHECK BATTERY SHORT IN CIRCUIT OF RELAY BOX. Measure voltage between relay box connector and chassis ground. Connector & terminal (VDC4) No. 6 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 12.	Replace relay box.
12	CHECK BATTERY SHORT IN CIRCUIT OF RELAY BOX. 1) Turn ignition switch to ON. 2) Measure voltage between relay box connector and chassis ground. Connector & terminal (VDC4) No. 6 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 13.	Replace relay box.
13	CHECK OPEN CIRCUIT IN RELAY CONTROL SYSTEM HARNESS. Measure resistance between VDCCM connector and relay box connector. Connector & terminal (F87) No. 22 — (F90) No. 4: (F87) No. 10 — (F90) No. 6:	Is the resistance less than 0.5 Ω ?	Go to step 14.	Repair harness connector between VDCCM and relay box.
14	CHECK GROUND SHORT IN HARNESS BETWEEN RELAY BOX AND VDCCM. Measure resistance between VDCCM connector and chassis ground. Connector & terminal (F87) No. 22 — Chassis ground: (F87) No. 10 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 15.	Repair harness between VDCCM and relay box. Check fuse SBF holder.
15	CHECK BATTERY SHORT IN HARNESS BETWEEN RELAY BOX AND VDCCM. Measure voltage between VDCCM connector and chassis ground. Connector & terminal (F87) No. 10 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 16.	Repair harness between VDCCM and relay box. Check fuse SBF holder.

No.	Step	Check	Yes	No
16	CHECK BATTERY SHORT IN HARNESS BETWEEN RELAY BOX AND VDCCM. 1) Turn ignition switch to ON. 2) Measure voltage between VDCCM connector and chassis ground. Connector & terminal (F87) No. 10 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 17.	Repair harness between VDCCM and relay box. Check fuse SBF holder.
17	CHECK POOR CONTACT IN CONNECTORS. Turn ignition switch to OFF.	Is there poor contact in connector between VDCH/U, relay box and VDCCM?	Repair connector.	Go to step 18.
18	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM.	Go to step 19.
19	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

VDC (Diagnostics)

MEMO:

VDC (Diagnostics)

AO: DTC 52 MOTOR MALFUNCTION S005504180

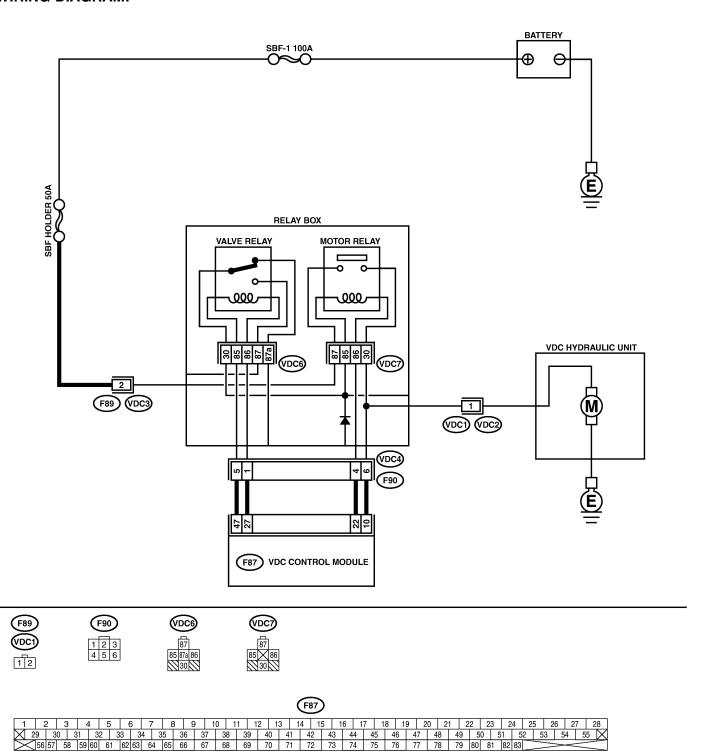
DIAGNOSIS:

- Faulty motor
- Faulty motor relay
- Faulty harness connector

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.

WIRING DIAGRAM:



B4M2329

No.	Step	Check	Yes	No
1	CHECK CONTACT POINT OF MOTOR RELAY. 1) Turn ignition switch to OFF.	Is the resistance less than 0.5 Ω ?	Go to step 2.	Replace motor relay.
	2) Remove motor relay from relay box.3) Connect battery to motor relay terminalsNo. 85 and No. 86.			
	4) Measure resistance between motor relay terminals. Terminals No. 30 — No. 87:			
2	CHECK CONTACT POINT OF MOTOR RELAY.	Is the resistance more than 1 M Ω ?	Go to step 3.	Replace motor relay.
	Disconnect battery from motor relay terminals. Measure resistance between motor relay			
	terminals. Terminals No. 30 — No. 87:			
3	CHECK INPUT VOLTAGE OF RELAY BOX. 1) Disconnect connector (F89) from relay box. 2) Disconnect connector from VDCCM. 3) Turn ignition switch to ON. 4) Measure voltage between relay box connector and chassis ground. Connector & terminal (F89) No. 2 (+) — Chassis ground (-):	Is the voltage between 10 and 15 V?	Go to step 4.	Repair harness/ connector between battery and relay box, and check fuse SBF holder.
4	CHECK INPUT VOLTAGE OF MOTOR RELAY. 1) Turn ignition switch to OFF. 2) Connect connector (F89) to relay box. 3) Turn ignition switch to ON. 4) Measure voltage between relay box and chassis ground. Connector & terminal Relay installing point No. 87 (+) — Chassis ground (-):	Is the voltage between 10 and 15 V?	Go to step 5.	Replace relay box.
5	CHECK CONDITION OF MOTOR GROUND. Tightening torque: 32±10 N·m (3.3±1.0 kgf-m, 24±7 ft-lb)	Is the motor ground terminal tightly clamped?	Go to step 6.	Tighten the clamp of motor ground terminal.
6	CHECK VDCCM MOTOR DRIVE TERMINAL. 1) Turn ignition switch OFF. 2) Remove VDC connector cover. <ref. connector="" cover.="" to="" vdc-17,="" vdccm=""> 3) Connect all connectors. 4) Install motor relay. 5) Operate the ABS check sequence. <ref. abs="" control.="" sequence="" to="" vdc-16,=""> 6) Measure voltage between VDCCM connector terminals. Connector & terminal (F87) No. 22 (+) — No. 1 (-):</ref.></ref.>	Does the voltage drop from between 10 V and 13 V to less than 1.5 V, and rise to between 10 V and 13 V again when carrying out the check sequence?	Go to step 7.	Replace VDCCM.
7	CHECK MOTOR OPERATION. Operate the check sequence. <ref. control.="" sequence="" to="" vdc="" vdc-19,=""></ref.>	Can motor revolution noise (buzz) be heard when carrying out the check sequence?	Go to step 8.	Replace VDCH/U.
8	CHECK POOR CONTACT IN CONNECTORS. Turn ignition switch to OFF.	Is there poor contact in connector between VDCH/U, relay box and VDCCM?	Repair connector.	Go to step 9.

No.	Step	Check	Yes	No
9	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM.	Go to step 10.
10	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

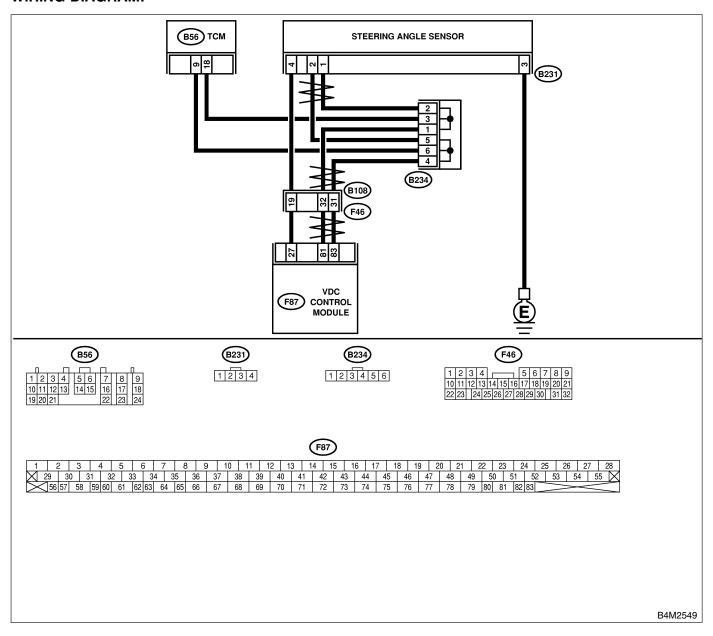
AP: DTC 71 STEERING ANGLE SENSOR OFFSET IS TOO BIG. SOOSSOAJ73

DIAGNOSIS:

Faulty steering angle sensor

TROUBLE SYMPTOM:

VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK THE STEERING WHEEL. 1) Drive the vehicle on a flat road. 2) Stop the vehicle in a straight line. 3) Check the angle of steering wheel.	Is the angle of steering wheel within 5°?	Go to step 2.	Perform centering alignment of steering wheel.
2	CHECK VDCCM. 1) Turn ignition switch to OFF. 2) Connect all connectors. 3) Erase the memory. 4) Perform inspection mode. 5) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 3.
3	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

AQ: DTC 71 CHANGE RANGE OF STEERING ANGLE SENSOR IS TOO BIG.

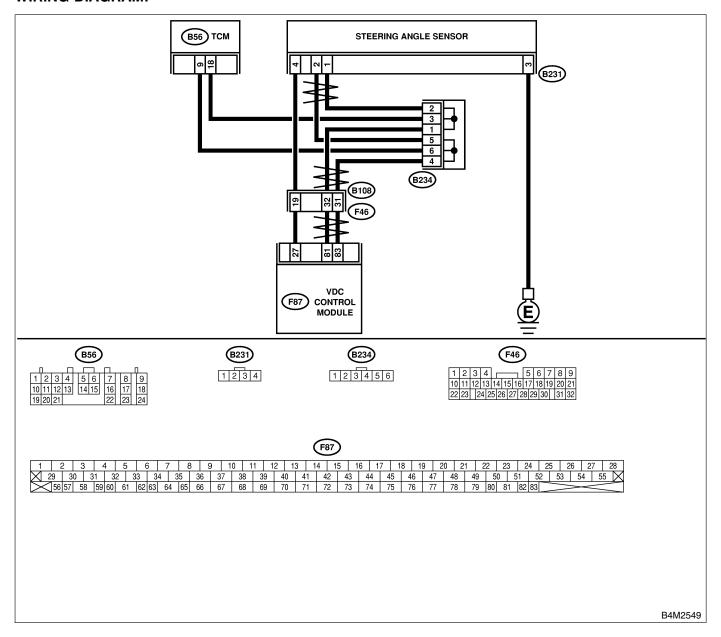
S005504J74

DIAGNOSIS:

Faulty steering angle sensor

TROUBLE SYMPTOM:

VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK VDCCM. 1) Turn ignition switch to OFF. 2) Connect all connectors. 3) Erase the memory. 4) Perform inspection mode. 5) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 2.
2	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

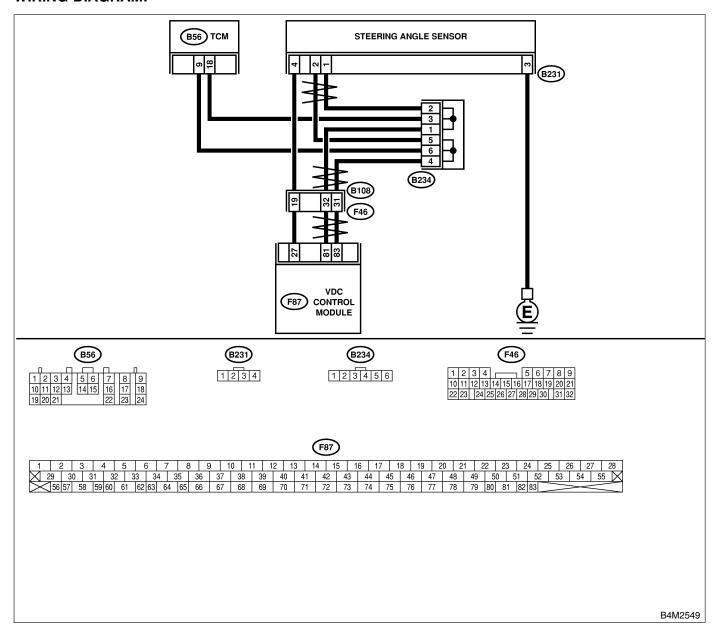
AR: DTC 71 STEERING ANGLE SENSOR MALFUNCTION S005504J75

DIAGNOSIS:

Faulty steering angle sensor

TROUBLE SYMPTOM:

VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK THE STEERING WHEEL. 1) Drive the vehicle on a flat road. 2) Stop the vehicle in a straight line. 3) Check the angle of steering wheel.	Is the angle of steering wheel within 5°?	Go to step 2.	Perform centering alignment of steering.
2	CHECK OUTPUT OF STEERING ANGLE SENSOR USING SELECT MONITOR. 1) Select "Current data display & Save" on the select monitor. 2) Read steering angle sensor output on the select monitor display.	Does the steering angle sensor output (value) change on the monitor display when the steering wheel is turned in either direction?	Go to step 3.	Replace steering angle sensor.
3	CHECK RUNNING FIELD. Check if the vehicle was driven on banked road surfaces or sandy surfaces (not dirt road surfaces).	Was the vehicle driven on banked road surfaces or sandy surfaces (not dirt road surfaces)?	Driving on banked road surfaces or sandy surfaces (not dirt road surfaces) sometimes results in a VDCCM memory diagnostic trouble code.	Go to step 4.
4	CHECK VDCCM. 1) Turn ignition switch to OFF. 2) Connect all connectors. 3) Erase the memory. 4) Perform inspection mode. 5) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 5.
5	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

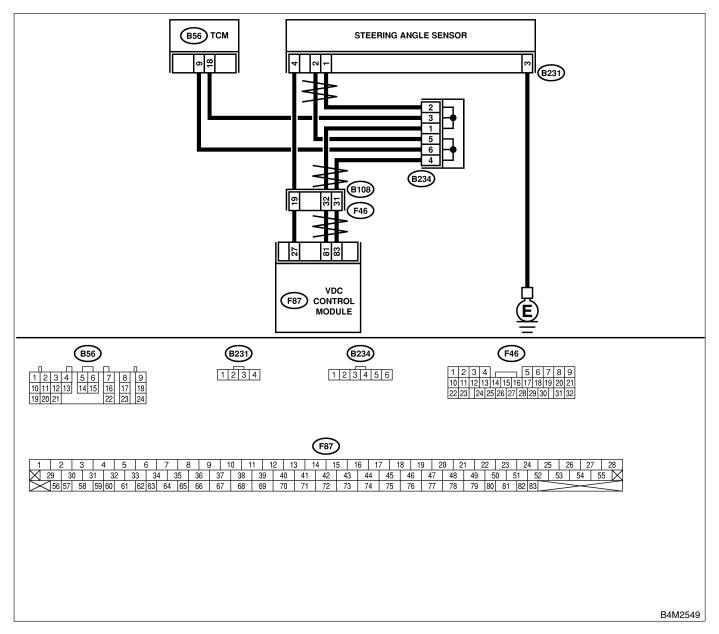
AS: DTC 71 NO SIGNAL FROM STEERING ANGLE SENSOR S005504J76

DIAGNOSIS:

• Faulty steering angle sensor

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK POWER SUPPLY OF STEERING ANGLE SENSOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from steering angle sensor. 3) Turn ignition switch to ON. 4) Measure voltage between steering angle sensor and chassis ground.	Is the voltage between 10 and 15 V?	Go to step 4.	Go to step 2.
	Connector & terminal (B231) No. 4 — Chassis ground:			
2	CHECK OUTPUT VOLTAGE OF VDCCM. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM. 3) Remove cover for VDCCM connector. <ref. control.="" sequence="" to="" vdc="" vdc-19,=""> 4) Connect connector to VDCCM. 5) Turn ignition switch to ON. 6) Measure voltage between VDCCM and chassis ground. Connector & terminal (F87) No. 27 — Chassis ground:</ref.>	Is the voltage between 10 and 15 V?	Repair harness between yaw rate sensor and VDCCM.	Go to step 3.
3	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in yaw rate sensor connector?	Repair or replace VDCCM connector.	Replace VDCCM.
4	CHECK GROUND CIRCUIT OF STEERING ANGLE SENSOR. Measure resistance between steering sensor and chassis ground. Connector & terminal (B231) No. 3 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 5.	Repair steering angle sensor ground harness.
5	CHECK HARNESS OF STEERING ANGLE SENSOR. 1) Connect connector to steering angle sensor. 2) Disconnect connector from VDCCM. 3) Measure resistance between VDCCM connector terminals. Connector & terminal (F87) No. 81 — No. 83:	Is the resistance 120±6 Ω ?	Repair harness between steering angle sensor and VDCCM.	Go to step 6.
6	CHECK STEERING ANGLE SENSOR. 1) Turn ignition switch to OFF. 2) Connect all connectors. 3) Erase the memory. 4) Perform inspection mode. 5) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Go to step 8.	Go to step 7.
7	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.
8	CHECK VDCCM. 1) Turn ignition switch to OFF. 2) Replace steering angle sensor. 3) Erase the memory. 4) Perform inspection mode. 5) Read out the diagnostic trouble code.	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 9.

No.	Step	Check	Yes	No
9	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	diagnosis corre-	The original steering angle sensor has been faulty.

VDC (Diagnostics)

MEMO:

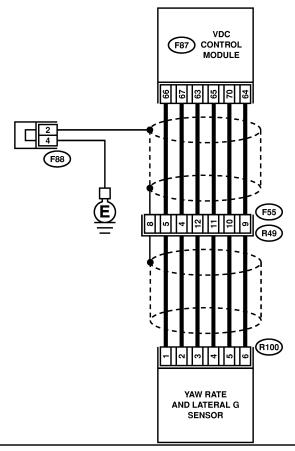
AT: DTC 72 ABNORMAL YAW RATE SENSOR OUTPUT SOO5504J77

DIAGNOSIS:

Faulty yaw rate sensor

TROUBLE SYMPTOM:

VDC does not operate.











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No.	Step	Check	Yes	No
1	CHECK RUNNING FIELD. Check if the vehicle was driven on banked road surfaces or sandy surfaces (not dirt road surfaces).	Was the vehicle driven on banked road surfaces or sandy surfaces (not dirt road surfaces)?	Driving on banked road surfaces or sandy surfaces (not dirt road surfaces) sometimes results in a VDCCM memory diagnostic trouble code.	Go to step 2.
2	CHECK INSTALLATION OF YAW RATE AND LATERAL G SENSOR. Check installation of yaw rate and lateral G sensor.	Is the yaw rate and lateral G sensor fixed securely?	Go to step 3.	Install yaw rate and lateral G sen- sor securely.
3	CHECK OUTPUT OF YAW RATE AND LATERAL G SENSOR USING SELECT MONITOR. 1) Drive the vehicle on a flat road. 2) Stop the vehicle in a straight line. 3) Select "Current data display & Save" on the select monitor. 4) Read yaw rate and lateral G sensor output on the select monitor display.	Is the yaw rate and lateral G sensor output on monitor display 0±5.25 deg?	Go to step 4.	Replace yaw rate and lateral G sen- sor. <ref. to="" vdc-<br="">22, Yaw Rate and Lateral G Sen- sor.></ref.>
4	CHECK OUTPUT OF STEERING ANGLE SENSOR USING SELECT MONITOR. 1) Drive the vehicle on a flat road. 2) Stop the vehicle in a straight line. 3) Select "Current data display & Save" on the select monitor. 4) Read steering angle sensor output on the select monitor display.	Is the steering angle sensor output on monitor display 0±2.5°?	Go to step 5.	Perform centering alignment of steering wheel.
5	CHECK YAW RATE AND LATERAL G SENSOR. 1) Turn ignition switch to OFF. 2) Connect all connectors. 3) Erase the memory. 4) Perform inspection mode. 5) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Go to step 6.	Go to step 7.
6	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.
7	CHECK VDCCM. 1) Turn ignition switch to OFF. 2) Replace yaw rate and lateral G sensor. 3) Erase the memory. 4) Perform inspection mode. 5) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 8.
8	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	The original yaw rate and lateral G sensor has been faulty.

VDC (Diagnostics)

AU: DTC 72 VOLTAGE INPUTTED TO YAW RATE SENSOR EXCEEDS SPECIFICATION. 8005504J78

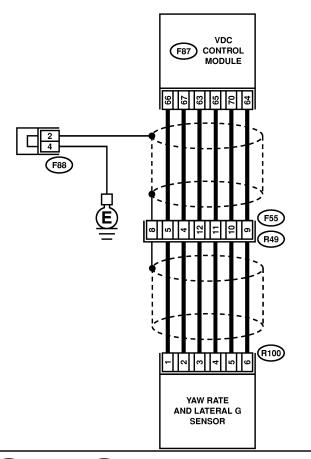
DIAGNOSIS:

• Faulty yaw rate sensor

TROUBLE SYMPTOM:

• VDC does not operate.

WIRING DIAGRAM:









F87

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B4M2552

No.	Step	Check	Yes	No
1	CHECK POWER SUPPLY OF YAW RATE AND LATERAL G SENSOR. 1) Turn ignition switch OFF. 2) Disconnect connector from yaw rate and lateral G sensor. 3) Turn ignition switch to ON. 4) Measure voltage between yaw rate and lateral G sensor and chassis ground. Connector & terminal (R100) No. 3 — Chassis ground:	Is the voltage between 10 and 15 V?	Go to step 4.	Go to step 2.
2	CHECK OUTPUT VOLTAGE OF VDCCM. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM. 3) Remove cover for VDCCM connector. <ref. connector="" cover.="" to="" vdc-17,="" vdccm=""> 4) Connect connector to VDCCM. 5) Turn ignition switch to ON. 6) Measure voltage between VDCCM and chassis ground. Connector & terminal (F87) No. 63 — Chassis ground:</ref.>	Is the voltage between 10 and 15 V?	Repair harness between yaw rate and lateral G sen- sor and VDCCM.	Go to step 3.
3	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in yaw rate and lateral G sensor connector?	Repair or replace VDCCM connector.	Replace VDCCM.
4	CHECK HARNESS OF YAW RATE AND LATERAL G SENSOR. 1) Turn ignition switch OFF. 2) Disconnect connector from VDCCM. 3) Measure resistance between VDCCM and yaw rate and lateral G sensor. Connector & terminal (F87) No. 65 — (R100) No. 4:	Is the resistance less than 0.5 Ω ?	Go to step 5.	Repair harness between yaw rate and lateral G sen- sor and VDCCM.
5	CHECK GROUND SHORT OF HARNESS. Measure resistance between VDCCM and chassis ground. Connector & terminal (F87) No. 65 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 6.	Repair harness between yaw rate and lateral G sen- sor and VDCCM.
6	CHECK BATTERY SHORT OF HARNESS. Measure voltage between VDCCM and chassis ground. Connector & terminal (F87) No. 65 (+) — Chassis ground (-):	Is the voltage less than 0.5 V?	Go to step 7.	Repair harness between yaw rate and lateral G sen- sor and VDCCM.
7	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to ON. 2) Measure voltage between VDCCM and chassis ground. Connector & terminal (F87) No. 65 (+) — Chassis ground (-):	Is the voltage less than 0.5 V?	Replace yaw rate and lateral G sen- sor. <ref. to="" vdc-<br="">22, Yaw Rate and Lateral G Sen- sor.></ref.>	Repair harness between yaw rate and lateral G sen- sor and VDCCM.

VDC (Diagnostics)

MEMO:

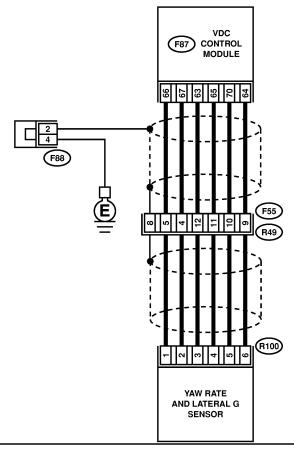
AV: DTC 72 ABNORMAL YAW RATE SENSOR REFERENCE VOLTAGE 5005504J79

DIAGNOSIS:

Faulty yaw rate sensor

TROUBLE SYMPTOM:

VDC does not operate.











No.	Step	Check	Yes	No
1	CHECK POWER SUPPLY OF YAW RATE AND LATERAL G SENSOR. 1) Turn ignition switch OFF. 2) Disconnect connector from yaw rate and lateral G sensor. 3) Turn ignition switch to ON. 4) Measure voltage between yaw rate and lateral G sensor and chassis ground. Connector & terminal (R100) No. 3 — Chassis ground:	Is the voltage between 10 and 15 V?	Go to step 4.	Go to step 2.
2	CHECK OUTPUT VOLTAGE OF VDCCM. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM. 3) Remove cover for VDCCM connector. <ref. connector="" cover.="" to="" vdc-17,="" vdccm=""> 4) Connect connector to VDCCM. 5) Turn ignition switch to ON. 6) Measure voltage between VDCCM and chassis ground. Connector & terminal (F87) No. 63 — Chassis ground:</ref.>	Is the voltage between 10 and 15 V?	Repair harness between yaw rate and lateral G sen- sor and VDCCM.	Go to step 3.
3	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in yaw rate and lateral G sensor connector?	Repair or replace VDCCM connector.	Replace VDCCM.
4	CHECK HARNESS OF YAW RATE AND LATERAL G SENSOR. 1) Disconnect connector from VDCCM. 2) Measure resistance between VDCCM and yaw rate and lateral G sensor. Connector & terminal (F87) No. 66 — (R100) No. 1:	Is the resistance less than 0.5 Ω ?	Go to step 5.	Repair harness between yaw rate and lateral G sen- sor and VDCCM.
5	CHECK GROUND SHORT OF HARNESS. Measure resistance between VDCCM and chassis ground. Connector & terminal (F87) No. 66 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 6.	Repair harness between yaw rate and lateral G sen- sor and VDCCM.
6	CHECK BATTERY SHORT OF HARNESS. Measure voltage between VDCCM and chassis ground. Connector & terminal (F87) No. 66 (+) — Chassis ground (-):	Is the voltage less than 0.5 V?	Go to step 7.	Repair harness between yaw rate and lateral G sen- sor and VDCCM.
7	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to ON. 2) Measure voltage between VDCCM and chassis ground. Connector & terminal (F87) No. 66 — Chassis ground:	Is the voltage less than 0.5 V?	Go to step 8.	Repair harness between yaw rate and lateral G sen- sor and VDCCM.
8	CHECK YAW RATE AND LATERAL G SENSOR. 1) Turn ignition switch to OFF. 2) Install yaw rate and lateral G sensor to body. 3) Remove VDCCM connector cover. <ref. connector="" cover.="" to="" vdc-17,="" vdccm=""> 4) Connect all connectors. 5) Turn ignition switch to ON. 6) Measure voltage between VDCCM connector terminals. Connector & terminal (F87) No. 66 (+) — No. 64 (-):</ref.>	Is the voltage between 2.1 and 2.9 V?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Replace yaw rate and lateral G sen- sor. <ref. to="" vdc-<br="">22, Yaw Rate and Lateral G Sen- sor.></ref.>

AW: DTC 72 CHANGE RANGE OF YAW RATE SENSOR SIGNAL IS TOO BIG.

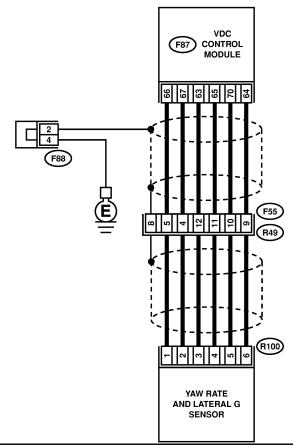
S005504J80

DIAGNOSIS:

Faulty yaw rate sensor

TROUBLE SYMPTOM:

VDC does not operate.











	1	1 2	2	3	4		5	6	7	8	3 () 1	0 1	1	12	3	14	15	16 1	7 1	18	19	20 2	1 .	22	23	24	25	26	3 2	7 28
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No.	Step	Check	Yes	No
1	CHECK RUNNING FIELD.	Was the vehicle driven on surfaces with holes or bumps at high speeds?	When driving on surfaces with holes or bumps at high speeds, VDCCM sometimes records diagnostic trouble codes in memory.	Go to step 2.
2	CHECK INSTALLATION OF YAW RATE AND LATERAL G SENSOR. Check installation of yaw rate and lateral G sensor.	Is the yaw rate and lateral G sensor fixed securely?	Go to step 3.	Install yaw rate and lateral G sensor securely.
3	CHECK POWER SUPPLY OF YAW RATE AND LATERAL G SENSOR. 1) Turn ignition switch OFF. 2) Disconnect connector from yaw rate and lateral G sensor. 3) Turn ignition switch to ON. 4) Measure voltage between yaw rate and lateral G sensor and chassis ground. Connector & terminal (R100) No. 3 — Chassis ground:	Is the voltage between 10 and 15 V?	Go to step 6.	Go to step 4.
4	CHECK OUTPUT VOLTAGE OF VDCCM. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM. 3) Remove cover for VDCCM connector. <ref. connector="" cover.="" to="" vdc-17,="" vdccm=""> 4) Connect connector to VDCCM. 5) Turn ignition switch to ON. 6) Measure voltage between VDCCM and chassis ground. Connector & terminal (F87) No. 63 — Chassis ground:</ref.>	Is the voltage between 10 and 15 V?	Repair harness between yaw rate and lateral G sen- sor and VDCCM.	Go to step 5.
5	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in yaw rate and lateral G sensor connector?	Repair or replace VDCCM connector.	Replace VDCCM.
6	CHECK GROUND CIRCUIT OF YAW RATE AND LATERAL G SENSOR. Measure resistance between yaw rate and lateral G sensor and chassis ground. Connector & terminal (R100) No. 6 — Chassis ground:	Is the resistance less than 0.5 Ω ?	Go to step 9.	Go to step 7.
7	CHECK GROUND CIRCUIT OF VDCCM. 1) Disconnect connector from VDCCM. 2) Remove cover from VDCCM connector. <ref. connector="" cover.="" to="" vdc-17,="" vdccm=""> 3) Connect connector to VDCCM. 4) Measure resistance between VDCCM and chassis ground. Connector & terminal (F87) No. 64 — Chassis ground:</ref.>	Is the resistance less than 0.5 Ω ?	Repair harness between yaw rate and lateral G sen- sor and VDCCM.	Go to step 8.
8	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in VDCCM connector?	Repair or replace VDCCM connector.	Replace VDCCM.

No.	Step	Check	Yes	No
9	CHECK HARNESS OF YAW RATE SENSOR. 1) Disconnect connector from VDCCM. 2) Measure resistance between VDCCM and yaw rate and lateral G sensor. Connector & terminal (F87) No. 65 — (R100) No. 4: (F87) No. 66 — (R100) No. 1: (F87) No. 67 — (R100) No. 2:	Is the resistance less than 0.5 Ω ?	Go to step 10.	Repair harness between yaw rate and lateral G sen- sor and VDCCM.
10	CHECK GROUND SHORT OF HARNESS. Measure resistance between VDCCM and chassis ground. Connector & terminal (F87) No. 65 — Chassis ground: (F87) No. 66 — Chassis ground: (F87) No. 67 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega\mbox{?}$	Go to step 11.	Repair harness between yaw rate and lateral G sen- sor and VDCCM.
11	CHECK BATTERY SHORT OF HARNESS. Measure voltage between VDCCM and chassis ground. Connector & terminal (F87) No. 65 (+) — Chassis ground (-): (F87) No. 67 (+) — Chassis ground (-):	Is the voltage less than 0.5 V?	Go to step 12.	Repair harness between yaw rate and lateral G sen- sor and VDCCM.
12	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to ON. 2) Measure voltage between VDCCM and chassis ground. Connector & terminal (F87) No. 65 — Chassis ground: (F87) No. 66 — Chassis ground: (F87) No. 67 — Chassis ground:	Is the voltage less than 0.5 V?	Go to step 13.	Repair harness between yaw rate and lateral G sen- sor and VDCCM.
13	CHECK YAW RATE AND LATERAL G SENSOR. 1) Turn ignition switch to OFF. 2) Install yaw rate and lateral G sensor to body. 3) Connect all connectors. 4) Turn ignition switch to ON. 5) Measure voltage between yaw rate and lateral G sensor connector terminals. Connector & terminal (F87) No. 66 (+) — No. 64 (-):	Is the voltage between 2.1 and 2.9 V?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Replace yaw rate and lateral G sen- sor. <ref. to="" vdc-<br="">22, Yaw Rate and Lateral G Sen- sor.></ref.>

VDC (Diagnostics)

MEMO:

VDC (Diagnostics)

AX: DTC 73 LATERAL G SENSOR OFFSET IS TOO BIG. S005504J81

NOTE:

For diagnostic procedure, refer to DTC 73. <Ref. VDC-236, DTC 73 EXCESSIVE LATERAL G SENSOR SIGNAL, Diagnostics Chart with Select Monitor.>

AY: DTC 73 ABNORMAL LATERAL G SENSOR OUTPUT S005504J82

NOTE:

For diagnostic procedure, refer to DTC 73. <Ref. VDC-236, DTC 73 EXCESSIVE LATERAL G SENSOR SIGNAL, Diagnostics Chart with Select Monitor.>

AZ: DTC 73 CHANGE RANGE OF LATERAL G SENSOR IS TOO BIG. SODSOOLABS

NOTE:

For diagnostic procedure, refer to DTC 73. <Ref. VDC-236, DTC 73 EXCESSIVE LATERAL G SENSOR SIGNAL, Diagnostics Chart with Select Monitor.>

BA: DTC 73 EXCESSIVE LATERAL G SENSOR SIGNAL SOO5504J84

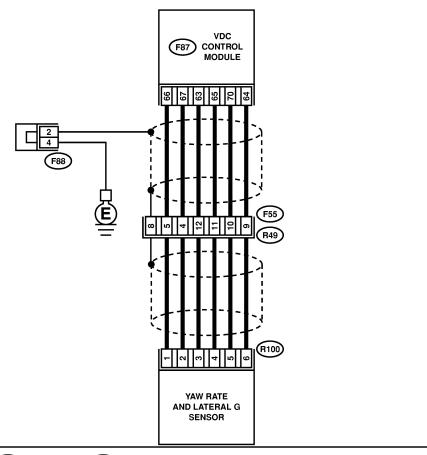
DIAGNOSIS:

Faulty lateral G sensor

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.

WIRING DIAGRAM:











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	1	1 2	2	3	4	5	,	6	7	8	. 9) 1	0 1	11	12	13	14 1	5	16	17	18	19	20) 21	2			24	25	26	27	28
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B4M2552

VDC (Diagnostics)

No.	Step	Check	Yes	No
1	CHECK INSTALLATION OF YAW RATE AND LATERAL G SENSOR. Check installation of yaw rate and lateral G sensor.	Is the yaw rate and lateral G sensor fixed securely?	Go to step 2.	Install yaw rate and lateral G sen- sor securely.
2	CHECK OUTPUT OF LATERAL G SENSOR USING SELECT MONITOR. 1) Stop the vehicle on a flat road. 2) Select "Current data display & Save" on the select monitor. 3) Read yaw rate and lateral G sensor output on the select monitor display.	Is the yaw rate and lateral G sensor output on monitor display 2.5±0.2 V?	Go to step 3.	Replace yaw rate and lateral G sen- sor. <ref. to="" vdc-<br="">22, Yaw Rate and Lateral G Sen- sor.></ref.>
3	CHECK POOR CONTACT IN CONNECTORS. Turn ignition switch to OFF.	Is there poor contact in connector between VDCCM and yaw rate and lateral G sensor?	Repair connector.	Go to step 4.
4	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 5.
5	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

VDC (Diagnostics)

MEMO:

VDC (Diagnostics)

BB: DTC 73 VOLTAGE INPUTTED TO LATERAL G SENSOR EXCEEDS SPECIFICATION. 5005504J85

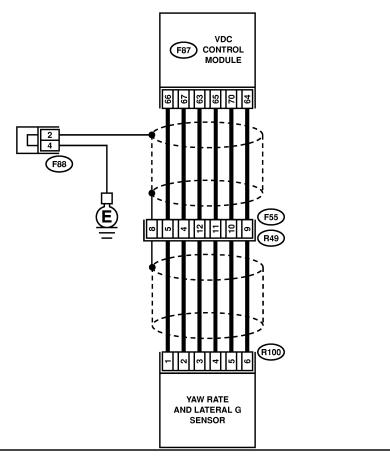
DIAGNOSIS:

• Faulty lateral G sensor

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.

WIRING DIAGRAM:











	1	1	2	3	4	5	; T	6	7	8	3 5) 1	0 1	1	12	13	14 1	5	16	17	18	19	20	21	22	2	3 2	25	2	6 2	7 2	8
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B4M2552

No.	Step	Check	Yes	No
1	CHECK OUTPUT OF YAW RATE AND LATERAL G SENSOR USING SELECT MONITOR. 1) Stop the vehicle on a flat road. 2) Select "Current data display & Save" on the select monitor. 3) Read yaw rate and lateral G sensor output on the select monitor display.	Is the yaw rate and lateral G sensor output on monitor display 2.5±0.2 V?	Go to step 2.	Go to step 5.
2	CHECK POOR CONTACT IN CONNECTORS. Turn ignition switch to OFF.	Is there poor contact in connector between VDCCM and yaw rate and lateral G sensor?	Repair connector.	Go to step 3.
3	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 4.
4	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.
5	CHECK INPUT VOLTAGE OF YAW RATE AND LATERAL G SENSOR. 1) Turn ignition switch to OFF. 2) Remove console box. 3) Disconnect connector from yaw rate and lateral G sensor. 4) Turn ignition switch to ON. 5) Measure voltage between yaw rate and lateral G sensor connector terminals. Connector & terminal (R100) No. 3 (+) — No. 6 (-):	Is the voltage between 10 and 15 V?	Go to step 6.	Repair harness/ connector between yaw rate and lateral G sen- sor and VDCCM.
6	CHECK YAW RATE AND LATERAL G SENSOR. 1) Turn ignition switch to OFF. 2) Measure resistance between yaw rate and lateral G sensor terminals. Terminals No. 3 — No. 5:	Is the resistance between 4.3 and 4.9 k Ω ?	Go to step 7.	Replace yaw rate and lateral G sen- sor.
7	CHECK OPEN CIRCUIT IN YAW RATE AND LATERAL G SENSOR OUTPUT HARNESS AND GROUND HARNESS. 1) Connect connector to yaw rate and lateral G sensor. 2) Disconnect connector from VDCCM. 3) Measure resistance between VDCCM connector terminals. Connector & terminal (F87) No. 69 — No. 70:	Is the resistance between 4.3 and 4.9 k Ω ?	Go to step 8.	Repair harness/ connector between yaw rate and lateral G sen- sor and VDCCM.
8	CHECK GROUND SHORT IN YAW RATE AND LATERAL G SENSOR HARNESS. 1) Disconnect connector from yaw rate and lateral G sensor. 2) Measure resistance between VDCCM connector and chassis ground. Connector & terminal (F87) No. 63 — Chassis ground: (F87) No. 70 — Chassis ground: (F87) No. 64 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 9.	Repair harness between yaw rate and lateral G sen- sor and VDCCM.

No.	Step	Check	Yes	No
9	CHECK YAW RATE AND LATERAL G SENSOR. 1) Turn ignition switch to OFF. 2) Remove yaw rate and lateral G sensor from vehicle. 3) Connect connector to yaw rate and lateral G sensor. 4) Connect connector to VDCCM. 5) Turn ignition switch to ON. 6) Measure voltage between yaw rate and lateral G sensor connector terminals. Connector & terminal (R100) No. 5 (+) — No. 6 (-):	Is the voltage between 2.3 and 2.7 V when yaw rate and lateral G sensor is horizontal?	Go to step 10.	Replace yaw rate and lateral G sen- sor. <ref. to="" vdc-<br="">22, Yaw Rate and Lateral G Sen- sor.></ref.>
10	CHECK YAW RATE AND LATERAL G SENSOR. Measure voltage between yaw rate and lateral G sensor connector terminals. Connector & terminal (R100) No. 5 (+) — No. 6 (-):	Is the voltage between 3.3 and 3.7 V when yaw rate and lateral G sensor is horizontal, and is inclined 90° to the left in front of the sensor?	Go to step 11.	Replace yaw rate and lateral G sen- sor. <ref. to="" vdc-<br="">22, Yaw Rate and Lateral G Sen- sor.></ref.>
11	CHECK YAW RATE AND LATERAL G SENSOR. Measure voltage between yaw rate and lateral G sensor connector terminals. Connector & terminal (R100) No. 5 (+) — No. 6 (-):	Is the voltage between 1.3 and 1.7 V when yaw rate and lateral G sensor is horizontal, and is inclined 90° to the right in front of the sensor?	Go to step 12.	Replace yaw rate and lateral G sen- sor. <ref. to="" vdc-<br="">22, Yaw Rate and Lateral G Sen- sor.></ref.>
12	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in connector between VDCCM and yaw rate and lateral G sensor?	Repair connector.	Go to step 13.
13	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 14.
14	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

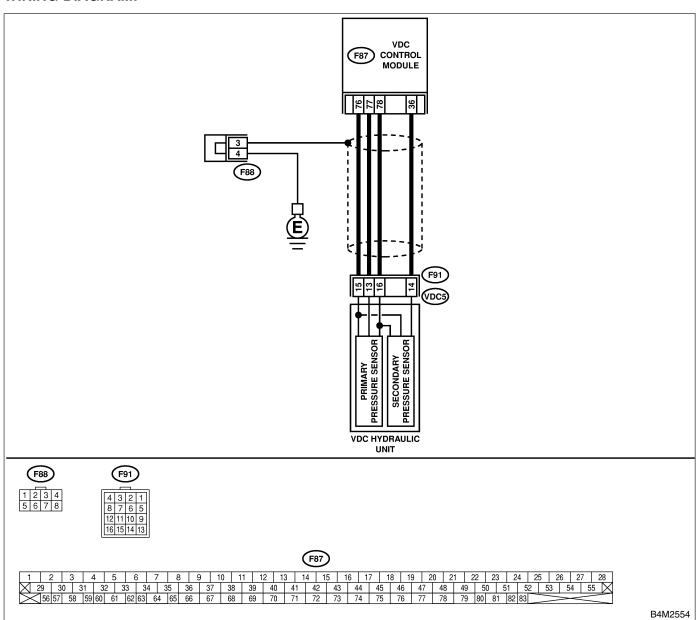
BC: DTC 74 VOLTAGE INPUTTED TO PRESSURE SENSOR 1 EXCEEDS SPECIFICATION. (PRIMARY PRESSURE SENSOR) 5005504J86

DIAGNOSIS:

• Faulty primary pressure sensor

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK GROUND CIRCUIT OF PRESSURE	Is the resistance less than	Go to step 4.	Go to step 2.
	SENSOR.	0.5 Ω?	·	·
	1) Turn ignition switch to OFF.			
	2) Disconnect connector (F91) from VDCH/U. 3) Measure resistance between VDCH/U con-			
	nector and chassis ground.			
	Connector & terminal			
	(F91) No. 15 — Chassis ground:			
2	CHECK GROUND CIRCUIT OF VDCCM.	Is the resistance less than	Replace harness	Go to step 3.
	1) Disconnect connector from VDCCM.	0.5 Ω?	between VDCH/U	
	2) Remove cover from VDCCM. <ref. td="" to<=""><td></td><td>and VDCCM.</td><td></td></ref.>		and VDCCM.	
	VDC-17, VDCCM Connector Cover.> 3) Connect connector to VDCCM.			
	4) Measure resistance between VDCCM and			
	chassis ground.			
	Connector & terminal			
	(F87) No. 76 — Chassis ground:			
3	CHECK POOR CONTACT IN CONNEC-	Is there poor contact in	Repair or replace	Replace VDCCM.
	TORS.	VDCCM connector?	VDCCM connec-	
<u> </u>	CHECK DOWED CURRY OF PRECURE	le the veltage between 4.75	tor.	Co to oto- F
4	CHECK POWER SUPPLY OF PRESSURE SENSOR.	Is the voltage between 4.75 and 5.25 V?	Go to step 7.	Go to step 5.
	NOTE:	and 3.23 V :		
	When this inspection is carried out, DTC 51			
	ABNORMAL VALVE RELAY is memorized,			
	but this does not indicate valve relay malfunc-			
	tion.			
	Turn ignition switch to ON. Measure voltage between VDCH/U con-			
	nector terminals.			
	Connector & terminal			
	(F91) No. 16 (+) — No. 15 (-):			
5	CHECK POWER SUPPLY OF VDCCM.	Is the voltage between 4.75	Repair harness	Go to step 6.
	1) Turn ignition switch to OFF.	and 5.25 V?	between VDCH/U	
	2) Disconnect connector from VDCCM. 3) Remove cover from VDCCM. <ref. td="" to<=""><td></td><td>and VDCCM.</td><td></td></ref.>		and VDCCM.	
	VDC-17, VDCCM Connector Cover.>			
	4) Connect connector to VDCCM.			
	5) Turn ignition switch to ON.			
	6) Measure voltage between VDCCM connec-			
	tor terminals. Connector & terminal			
	(F87) No. 78 (+) — No. 76 (-):			
6	CHECK POOR CONTACT IN CONNEC-	Is there poor contact in	Repair or replace	Replace VDCCM.
	TORS.	VDCCM connector?	VDCCM connec-	
			tor.	
7	CHECK GROUND SHORT OF HARNESS.	Is the resistance more than	Go to step 8.	Repair harness
	Turn ignition switch to OFF. Disconnect connector from VDCCM.	1 MΩ?		between VDCH/U and VDCCM.
	3) Measure resistance between VDCH/U con-			and vidooivi.
	nector and chassis ground.			
	Connector & terminal			
	(F91) No. 13 — Chassis ground:			
8	CHECK BATTERY SHORT OF HARNESS.	Is the voltage less than 0.5	Go to step 9.	Repair harness
	Measure voltage between VDCH/U connector	V?		between VDCH/U and VDCCM.
	and chassis ground. Connector & terminal			ailu VDCCIVI.
	(F91) No. 13 (+) — Chassis ground (-):			
	(101) 110. 10 (T) Unassis ground (-).			L

VDC (Diagnostics)

No.	Step	Check	Yes	No
9	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to ON. 2) Measure voltage between VDCH/U connector and chassis ground. Connector & terminal (F91) No. 13 (+) — Chassis ground (-):	Is the voltage less than 0.5 V?	Go to step 10.	Repair harness between VDCH/U and VDCCM.
10	CHECK INPUT VOLTAGE OF PRESSURE SENSOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM. 3) Remove cover from VDCCM. <ref. connector="" cover.="" to="" vdc-17,="" vdccm=""> 4) Connect connector to VDCCM. 5) Connect all connectors. 6) Turn ignition switch to ON. 7) Do not depress brake pedal. 8) Measure voltage between VDCCM connector terminals. Connector & terminal (F87) No. 77 (+) — No. 76 (-):</ref.>	Is the voltage between 0.48 and 0.72 V?	Go to step 11.	Replace VDCH/U. <ref. to="" vdc-11,<br="">Hydraulic Control Unit (H/U).></ref.>
11	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in connector between VDCCM and pressure sensor?	Repair connector.	Go to step 12.
12	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 13.
13	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

VDC (Diagnostics)

MEMO:

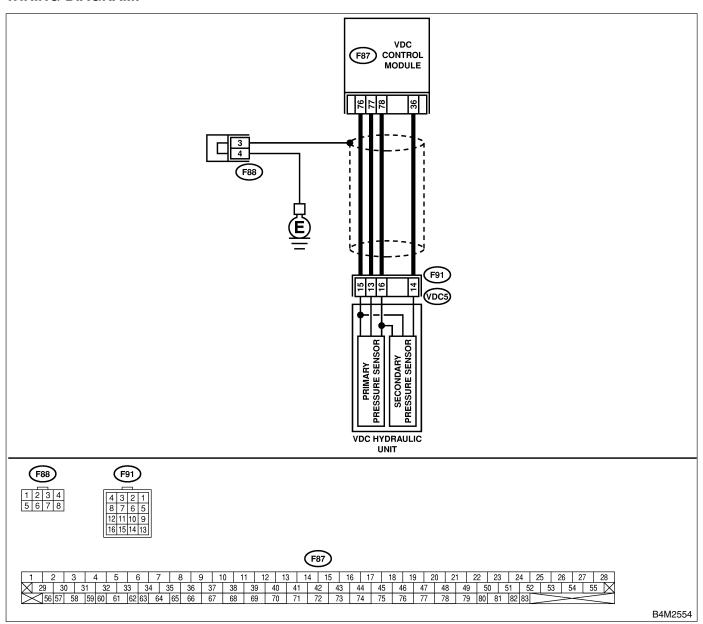
BD: DTC 74 VOLTAGE INPUTTED TO PRESSURE SENSOR 2 EXCEEDS SPECIFICATION. (SECONDARY PRESSURE SENSOR) 5005504J87

DIAGNOSIS:

• Faulty secondary pressure sensor

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK GROUND CIRCUIT OF PRESSURE SENSOR.	Is the resistance less than 0.5Ω ?	Go to step 4.	Go to step 2.
	 Turn ignition switch to OFF. Disconnect connector (F91) from VDCH/U. Measure resistance between VDCH/U connector and chassis ground. 			
	Connector & terminal (F91) No. 15 — Chassis ground:			
2	CHECK GROUND CIRCUIT OF VDCCM. 1) Disconnect connector from VDCCM. 2) Remove cover from VDCCM. <ref. connector="" cover.="" to="" vdc-17,="" vdccm=""> 3) Connect connector to VDCCM. 4) Measure resistance between VDCCM and chassis ground. Connector & terminal (F87) No. 76 — Chassis ground:</ref.>	Is the resistance less than 0.5 Ω ?	Replace harness between VDCH/U and VDCCM.	Go to step 3.
3	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in VDCCM connector?	Repair or replace VDCCM connector.	Replace VDCCM.
4	CHECK POWER SUPPLY OF PRESSURE SENSOR. NOTE: When this inspection is carried out, DTC 51 ABNORMAL VALVE RELAY is memorized, but this does not indicate valve relay malfunction. 1) Turn ignition switch to ON. 2) Measure voltage between VDCH/U connector terminals. Connector & terminal (F91) No. 16 (+) — No. 15 (-):	Is the voltage between 4.75 and 5.25 V?		Go to step 5.
5	CHECK POWER SUPPLY OF VDCCM. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM. 3) Remove cover from VDCCM. <ref. connector="" cover.="" to="" vdc-17,="" vdccm=""> 4) Connect connector to VDCCM. 5) Turn ignition switch to ON. 6) Measure voltage between VDCCM connector terminals. Connector & terminal (F87) No. 78 (+) — No. 76 (-):</ref.>	Is the voltage between 4.75 and 5.25 V?	Repair harness between VDCH/U and VDCCM.	Go to step 6.
6	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in VDCCM connector?	Repair or replace VDCCM connector.	Replace VDCCM.
7	CHECK GROUND SHORT OF HARNESS. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM. 3) Measure resistance between VDCH/U connector and chassis ground. Connector & terminal (F91) No. 14 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 8.	Repair harness between VDCH/U and VDCCM.
8	CHECK BATTERY SHORT OF HARNESS. Measure voltage between VDCH/U connector and chassis ground. Connector & terminal (F91) No. 14 (+) — Chassis ground (-):	Is the voltage less than 0.5 V?	Go to step 9.	Repair harness between VDCH/U and VDCCM.

No.	Step	Check	Yes	No
9	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to ON. 2) Measure voltage between VDCH/U connector and chassis ground. Connector & terminal (F91) No. 13 (+) — Chassis ground (-): (F91) No. 14 (+) — Chassis ground (-):	Is the voltage less than 0.5 V?	Go to step 10.	Repair harness between VDCH/U and VDCCM.
10	CHECK INPUT VOLTAGE OF PRESSURE SENSOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM. 3) Remove cover from VDCCM. <ref. connector="" cover.="" to="" vdc-17,="" vdccm=""> 4) Connect connector to VDCCM. 5) Connect all connectors. 6) Turn ignition switch to ON. 7) Do not depress brake pedal. 8) Measure voltage between VDCCM connector terminals. Connector & terminal (F87) No. 36 (+) — No. 76 (-):</ref.>	Is the voltage between 0.48 and 0.72 V?	Go to step 11.	Replace VDCH/U. <ref. to="" vdc-11,<br="">Hydraulic Control Unit (H/U).></ref.>
11	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in connector between VDCCM and pressure sensor?	Repair connector.	Go to step 12.
12	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 13.
13	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

VDC (Diagnostics)

MEMO:

BE: DTC 74 PRESSURE SENSOR 1 OFFSET IS TOO BIG. (PRIMARY PRESSURE SENSOR) 5005504J88

NOTE:

For diagnostic procedure, refer to DTC 74. <Ref. VDC-252, DTC 74 PRESSURE SENSOR 2 OFFSET IS TOO BIG. (SECONDARY PRESSURE SENSOR), Diagnostics Chart with Select Monitor.>

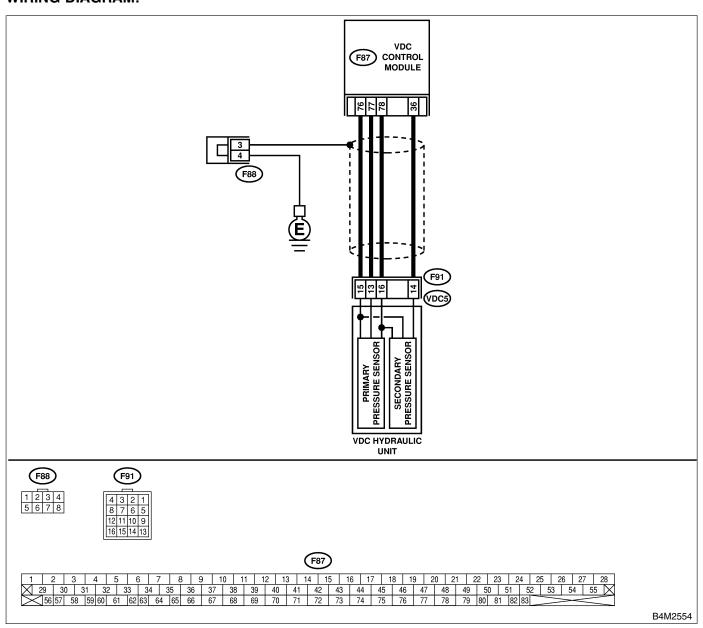
BF: DTC 74 PRESSURE SENSOR 2 OFFSET IS TOO BIG. (SECONDARY PRESSURE SENSOR) 5005504J89

DIAGNOSIS:

• Faulty pressure sensor

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK DRIVING TECHNIC. Check the driver's technic.	Are the accelerator and brake pedals depressed simultaneously while driving?	The VDC is normal. Erase the diagnostic trouble code. NOTE: Driving the vehicle with both the accelerator pedal and brake pedal depressed may store a diagnostic trouble code in the memory.	Go to step 2.
2	CHECK OUTPUT OF PRESSURE SENSOR USING SELECT MONITOR. 1) Select "Current data display & Save" on the select monitor. 2) Read pressure sensor output on the select monitor display.	Is the pressure sensor output on monitor display 0.6±0.12 V with brake pedal released?	Go to step 3.	Replace VDCH/U. <ref. to="" vdc-11,<br="">Hydraulic Control Unit (H/U).></ref.>
3	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 4.
4	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.

VDC (Diagnostics)

BG: DTC 74 DIFFERENTIAL PRESSURE OF PRESSURE SENSOR IS TOO

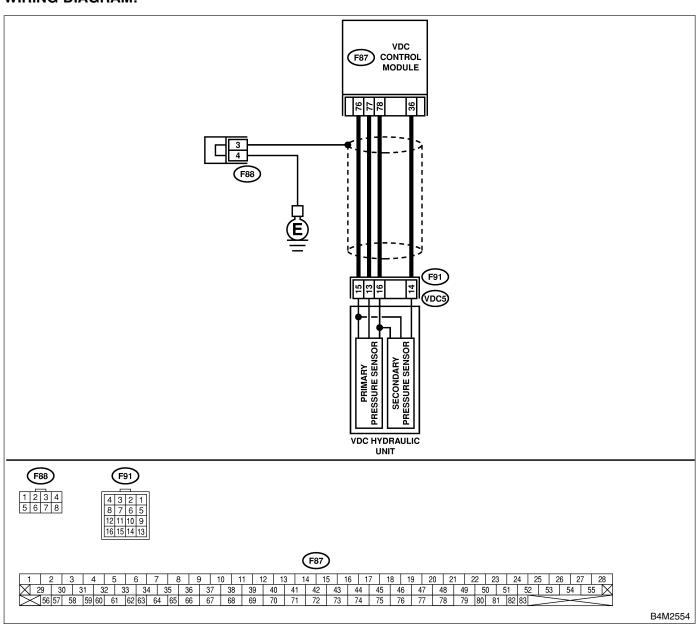
BIG. *S005504J90*

DIAGNOSIS:

• Faulty pressure sensor

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.



No.	Step	Check	Yes	No
1	CHECK GROUND SHORT OF HARNESS. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM. 3) Disconnect connector (F91) from VDCH/U. 4) Measure resistance between VDCH/U connector and chassis ground. Connector & terminal (F91) No. 13 — Chassis ground: (F91) No. 14 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega\mbox{?}$	Go to step 2.	Repair harness between VDCH/U and VDCCM.
2	CHECK BATTERY SHORT OF HARNESS. Measure voltage between VDCH/U connector and chassis ground. Connector & terminal (F91) No. 13 (+) — Chassis ground (-): (F91) No. 14 (+) — Chassis ground (-):	Is the voltage less than 0.5 V?	Go to step 3.	Repair harness between VDCH/U and VDCCM.
3	CHECK BATTERY SHORT OF HARNESS. 1) Turn ignition switch to ON. 2) Measure voltage between VDCH/U connector and chassis ground. Connector & terminal (F91) No. 13 (+) — Chassis ground (-): (F91) No. 14 (+) — Chassis ground (-):	Is the voltage less than 0.5 V?	Go to step 4.	Repair harness between VDCH/U and VDCCM.
4	CHECK INPUT VOLTAGE OF PRESSURE SENSOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM. 3) Remove cover from VDCCM. <ref. connector="" cover.="" to="" vdc-17,="" vdccm=""> 4) Connect connector to VDCCM. 5) Connect all connectors. 6) Turn ignition switch to ON. 7) Do not depress brake pedal. 8) Measure voltage between VDCCM connector terminals. Connector & terminal (F87) No. 77 (+) — No. 76 (-): (F87) No. 36 (+) — No. 76 (-):</ref.>	Is the voltage between 0.48 and 0.72 V?	Go to step 5.	Replace VDCH/U. <ref. to="" vdc-11,<br="">Hydraulic Control Unit (H/U).></ref.>
5	CHECK BRAKE FLUID LEAKAGE. Inspect fluid leakage between brake master cylinder and VDC H/U.	Does brake fluid leak?	Retighten or replace.	Go to step 6.
6	CHECK BRAKE MASTER CYLINDER. Inspect brake master cylinder hydraulic pressure. <ref. (with="" booster.="" br-31,="" brake="" check="" gauges),="" inspection,="" operation="" to=""></ref.>	Is hydraulic pressure nor- mal?	Go to step 7.	Replace master cylinder.
7	CHECK BRAKE PEDAL STROKE. Measure the stroke between non-forced pedal position and forced pedal position with 50 kg (110 lb).	Is the stroke less than 95 mm (3.74 in)?	Go to step 8.	Perform bleeding from brake system.
8	CHECK INPUT VOLTAGE OF PRESSURE SENSOR. 1) Depress the brake pedal with 50 kg (110 lb). 2) Measure voltage between VDCCM connector terminals. Connector & terminal A (F87) No. 77 (+) — No. 76 (-): B (F87) No. 36 (+) — No. 76 (-):	Is the voltage between A and B less than 0.2 V?	Go to step 9.	Replace VDCH/U.

VDC (Diagnostics)

No.	Step	Check	Yes	No
9	CHECK POOR CONTACT IN CONNECTORS.	Is there poor contact in connector between VDCCM and pressure sensor?	Repair connector.	Go to step 10.
10	CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the diagnostic trouble code.	Is the same diagnostic trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-9,<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 11.
11	CHECK ANY OTHER DIAGNOSTIC TROUBLE CODES APPEARANCE.	Are other diagnostic trouble codes being output?	Proceed with the diagnosis corresponding to the diagnostic trouble code.	A temporary poor contact.