VDC (DIAGNOSTICS)

15. Diagnostics Chart with Select Monitor 500504

A: COMMUNICATION FOR INITIALIZING IMPOSSIBLE (SELECT MONITOR COMMUNICATION FAILURE) 5005504E35

DIAGNOSIS:

Faulty harness connector
TROUBLE SYMPTOM:
ABS warning light remains on.

WIRING DIAGRAM:



VDC-126

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 com- munication 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 CON- NECTOR. 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 cir- cuit.
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 CON- NECTOR. 1) Turn ignition switch OFF. 2) Measure resistance between VDCCM con- nector 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 CONNEC- TORS.	Is there poor contact in connectors between VDCCM and data link con- nector?	Repair connector.	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>

VDC (DIAGNOSTICS)

B: TROUBLE CODE 21 FRONT RIGHT ABS SENSOR CIRCUIT OPEN OR SHORTED BATTERY 500504C48

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 27. <Ref. to VDC-128 TROUBLE CODE 27 REAR LEFT ABS SENSOR CIRCUIT OPEN OR SHORTED BATTERY, Diagnostics Chart with Select Monitor.>

C: TROUBLE CODE 23 FRONT LEFT ABS SENSOR CIRCUIT OPEN OR

SHORTED BATTERY S005504C58

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 27. <Ref. to VDC-128 TROUBLE CODE 27 REAR LEFT ABS SENSOR CIRCUIT OPEN OR SHORTED BATTERY, Diagnostics Chart with Select Monitor.>

D: TROUBLE CODE 25 REAR RIGHT ABS SENSOR CIRCUIT OPEN OR SHORTED BATTERY S005504C70

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 27. <Ref. to VDC-128 TROUBLE CODE 27 REAR LEFT ABS SENSOR CIRCUIT OPEN OR SHORTED BATTERY, Diagnostics Chart with Select Monitor.>

E: TROUBLE CODE 27 REAR LEFT ABS SENSOR CIRCUIT OPEN OR

SHORTED BATTERY S005504C79

DIAGNOSIS:

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

• Faulty harness connector

TROUBLE SYMPTOM:

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

VDC-128

WIRING DIAGRAM:



B4M2319

VDC-129

VDC (DIAGNOSTICS)

No	Sten	Check	Yes	No
1	CHECK OUTPUT OF ABS SENSOR USING SELECT MONITOR.	Does the speed indicated on the display change in	Go to step 2.	Go to step 9.
	 Select "Current data display & Save" on the select monitor. Read the ABS sensor output corresponding to the faulty system in the select monitor data display mode. 	response to the speedom- eter reading during acceleration/deceleration when the steering wheel is in the straight-ahead posi-		
2	CHECK INSTALLATION OF ABS SENSOR. <i>Tightening torque:</i> 32±10 N·m (3.3±1.0 kgf-m, 24±7 ft-lb)	Are the ABS sensor instal- lation bolts tightened securely?	Go to step 3.	Tighten ABS sen- sor 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 speci- fications?	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-32 Front Tone Wheel.> Rear <ref. to<br="">VDC-33 Rear Tone Wheel.></ref.></ref.
5	CHECK POOR CONTACT IN CONNEC- TORS. 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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 7.
7	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the 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 kΩ?	Go to step 9 .	Replace ABS sen- sor. Front <ref. to<br="">VDC-30 Front ABS Sensor.> Rear <ref. to<br="">VDC-31 Rear ABS Sensor.></ref.></ref.>

No.	Step	Check	Yes	No
9	CHECK BATTERY SHORT OF ABS SEN- SOR. 1) Disconnect connector from VDCCM. 2) Measure voltage between ABS sensor and chassis ground. Terminal Front RH No. 1 (+) — Chassis ground (-): Rear RH No. 1 (+) — Chassis ground (-): Rear LH No. 1 (+) — Chassis ground (-): Rear LH No. 1 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 10.	Replace ABS sen- sor. Front <ref. to<br="">VDC-30 Front ABS Sensor.> Rear <ref. to<br="">VDC-31 Rear ABS Sensor.></ref.></ref.>
10	CHECK BATTERY SHORT OF ABS SEN- SOR. 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 sen- sor. Front <ref. to<br="">VDC-30 Front ABS Sensor.> Rear <ref. to<br="">VDC-31 Rear ABS Sensor.></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 con- nector terminals. Connector & terminal Trouble code 21 / (F87) No. 14 — No. 15: Trouble code 23 / (F87) No. 49 — No. 19: Trouble code 25 / (F87) No. 18 — No. 46: Trouble code 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 Trouble code 21 / (F87) No. 14 (+) — Chassis ground (–): Trouble code 23 / (F87) No. 49 (+) — Chassis ground (–): Trouble code 25 / (F87) No. 18 (+) — Chassis ground (–): Trouble code 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 connec- tor and chassis ground. Connector & terminal Trouble code 21 / (F87) No. 14 (+) — Chassis ground (–): Trouble code 23 / (F87) No. 49 (+) — Chassis ground (–): Trouble code 25 / (F87) No. 18 (+) — Chassis ground (–): Trouble code 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. <i>Tightening torque:</i> 32±10 N·m (3.3±1.0 kgf-m, 24±7 ft-lb)	Are the ABS sensor instal- lation bolts tightened securely?	Go to step 15.	Tighten ABS sen- sor 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 speci- fications?	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-30<br="">Front ABS Sen- sor.> Rear <ref. to VDC-31 Rear ABS Sensor.></ref. </ref.>
17	CHECK POOR CONTACT IN CONNEC- TORS.	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 trouble code.	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 19.
19	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact. NOTE: Check harness and connectors between VDCCM and ABS sensor.

MEMO:

VDC-133

F: TROUBLE CODE 22 FRONT RIGHT ABS SENSOR SIGNAL SOUTHERS

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 28. <Ref. to VDC-134 TROUBLE CODE 28 REAR LEFT ABS SENSOR SIGNAL, Diagnostics Chart with Select Monitor.>

G: TROUBLE CODE 24 FRONT LEFT ABS SENSOR SIGNAL SOD504C65

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 28. <Ref. to VDC-134 TROUBLE CODE 28 REAR LEFT ABS SENSOR SIGNAL, Diagnostics Chart with Select Monitor.>

H: TROUBLE CODE 26 REAR RIGHT ABS SENSOR SIGNAL SOD504C74

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 28. <Ref. to VDC-134 TROUBLE CODE 28 REAR LEFT ABS SENSOR SIGNAL, Diagnostics Chart with Select Monitor.>

I: TROUBLE CODE 28 REAR LEFT ABS SENSOR SIGNAL SOUTCOME

DIAGNOSIS:

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

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



B4M2319

VDC-135

VDC (DIAGNOSTICS)

No.	Step	Check	Yes	No
1	CHECK OUTPUT OF ABS SENSOR USING SELECT MONITOR. 1) Select "Current data display & Save" on the select monitor.	Does the speed indicated on the display change in response to the speedom- eter reading during	Go to step 2.	Go to step 8.
	2) Read the ABS sensor output corresponding to the faulty system in the select monitor data display mode.	acceleration/deceleration when the steering wheel is in the straight-ahead posi- tion?		
2	CHECK POOR CONTACT IN CONNEC- TORS. 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 prop- erly 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 con- nector and chassis ground. Connector & terminal Trouble code 22 / (B62) No. A5 — Chassis ground: Trouble code 24 / (B62) No. A6 — Chassis ground: NOTE: For the trouble code 26 and 28, Go to step 6.	Is the resistance less than 0.5 Ω?	Go to step 6.	Repair shield har- ness.
6	CHECK VDCCM.1) Connect all connectors.2) Erase the memory.3) Perform inspection mode.4) Read out the trouble code.	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 7.
7	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary noise interference.
8	CHECK INSTALLATION OF ABS SENSOR. <i>Tightening torque:</i> 32±10 N·m (3.3±1.0 kgf-m, 24±7 ft-lb)	Are the ABS sensor instal- lation bolts tightened securely?	Go to step 9.	Tighten ABS sen- sor 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 speci- fications?	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 avail- able?	Go to step 11.	Go to step 12.

No.	Step	Check	Yes	No
11	CHECK ABS SENSOR SIGNAL.	Is oscilloscope pattern	Go to step 15.	Go to step 12.
	1) Raise all four wheels of ground.	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 trouble code			
	29.			
	Connector & terminal			
	Trouble code 22 / (F87) No. 14 (+) —			
	No. 15 (–):			
	Trouble code 24 / (F87) No. 49 (+) —			
	No. 19 (–):			
	Trouble code 26 / (F87) No. 18 (+) —			
	No. 46 (–):			
	Trouble code 28 / (F87) No. 16 (+) —			
	No. 17 (–):			
12	CHECK CONTAMINATION OF ABS SEN-	Is the ABS sensor pole	Thoroughly	Go to step 13
· -	SOR OR TONE WHEEL	piece or the tone wheel	remove dirt or	
	Remove disc rotor or drum from hub in accor-	contaminated by dirt or	other foreign mat-	
	dance with trouble code.	other foreign matter?	ter.	
12		Are there broken or dam-	Replace ABS con-	Go to step 14
13		aged in the ABS sensor	sor or tone wheel	
	TONE WHELE.	pole piece or the tone	Front < Ref to	
		wheel?	VDC-30 Front	
			ABS Sensor > and	
			<ref. th="" to="" vdc-32<=""><th></th></ref.>	
			Front Tone	
			Wheel.> Rear	
			<ref. th="" to="" vdc-31<=""><th></th></ref.>	
			Rear ABS Sen-	
			sor.> and <ref. th="" to<=""><th></th></ref.>	
			VDC-33 Rear	
			Tone Wheel.>	
14	CHECK TONE WHEEL RUNOUT	Is the runout less than 0.05	Go to step 15	Repair tone
l	Measure tone wheel runout	mm (0.0020 in)?		wheel. Front <ref< th=""></ref<>
				to VDC-32 Front
				Tone Wheel >
				Rear < Ref to
				VDC-33 Rear
				Tone Wheel.>
15	CHECK RESISTANCE OF ARS SENSOR	Is the resistance between	Go to sten 16	Replace ARS sen-
	1) Turn ignition switch OFF	1.0 and 1.5 kO?		sor Front -Ref to
	2) Disconnect connector from ABS sensor	1.0 010 1.0 122:		VDC-30 Front
	3) Measure resistance between ARS sensor			ABS Sensor >
	connector terminals			Rear - Ref to
	Terminal			VDC-31 Rear
	Front RH No. 1 — No. 2			ABS Sensor >
	Front I H No. 1 — No. 2:			
	Rear RH No. 1 — No. 2.			
	Rear I H No 1 - No 2			
L	Near LIT NO. 1 - NO. 2.			

No.	Step	Check	Yes	No
16	CHECK GROUND SHORT OF ABS SEN- SOR. Measure resistance between ABS sensor and chassis ground. <i>Terminal</i> <i>Front RH No. 1 — Chassis ground:</i> <i>Front LH No. 1 — Chassis ground:</i> <i>Rear RH No. 1 — Chassis ground:</i> <i>Rear LH No. 1 — Chassis ground:</i>	Is the resistance more than 1 MΩ?	Go to step 17.	Replace ABS sen- sor. Front <ref. to<br="">VDC-30 Front ABS Sensor.> Rear <ref. to<br="">VDC-31 Rear ABS Sensor.></ref.></ref.>
17	CHECK HARNESS/CONNECTOR BETWEEN VDCCM AND ABS SENSOR. 1) Connect connector to ABS sensor. 2) Disconnect connector from VDCCM. 3) Measure resistance at VDCCM connector terminals. Connector & terminal Trouble code 22 / (F87) No. 14 — No. 15: Trouble code 24 / (F87) No. 49 — No. 19: Trouble code 26 / (F87) No. 18 — No. 46: Trouble code 28 / (F87) No. 16 — No. 17:	Is the resistance between 1.0 and 1.5 kΩ?	Go to step 18.	Repair harness/ connector between VDCCM and ABS sensor.
18	CHECK GROUND SHORT OF HARNESS. Measure resistance between VDCCM connec- tor and chassis ground. Connector & terminal Trouble code 22 / (F87) No. 14 — Chas- sis ground: Trouble code 24 / (F87) No. 49 — Chas- sis ground: Trouble code 26 / (F87) No. 18 — Chas- sis ground: Trouble code 28 / (F87) No. 16 — Chas- sis ground:	Is the resistance more than 1 MΩ?	Go to step 19.	Repair harness/ connector between VDCCM and ABS sensor.
19	CHECK GROUND CIRCUIT OF VDCCM. 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 20.	Repair VDCCM ground harness.
20	CHECK POOR CONTACT IN CONNEC- TORS.	Is there poor contact in connectors between VDCCM and ABS sensor?	Repair connector.	Go to step 21.
21	CHECK SOURCES OF SIGNAL NOISE.	Is the car telephone or the wireless transmitter prop- erly installed?	Go to step 22 .	Properly install the car telephone or the wireless transmitter.
22	CHECK SOURCES OF SIGNAL NOISE.	Are noise sources (such as an antenna) installed near the sensor harness?	Install the noise sources apart from the sensor harness.	Go to step 23.

No.	Step	Check	Yes	No
23	CHECK SHIELD CIRCUIT. 1) Connect all connectors. 2) Measure resistance between shield con- nector and chassis ground. Connector & terminal Trouble code 22 / (B62) No. A5 — Chassis ground: Trouble code 24 / (B62) No. A6 — Chassis ground: NOTE: For the trouble code 26 and 28, Go to step 25.	Is the resistance less than 0.5 Ω?	Go to step 24 .	Repair shield har- ness.
24	 CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 25.
25	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary noise interference.

J: TROUBLE CODE 29 ANY ONE OF FOUR ABS SENSOR SIGNAL SOUTHARD

DIAGNOSIS:

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

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



B4M2319

VDC-141

No.	Step	Check	Yes	No
<u>No.</u> 1	Step CHECK IF THE WHEELS HAVE TURNED FREELY FOR A LONG TIME.	Check if the wheels have been turned freely for more than one minute, such as when the vehicle is jacked- up, under full-lock corner- ing or when tire is not in contact with road surface.	Yes The VDC is nor- mal. Erase the trouble code. NOTE: When the wheels turn freely for a long time, such as when the vehicle is towed or jacked-up, or when steering wheel is continu- ously turned all the way, this	No Go to step 2.
			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- sively?	Replace tire.	Go to step 4.
4	CHECK TIRE PRESSURE.	Is the tire pressure correct?	Go to step 5.	Adjust tire pres- sure.
5	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 instal- lation bolts tightened securely?	Go to step 6.	Tighten ABS sen- sor installation bolts securely.
6	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 speci- fications?	Go to step 7.	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.
7	CHECK OSCILLOSCOPE.	Is an oscilloscope avail- able?	Go to step 8.	Go to step 9.
8	CHECK ABS SENSOR SIGNAL. 1) Raise all four wheels of ground. 2) Turn ignition switch OFF. 3) Remove VDCCM connector cover. <ref. to<br="">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 trouble code 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):</ref.>	Is oscilloscope pattern smooth, as shown in fig- ure?	Go to step 12.	Go to step 9 .

No.	Step	Check	Yes	No
9	CHECK CONTAMINATION OF ABS SEN- SOR 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 mat- ter.	Go to step 10.
10	CHECK DAMAGE OF ABS SENSOR OR TONE WHEEL.	Are there broken or dam- aged teeth in the ABS sen- sor pole piece or the tone wheel?	Replace ABS sen- sor or tone wheel. Front <ref. to<br="">VDC-30 Front ABS Sensor.> and <ref. to="" vdc-32<br="">Front Tone Wheel.> Rear <ref. to="" vdc-31<br="">Rear ABS Sen- sor.> and <ref. to<br="">VDC-33 Rear Tone 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-32 Front Tone Wheel.> Rear <ref. to<br="">VDC-33 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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 13 .
13	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

K: TROUBLE CODE 31 FR HOLD VALVE MALFUNCTION (FRONT RIGHT INLET VALVE MALFUNCTION) 5005504/CS2

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 62. <Ref. to VDC-144 TROUBLE CODE 62 NORMAL OPENING VALVE 1 MALFUNCTION (SECONDARY CUT VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

L: TROUBLE CODE 33 FL HOLD VALVE MALFUNCTION (FRONT LEFT INLET VALVE MALFUNCTION) S005504D02

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 62. <Ref. to VDC-144 TROUBLE CODE 62 NORMAL OPENING VALVE 1 MALFUNCTION (SECONDARY CUT VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

M: TROUBLE CODE 35 RR HOLD VALVE MALFUNCTION (REAR RIGHT INLET VALVE MALFUNCTION) 5005504D12

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 62. <Ref. to VDC-144 TROUBLE CODE 62 NORMAL OPENING VALVE 1 MALFUNCTION (SECONDARY CUT VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

N: TROUBLE CODE 37 RL HOLD VALVE MALFUNCTION (REAR LEFT INLET VALVE MALFUNCTION) S005504D21

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 62. <Ref. to VDC-144 TROUBLE CODE 62 NORMAL OPENING VALVE 1 MALFUNCTION (SECONDARY CUT VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

O: TROUBLE CODE 61 NORMAL OPENING VALVE 2 MALFUNCTION (PRIMARY CUT VALVE MALFUNCTION) 5005504D78

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 62. <Ref. to VDC-144 TROUBLE CODE 62 NORMAL OPENING VALVE 1 MALFUNCTION (SECONDARY CUT VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

P: TROUBLE CODE 62 NORMAL OPENING VALVE 1 MALFUNCTION (SECONDARY CUT VALVE MALFUNCTION) 5005504D80

DIAGNOSIS:

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

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:





B4M2320

VDC-145

🖙 00.5.31/68j/0vdc 🗊

No.	Step	Check	Yes	No
1	CHECK RESISTANCE OF SOLENOID VALVE.	Is the resistance between 8.04 and 9.04 Ω ?	Go to step 2.	Replace VDCH/U. <ref. th="" to="" vdc-13<=""></ref.>
	1) Turn ignition switch to OFF.			Hydraulic Control
	2) Disconnect two connectors (VDC1, F91)			Unit (H/U).>
	from VDCH/U.			
	3) Measure resistance between VDCH/U con-			
	Connector & terminal			
	Trouble code 31//VDC5) No. 5 —			
	(VDC2) No. 2			
	(VDC2) No. 2: (VDC2) No. 2:			
	Trouble code 35/(VDC5) No. 7 — (VDC2) No. 2:			
	Trouble code 37/(VDC5) No. 6 — (VDC2) No. 2:			
	Trouble code 61/(VDC5) No. 9 — (VDC2) No. 2:			
	Trouble code 62/(VDC5) No. 12 — (VDC2) No. 2:			
2	CHECK GROUND SHORT OF SOLENOID	Is the resistance more than 1 MΩ?	Go to step 3.	Replace VDCH/U.
	Measure resistance between VDCH/U con-			Hydraulic Control
	nector and chassis ground.			Unit (H/U).>
	Connector & terminal			
	Trouble code 31/(VDC5) No. 5 — Chas-			
	sis ground:			
	Trouble code 33/(VDC5) No. 8 — Chas-			
	sis ground:			
	in around:			
	Trouble code 37///DC5) No. 6 - Chas-			
	sis around:			
	Trouble code 61/(VDC5) No. 9 — Chas-			
	sis ground:			
	Trouble code 62/(VDC5) No. 12 —			
	Chassis ground:			
3	CHECK BATTERY SHORT OF SOLENOID VALVE.	Is the voltage less than 1 V?	Go to step 4.	Replace VDCH/U. <ref. th="" to="" vdc-13<=""></ref.>
	1) Disconnect connector from VDCCM.			Hydraulic Control
	2) Measure voltage between VDCH/U con-			Unit (H/U).>
	nector and chassis ground.			
	Connector & terminal			
	Irouble code 31/(VDC5) No. 5 (+) —			
	Chassis ground (-):			
	$\frac{1}{2} \frac{1}{2} \frac{1}$			
	Trouble code $35/(VDC5)$ No. 7 (+) —			
	Chassis ground (-):			
	Trouble code 37/(VDC5) No. 6 (+) —			
	Chassis ground (–):			
	Trouble code 61/(VDC5) No. 9 (+) —			
	Chassis ground (–):			
	Trouble code 62/(VDC5) No. 12 (+) —			
1	Chassis ground (–):			

No.	Step	Check	Yes	No
4	CHECK BATTERY SHORT OF SOLENOID	Is the voltage less than 1	Go to step 5.	Replace VDCH/U.
	VALVE.	V?		<ref. th="" to="" vdc-13<=""></ref.>
	1) Turn ignition switch to ON.			Hydraulic Control
	2) Measure voltage between VDCH/U con-			Unit (H/U).>
	nector and chassis ground.			
	Connector & terminal			
	Trouble code 31/(VDC5) No. 5 (+) —			
	Chassis ground (–):			
	Trouble code 33/(VDC5) No. 8 (+) —			
	Chassis ground (–):			
	Trouble code 35/(VDC5) No. 7 (+) —			
	Chassis ground (–):			
	Trouble code 3//(VDC5) No. 6 (+) —			
	Chassis ground (-):			
	$\frac{1}{2} \frac{1}{2} \frac{1}$			
	Trouble code 62/()/DCE) No. 12 (1)			
	Chassis ground $(-)$:			
5		le the voltage less than 1	Co to otop 6	Panair harnaaa
5	1) Turn ignition switch to OEE			hotwoon VDCCM
	2) Measure voltage between VDCCM connec-	V !		
	tor and chassis ground			
	Connector & terminal			
	Trouble code $31/(F87)$ No. $30(+)$ —			
	Chassis ground (–):			
	Trouble code 33/(F87) No. 24 (+) —			
	Chassis ground (–):			
	Trouble code 35/(F87) No. 23 (+) —			
	Chassis ground (–):			
	Trouble code 37/(F87) No. 31 (+) —			
	Chassis ground (–):			
	Trouble code 61/(F87) No. 25 (+) —			
	Chassis ground (–):			
	Trouble code 62/(F87) No. 26 (+) —			
	Chassis ground (–):			
6	CHECK BATTERY SHORT OF HARNESS.	Is the voltage less than 1	Go to step 7.	Repair harness
	1) Turn ignition switch to ON.	V?		between VDCCM
	2) Measure voltage between VDCCM connec-			and VDCH/U.
	tor and chassis ground.			
	Connector & terminal			
	$\frac{1}{1} \frac{1}{1} \frac{1}$			
	Trouble code $\frac{22}{587}$ No. $24 (\pm)$ —			
	Chassis around $(-)$:			
	Trouble code 35/(F87) No. 23 (+) —			
	Chassis ground (-):			
	Trouble code 37/(F87) No. 31 (+) —			
	Chassis ground (–):			
	Trouble code 61/(F87) No. 25 (+) —			
	Chassis ground (–):			
	Trouble code 62/(F87) No. 26 (+) —			
	Chassis ground (–):			

No.	Step	Check	Yes	No
7	CHECK GROUND SHORT OF HARNESS. 1) Turn ignition switch to OFF. 2) Measure resistance between VDCCM con- nector and chassis ground. Connector & terminal Trouble code 31/(F87) No. 30 — Chas- sis ground: Trouble code 33/(F87) No. 24 — Chas- sis ground: Trouble code 35/(F87) No. 23 — Chas- sis ground: Trouble code 37/(F87) No. 31 — Chas- sis ground: Trouble code 61/(F87) No. 25 — Chas- sis ground: Trouble code 62/(F87) No. 26 — Chas- sis ground:	Is the resistance more than 1 MΩ?	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 con- nector and VDCH/U connector. Connector & terminal Trouble code 31/(F87) No. 30 — (VDC2) No. 2: Trouble code 33/(F87) No. 24 — (VDC2) No. 2: Trouble code 35/(F87) No. 23 — (VDC2) No. 2: Trouble code 37/(F87) No. 31— (VDC2) No. 2: Trouble code 61/(F87) No. 25 — (VDC2) No. 2: Trouble code 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 CONNEC- TORS.	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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Repair VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 11.
11	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corresponding to the trouble code.	A temporary poor contact.

MEMO:

VDC-149

VDC (DIAGNOSTICS)

Q: TROUBLE CODE 32 FR PRESSURE REDUCING VALVE MALFUNCTION (FRONT RIGHT OUTLET VALVE MALFUNCTION) 5005504C98

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 64. <Ref. to VDC-150 TROUBLE CODE 64 NORMAL CLOSING VALVE 1 MALFUNCTION (SECONDARY SUCTION VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

R: TROUBLE CODE 34 FL PRESSURE REDUCING VALVE MALFUNCTION (FRONT LEFT OUTLET VALVE MALFUNCTION) 500504D07

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 64. <Ref. to VDC-150 TROUBLE CODE 64 NORMAL CLOSING VALVE 1 MALFUNCTION (SECONDARY SUCTION VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

S: TROUBLE CODE 36 RR PRESSURE REDUCING VALVE MALFUNCTION (REAR RIGHT OUTLET VALVE MALFUNCTION) S005504D16

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 64. <Ref. to VDC-150 TROUBLE CODE 64 NORMAL CLOSING VALVE 1 MALFUNCTION (SECONDARY SUCTION VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

T: TROUBLE CODE 38 RL PRESSURE REDUCING VALVE MALFUNCTION (REAR LEFT OUTLET VALVE MALFUNCTION) 5005504D25

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 64. <Ref. to VDC-150 TROUBLE CODE 64 NORMAL CLOSING VALVE 1 MALFUNCTION (SECONDARY SUCTION VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

U: TROUBLE CODE 63 NORMAL CLOSING VALVE 2 MALFUNCTION (PRIMARY SUCTION VALVE MALFUNCTION) S00504D82

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 64. <Ref. to VDC-150 TROUBLE CODE 64 NORMAL CLOSING VALVE 1 MALFUNCTION (SECONDARY SUCTION VALVE MALFUNCTION), Diagnostics Chart with Select Monitor.>

V: TROUBLE CODE 64 NORMAL CLOSING VALVE 1 MALFUNCTION (SECONDARY SUCTION VALVE MALFUNCTION) S005504D84

DIAGNOSIS:

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

TROUBLE SYMPTOM:

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

VDC-150

WIRING DIAGRAM:





B4M2320

VDC-151

VDC (DIAGNOSTICS)

No.	Step	Check	Yes	No
1	CHECK RESISTANCE OF SOLENOID	Is the resistance between	Go to step 2.	Replace VDCH/U.
	VALVE.	3.8 and 4.8 Ω?		<ref. th="" to="" vdc-13<=""></ref.>
	1) Turn ignition switch to OFF.			Hydraulic Control
	2) Disconnect two connectors (VDC1, F91)			Unit (H/U).>
	from VDCH/U.			
	3) Measure resistance between VDCH/U con-			
	nector terminals.			
	Connector & terminal			
	Trouble code 32/(VDC5) No. 1 —			
	(VDC2) No. 2:			
	Trouble code 34/(VDC5) No. 4 —			
	(VDC2) No. 2:			
	Trouble code 36/(VDC5) No. 3 —			
	(VDC2) No. 2:			
	Trouble code 38/(VDC5) No. 2 —			
	(VDC2) No. 2:			
	Trouble code 63/(VDC5) No. 10 —			
	(VDC2) No. 2:			
	Irouble code 64/(VDC5) No. 11 —			
	(VDC2) NO. 2:			
2	CHECK GROUND SHORT OF SOLENOID	Is the resistance more than	Go to step 3.	Replace VDCH/U.
	VALVE.	1 MΩ?		<ref. th="" to="" vdc-13<=""></ref.>
	Measure resistance between VDCH/U con-			Hydraulic Control
	nector and chassis ground.			Unit (H/U).>
	Connector & terminal			
	Trouble code 32/(VDC5) No. 1 — Chas-			
	sis ground:			
	rouble code 34/(VDC5) No. 4 — Chas-			
	Trouble code 26///DC5) No. 3 - Chas-			
	sis around:			
	Trouble code 38/(VDC5) No. 2 — Chas-			
	sis ground:			
	Trouble code 63/(VDC5) No. 10 —			
	Chassis ground:			
	Trouble code 64/(VDC5) No. 11 —			
	Chassis ground:			
3	CHECK BATTERY SHORT OF SOLENOID	Is the voltage less than 1	Go to step 4.	Replace VDCH/U.
	VALVE.	V?		<ref. th="" to="" vdc-13<=""></ref.>
	1) Disconnect connector from VDCCM.			Hydraulic Control
	2) Measure voltage between VDCH/U con-			Unit (H/U).>
	nector and chassis ground.			
	Connector & terminal			
	Trouble code 32/(VDC5) No. 1 (+) —			
	Chassis ground (–):			
	Trouble code 34/(VDC5) No. 4 (+) —			
	Chassis ground (–):			
	Trouble code 36/(VDC5) No. 3 (+) —			
	Chassis ground (–):			
	Trouble code 38/(VDC5) No. 2 (+) —			
	Chassis ground (–):			
	Trouble code 63/(VDC5) No. 10 (+) —			
	Chassis ground (–):			
	Irouble code 64/(VDC5) No. 11 (+) —			
	Chassis ground (–):			

No.	Step	Check	Yes	No
<u>No.</u>	StepCHECK BATTERY SHORT OF SOLENOIDVALVE.1) Turn ignition switch to ON.2) Measure voltage between VDCH/U connector and chassis ground.Connector & terminalTrouble code 32/(VDC5) No. 1 (+) —Chassis ground (-):Trouble code 34/(VDC5) No. 4 (+) —Chassis ground (-):Trouble code 36/(VDC5) No. 3 (+) —Chassis ground (-):Trouble code 38/(VDC5) No. 2 (+) —Chassis ground (-):Trouble code 63/(VDC5) No. 10 (+) —Chassis ground (-):Trouble code 63/(VDC5) No. 10 (+) —Chassis ground (-):Trouble code 64/(VDC5) No. 11 (+) —Chassis ground (-):Trouble code 64/(VDC5) No. 11 (+) —Chassis ground (-):	Check Is the voltage less than 1 V?	Yes Go to step 5.	No Replace VDCH/U. <ref. to="" vdc-13<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 Trouble code 32/(F87) No. 3 (+) — Chassis ground (–): Trouble code 34/(F87) No. 51 (+) — Chassis ground (–): Trouble code 36/(F87) No. 50 (+) — Chassis ground (–): Trouble code 38/(F87) No. 4 (+) — Chassis ground (–): Trouble code 63/(F87) No. 29 (+) — Chassis ground (–): Trouble code 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 Trouble code 32/(F87) No. 3 (+) — Chassis ground (–): Trouble code 34/(F87) No. 51 (+) — Chassis ground (–): Trouble code 36/(F87) No. 50 (+) — Chassis ground (–): Trouble code 38/(F87) No. 4 (+) — Chassis ground (–): Trouble code 63/(F87) No. 29 (+) — Chassis ground (–): Trouble code 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 con- nector and chassis ground. Connector & terminal Trouble code 32/(F87) No. 3 — Chassis ground: Trouble code 34/(F87) No. 51 — Chas- sis ground: Trouble code 36/(F87) No. 50 — Chas- sis ground: Trouble code 38/(F87) No. 4 — Chassis ground: Trouble code 63/(F87) No. 29 — Chas- sis ground: Trouble code 64/(F87) No. 2 — Chassis ground: Trouble code 64/(F87) No. 2 — Chassis ground:	Is the resistance more than 1 MΩ?	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 con- nector and VDCH/U connector. Connector & terminal Trouble code 32/(F87) No. 3 — (VDC2) No. 1: Trouble code 34/(F87) No. 51 — (VDC2) No. 1: Trouble code 36/(F87) No. 50 — (VDC2) No. 1: Trouble code 38/(F87) No. 4 — (VDC2) No. 1: Trouble code 63/(F87) No. 29 — (VDC2) No. 1: Trouble code 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 CONNEC- TORS.	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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 11.
11	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

MEMO:

VDC-155

W: TROUBLE CODE 41 ELECTRICAL CONTROL MODULE (VDC CONTROL MODULE MALFUNCTION) 5005504D32

DIAGNOSIS:

• Faulty VDCCM

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



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 CONNEC- TORS.	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 prop- erly 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 trouble code.	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 6 .
6	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

X: TROUBLE CODE 42 POWER SUPPLY VOLTAGE LOW S005504D34

DIAGNOSIS:

• Power source voltage of the VDCCM is low.

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



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 nega- tive 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 CONNEC- TORS.	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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 7 .
7	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

Y: TROUBLE CODE 43 AET COMMUNICATION LINE MALFUNCTION SOUSSALA

DIAGNOSIS:

• AET communication line is broken or short circuited.

TROUBLE SYMPTOM:

VDC does not operate.

WIRING DIAGRAM:



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 con-	Is the resistance less than 0.5 Ω ?	Go to step 2.	Repair harness/ connector between VDCCM and ECM.
	nector and ECM. <i>Terminal</i> (F87) No. 21 — (B135) No. 6:			
2	CHECK GROUND SHORT OF HARNESS. Measure resistance between VDCCM connec- tor and chassis ground. <i>Terminal</i> (F87) No. 21 — Chassis ground:	Is the resistance more than 1 MΩ?	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. <i>Terminal</i> (F87) No. 21 (+) — 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. 21 (+) — 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 connec- tor and chassis ground. Connector & terminal (F87) No. 21 (+) — Chassis ground (-):	Is the voltage between 10 and 15 V?	Go to step 6.	Go to step 9.
6	CHECK POOR CONTACT IN CONNEC- TORS.	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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 8.
8	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the 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 (B135) No. 12 (+) — 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 CONNEC- TORS.	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.
Z: TROUBLE CODE 43 AEB COMMUNICATION LINE MALFUNCTION SOUTHARD

DIAGNOSIS:

• AEB communication line is broken or short circuited.

TROUBLE SYMPTOM:

VDC does not operate.

WIRING DIAGRAM:



VDC-162

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 con- nector and ECM. Terminal (F87) No. 43 — (B135) No. 4:	Is the resistance less than 0.5 Ω?	Go to step 2.	Repair harness/ connector between VDCCM and ECM.
2	CHECK GROUND SHORT OF HARNESS. Measure resistance between VDCCM connec- tor and chassis ground. <i>Terminal</i> (F87) No. 43 — Chassis ground:	Is the resistance more than 1 MΩ?	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. <i>Terminal</i> (F87) No. 43 (+) — 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. 43 (+) — 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 connec- tor and chassis ground. Connector & terminal (F87) No. 43 (+) — Chassis ground (-):	Is the voltage between 10 and 15 V?	Go to step 6.	Go to step 9 .
6	CHECK POOR CONTACT IN CONNEC- TORS.	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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 8.
8	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the 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 (B135) No. 5 (+) — 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 CONNEC- TORS.	Is there poor contact in connector ECM?	Repair connector.	Go to step 11.
11		Is the engine functioning normally?	Replace ECM.	Repair engine.

AA: TROUBLE CODE 43 AEC COMMUNICATION LINE MALFUNCTION S005504D39

DIAGNOSIS:

• AEC communication line is broken or short circuited.

TROUBLE SYMPTOM:

VDC does not operate.

WIRING DIAGRAM:



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 con- nector and ECM. <i>Terminal</i> (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.
2	CHECK GROUND SHORT OF HARNESS. Measure resistance between VDCCM connec- tor and chassis ground. Terminal (F87) No. 8 — Chassis ground:	Is the resistance more than 1 MΩ?	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. <i>Terminal</i> (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 connec- tor 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 CONNEC- TORS.	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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 8.
8	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the 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 (B135) 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 CONNEC- TORS.	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: TROUBLE CODE 44 TCM COMMUNICATION CIRCUIT S005504D44

DIAGNOSIS:

Communication with AT control faults

TROUBLE SYMPTOM:

VDC does not operate.

WIRING DIAGRAM:



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 CONNEC- TORS.	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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace TCM. <ref. at-42<br="" to="">Transmission Control Module (TCM).></ref.>	Go to step 4.
4	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

AC: TROUBLE CODE 45 INCORRECT VDC CONTROL MODULE S00504D47

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 E1	Does the VDCCM identifi- cation mark agree with the vehicle specifications?	Go to step 2.	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>
2	CHECK TCM SPECIFICATIONS. Check the TCM identification mark. TCM identification mark XD	Does the TCM identification mark agree with the vehicle specifications?	Go to step 3.	Replace TCM. <ref. at-42<br="" to="">Transmission Control Module (TCM).></ref.>
3	 CHECK TCM. 1) Replace TCM. <ref. at-42="" to="" transmission<br="">Control Module (TCM).></ref.> 2) Erase the memory. 3) Perform inspection mode. 4) Read out the trouble code. 	Is the same 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 trouble code as in the current diagnosis still being output?	Go to step 5 .	Proceed with the diagnosis corre- sponding to the trouble code.
5	 CHECK VDCCM. 1) Install original TCM. 2) Replace VDCCM. <ref. li="" to="" vdc-10="" vdc<=""> Control Module (VDCCM).> 3) Erase the memory. 4) Perform inspection mode. 5) Read out the trouble code. </ref.>	Is the same 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 trouble code as in the current diagnosis still being output?	Replace TCM. <ref. at-42<br="" to="">Transmission Control Module (TCM).></ref.>	Proceed with the diagnosis corre- sponding to the trouble code.

AD: TROUBLE CODE 45 TCM MALFUNCTION SPECIFICATIONS S005504D49

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 trouble code	Repair AT system.	Replace VDCCM.
	1) Start the engine.	stored in memory?		
	2) Check AT system trouble code.			

AE: TROUBLE CODE 46 ABNORMAL VOLTAGE OF 5 V POWER SUPPLY SOUTHABLE SOUTHABLE

DIAGNOSIS:

• 5 volt power supply is abnormal.

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



B4M2325

VDC-170

No.	Step	Check	Yes	No
1		Is the resistance more than	Go to step 3	Go to step 2
l.	AND HARNESS.	$1 M\Omega^2$		00 to step 2.
	1) Turn ignition switch OFF.			
	2) Disconnect connector from VDCCM.			
	3) Measure resistance between VDCCM con-			
	nector and chassis ground.			
	Connector & terminal			
	(F87) No. 63 — Chassis ground (Lat-			
	eral G sensor):			
	(F87) No. 78 — Chassis ground (Pres-			
	sure sensor):			
2	CHECK GROUND SHORT OF HARNESS.	Is the resistance more than	Replace faulty	Repair or replace
	1) Disconnect connector from faulty sensors.	1 ΜΩ?	sensors.	harness connector
	2) Measure resistance between VDCCM and			between VDCCM
	Connector & terminal			and faulty sensor.
	(E97) No. 62 Chassis ground (Lat			
	aral G sensor):			
	(F87) No 78 — Chassis ground (Pres-			
	sure sensor):			
3	CHECK BATTERY SHORT OF SENSOR	Is the voltage less than 0.5	Go to step 4.	Go to step 5.
	AND HARNESS.	V?		
	Measure voltage between VDCCM and chas-			
	sis ground.			
	Connector & terminal			
	(F87) No. 63 (+) — Chassis ground (–)			
	(Lateral G sensor):			
	(F87) No. 78 $(+)$ — Chassis ground $(-)$			
	CHECK BATTERY SHORT OF SENSOR	Is the voltage loss than 0.5		Co to stop 5
17	AND HARNESS.			Go to step J .
	1) Turn ignition switch to ON.			
	2) Measure voltage between VDCCM connec-			
	tor and chassis ground.			
	Connector & terminal			
	(F87) No. 63 (+) — Chassis ground (–)			
	(Lateral G sensor):			
	(F87) No. 78 (+) — Chassis ground (–)			
-	(Pressure sensor):			
5	CHECK BATTERY SHORT OF HARNESS.	Is the voltage less than 0.5	Go to step 6 .	Repair or replace
	2) Disconnect connector from faulty sensors	V		hamess connector
	3) Measure voltage between VDCCM and			and faulty sensor
	chassis ground.			
	Connector & terminal			
	(F87) No. 63 (+) — Chassis ground (–)			
	(Lateral G sensor):			
	(F87) No. 78 (+) — Chassis ground (–)			
	(Pressure sensor):			
6	CHECK BATTERY SHORT OF HARNESS.	Is the voltage less than 0.5	Replace faulty	Repair or replace
	1) Turn ignition switch to ON.	V?	sensor.	narness connector
	2) Measure voltage between VDCCM and			between VDCCM
	Connector & terminal			and lauly sensor.
	(F87) No. 63 (+) — Chassis around (-)			
	(Lateral G sensor):			
	(F87) No. 78 (+) — Chassis ground (–)			
	(Pressure sensor):			

AF: TROUBLE CODE 47 IMPROPER CAN COMMUNICATION S005504D53

DIAGNOSIS:

• CAN communication line is broken or short circuited.

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



No.	Step	Check	Yes	No
1		Is the resistance less than	Go to step 3	Go to step 2
l.	STEERING ANGLE SENSOR AND TCM	$0.5 \Omega^2$		
	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 ICM.	0.5 \2?	harness connector	harness connector
	ing angle sensor		and steering	steering angle
	Connector & terminal		and scennig	sensor
	(B56) No. 9 - (B231) No. 2			3611301.
	(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	$1 M\Omega$?		harness connector
	chassis ground.			between VDCCM,
	Connector & terminal			TCM and steering
	(F87) No. 83 — Chassis ground:			angle sensor.
	(F87) No. 81 — Chassis ground:			
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 BAITERY 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
	chassis ground			TCM and steering
	Connector & terminal			andle sensor
	(F87) No. 83 — Chassis ground:			
	(F87) No. 81 — Chassis ground:			
6	CHECK STEERING ANGLE SENSOR.	Is the resistance 120+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			
L	(F87) No. 83 — No. 81:			
7	CHECK POOR CONTACT IN CONNEC-	Is there poor contact in	Replace steering	Repair or replace
	TORS.	steering angle sensor?	angle sensor.	steering angle
<u> </u>				sensor connector.
8		Is the resistance $120\pm6 \Omega$?	Go to step 10.	Go to step 9.
	Connect connector to VDCCM. Disconnect connector from starting or starting			
	2) Disconnect connector from steering angle			
	3) Massura resistance between steering angle			
	sensor connector terminals			
	Connector & terminal			
	(B231) No. 1 — No. 2:			
		1	1	

No.	Step	Check	Yes	No
9	CHECK POOR CONTACT IN CONNEC- TORS.	Is there poor contact in steering angle sensor?	Replace VDCCM.	Repair or replace VDCCM connec- tor.
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 MΩ?	Go to step 12 .	Go to step 11.
11	CHECK POOR CONTACT IN CONNEC- TORS.	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 trouble code. 	Are other trouble codes being output?	Go to step 13.	A temporary poor contact.
13	CHECK TROUBLE CODE.	Is the same trouble code as in the current diagnosis still being output?	Go to step 14.	Proceed with the diagnosis corre- sponding to the trouble code.
14	CHECK AT SYSTEM TROUBLE CODE.	Is the AT system trouble code No. 86?	Replace steering angle sensor.	Replace VDCCM.

VDC-174

MEMO:

VDC-175

AG: TROUBLE CODE 48 IMPROPER EAC COMMUNICATION SOUTHAND

DIAGNOSIS:

• EAC communication line is broken or short circuited.

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



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 MΩ?	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 (B137) 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 CON- NECTORS.	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 TROUBLE CODE.1) Perform inspection mode.2) Read out the trouble code.	Is the same trouble code as in the current diagnosis still being output?	Replace ECM.	A temporary poor contact.

AH: TROUBLE CODE 48 EAS COMMUNICATION LINE GROUNDING SHORTED 5005504/D54

DIAGNOSIS:

• EAS communication line is short circuited.

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



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 MΩ?	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 (B137) 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 CON- NECTORS.	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 TROUBLE CODE.1) Perform inspection mode.2) Read out the trouble code.	Is the same trouble code as in the current diagnosis still being output?	Replace ECM.	A temporary poor contact.

VDC-179

AI: TROUBLE CODE 48 ERRONEOUS COMMUNICATION FROM EGI TO VDC

S005504D55

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.

WIRING DIAGRAM:



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 (B137) No. 11 (+) — Chassis ground (-): (B137) 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 CON- NECTORS.	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 TROUBLE CODE. 1) Perform inspection mode. 2) Read out the trouble code.	Is the same trouble code as in the current diagnosis still being output?	Replace ECM.	A temporary poor contact.

AJ: TROUBLE CODE 49 ABNORMAL ENGINE SPEED SIGNAL SOUTHABLE SOUTHAB

DIAGNOSIS:

• Engine speed signal line is broken or short circuited.

TROUBLE SYMPTOM:

VDC does not operate.

WIRING DIAGRAM:



No.	Step	Check	Yes	No
1	CHECK TACHOMETER OPERATION IN COMBINATION METER.	Does tachometer operate normally?	Go to step 2.	Repair tachom- eter.
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 con- nector and ECM. Connector & terminal (F87) No. 9 — (B137) 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 CONNEC- TORS.	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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 5.
5	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

VDC-183

AK: TROUBLE CODE 51 VALVE RELAY SOUSSOULDEZ

DIAGNOSIS:

Faulty valve relay

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



B4M2328

VDC-184

	•	a t 1		
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 relav			
	terminals.			
	Terminals			
	No. 30 — No. 87:			
3	CHECK CONTACT POINT OF VALVE	Is the resistance more than	Go to step 4.	Replace valve
ľ	RELAY	1 MO?		relav
	Measure resistance between valve relay ter-			lolay
	minals			
	Terminals			
	No $30 - No 87a$			
4		le the resistance more then	Go to stop F	Penlaco volvo
4		1 MO2		
	1) Disconnect bettery from value relev termi	1 10122 !		Telay.
	T) Disconnect battery from valve relay termi-			
	nais.			
	2) Measure resistance between valve relay			
			O a la alar O	Dealers webs
5		Is the resistance less than	Go to step b .	Replace valve
	RELAY.	0.5 \Q?		relay.
	Measure resistance between valve relay ter-			
	minais.			
	Terminais			
	NO. 30 — NO. 87a:		A	
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.			
	Ierminals			
	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.	and 15 V?		between battery
	1) Disconnect connector (F89) from relay box.			and relay box
	2) Turn ignition switch to ON.			connector. Check
	3) Measure voltage between relay box con-			tuse No. 8.
	nector and chassis ground.			
	Connector & terminal			
L	(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:			

VDC (DIAGNOSTICS)

No.	Sten	Check	Yes	No
9		Is the resistance less than	Go to step 10	Replace relay
ľ	CUIT OF RELAY BOX.	0.5Ω ?		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			
	(VDC4) No. 1 — Valve relay installing			
	point No. 86:			
10	CHECK GROUND SHORT IN CONTACT	Is the resistance more than	Go to step 11.	Replace relav box
	POINT CIRCUIT OF RELAY BOX.	1 MΩ?		and check fuse
	Measure resistance between relay box con-			SBF6.
	nector and chassis ground.			
	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
	1) Turn ignition quitab to OEE	0.5 \Q?		between VDCCIVI
	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 MΩ?		between VDCCM
	Measure resistance between VDCCM connec-			and relay box.
	Connector & terminal			
	(F87) No. 47 — Chassis ground:			
	(F87) No. 27 — Chassis ground:			
13	CHECK OPEN CIRCUIT IN CONTACT	Is the resistance less than	Go to step 14.	Replace relay
	POINT CIRCUIT OF RELAY BOX.	0.5 Ω?		box.
	Measure resistance between VDCH/U con-			
	nector and valve relay installing point.			
	Connector & terminal			
	(VDC1) No. 2 — Valve relay installing			
14		Is the resistance more than	Go to stop 15	Poplace relay box
14		1 MO2		and check fuse
	Measure resistance between VDCH/U con-	1 10122 :		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?		
	Disconnect connector from VDCH/U. Disconnect resistance between VDCH/U con-			
	nector terminals			
	Connector & terminal			
	(VDC5) No. 8 — (VDC2) No. 2:			
	(VDC5) No. 5 — (VDC2) No. 2:			
	(VDC5) No. 6 — (VDC2) No. 2:			
	(VDC5) No. 7 — (VDC2) No. 2:			
	(VDC5) No. 9 — (VDC2) No. 2:			
1	(VDC5) NO. 12 — (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		In the registered more then	Co to otop 19	Paplaga V/DCU/U
''	VALVE	1 MO2		and check all
	Measure resistance between VDCH/U con-			fuses.
	nector and chassis ground.			
	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 MΩ?		between VDCH/U
	2) Measure resistance between VDCCM con-			and VDCCM.
	nector and chassis ground.			
	Connector & terminal			
	(F87) No. 30 — Chassis ground:			
	(F67) No. 24 — Chassis ground:			
	(F87) No. 23 — 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		Is the resistance between	Go to step 20.	Repair harness/
	1) Connect connector (E91) to VDCH/U	8.0 and 10.0 \$2?		botween VDCH/U
	2) Measure resistance between VDCCM con-			and VDCCM
	nector and VDCH/U			
	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:			
	(F67) NO. 25 – $(VDC2)$ NO. 2:		Calta atam 24	Denein hemesee/
20		is the resistance between	Go to step 21.	Repair namess/
	Measure resistance between VDCCM connec-	4.0 and 0.0 22?		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		
		VDCCW and VDCH/U?		

No.	Step	Check	Yes	No
22	 CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM.	Go to step 23.
23	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

VDC-188

MEMO:

VDC-189

AL: TROUBLE CODE 51 VALVE RELAY ON FAILURE SOUSSOUDES

DIAGNOSIS:

• Faulty valve relay

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



B4M2328

VDC-190

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 ter- minals. <i>Terminals</i> <i>No. 30 — No. 87a:</i>	Is the resistance more than 1 MΩ?	Go to step 3.	Replace valve relay.
3	CHECK CONTACT POINT OF VALVE RELAY. 1) Disconnect battery from valve relay termi- nals. 2) Measure resistance between valve relay terminals. <i>Terminals</i> <i>No. 30 — No. 87:</i>	Is the resistance more than 1 MΩ?	Go to step 4.	Replace valve relay.
4	CHECK CONTACT POINT OF VALVE RELAY. Measure resistance between valve relay ter- minals. <i>Terminals</i> <i>No. 30 — No. 87a:</i>	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 ter- minals. <i>Terminals</i> <i>No. 86 — No. 87:</i> <i>No. 86 — No. 87a</i> :	Is the resistance more than 1 MΩ?	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 con- nector 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 con- nector 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
8	CHECK BATTERY SHORT IN CONTROL	Is the voltage less than 1	Go to step 9.	Repair harness
	SYSTEM HARNESS OF VALVE RELAY.	V?		between VDCCM
	1) Turn ignition switch to OFF.			and relay box and
	2) Disconnect connector from VDCCM.			check all fuses.
	3) Disconnect connector from VDCH/U.			
	4) Measure voltage between VDCCM connec-			
	tor and chassis ground.			
	Connector & terminal			
	(F87) No. 27 (+) — Chassis ground (–):			
	(F87) No. 47 (+) — Chassis ground (–):			
9	CHECK BATTERY SHORT IN CONTROL	Is the voltage less than 1	Go to step 10.	Repair harness
	SYSTEM HARNESS OF VALVE RELAY.	V?		between VDCCM
	1) Turn ignition switch to ON.			and relay box and
	2) Measure voltage between VDCCM connec-			check all fuses.
	tor and chassis ground.			
	Connector & terminal			
	(F87) No. 27 (+) — Chassis ground (–):			
	(F87) No. 47 (+) — Chassis ground (–):			
10	CHECK BATTERY SHORT IN CONTACT	Is the voltage less than 1	Go to step 11.	Replace relay
	POINT CIRCUIT OF RELAY BOX.	V?		box.
	1) Disconnect connector VDC1 from relay			
	box.			
	2) Measure voltage between VDCH/U con-			
	nector and chassis ground.			
	Connector & terminal			
	(VDC1) No. 2 (+) — Chassis ground			
	(–):			
11	CHECK BATTERY SHORT IN CONTACT	Is the voltage less than 1	Go to step 12.	Replace relay
	POINT CIRCUIT OF RELAY BOX.	V?		box.
	1) Turn ignition switch to ON.			
	2) Measure voltage between VDCH/U con-			
	nector and chassis ground.			
	Connector & terminal			
	(VDC1) No. 2 (+) — Chassis ground			
	(–):			
12	CHECK BATTERY SHORT OF SOLENOID	Is the voltage less than 1	Go to step 13.	Replace VDCH/U
	VALVE.	V?		and check all
	1) Turn ignition switch to OFF.			fuses.
	2) Measure voltage between VDCH/U con-			
	nector and chassis ground.			
	Connector & terminal			
	(VDC2) No. 2 (+) — Chassis ground			
	(-):			
13	CHECK BATTERY SHORT OF SOLENOID	Is the voltage less than 1	Go to step 14.	Replace VDCH/U
	VALVE.	V?		and check all
	1) Turn ignition switch to ON.			fuses.
	2) Measure voltage between VDCH/U con-			
	nector and chassis ground.			
	Connector & terminal			
	(VDC2) No. 2 (+) — Chassis ground			
	(-):			

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. 23 (+) — 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. 50 (+) — Chassis ground (-): (F87) No. 4 (+) — Chassis ground (-): (F87) No. 2	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. 25 (+) — Chassis ground (-): (F87) No. 51 (+) — Chassis ground (-): (F87) No. 50 (+) — Chassis ground (-): (F87) No. 50 (+) — Chassis ground (-): (F87) No. 50 (+) — Chassis ground (-): (F87) No. 2	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 CONNEC- TORS. 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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM.	Go to step 18.
18	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

VDC-193

AM: TROUBLE CODE 52 MOTOR AND MOTOR RELAY OFF FAILURE SOUTH AND SO

DIAGNOSIS:

- Faulty motor relay
- Faulty harness connector

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



B4M2329

VDC-195

VDC (DIAGNOSTICS)

No.	Step	Check	Yes	No
1	CHECK CONTACT POINT OF MOTOR	Is the resistance more than	Go to step 2.	Replace motor
	1) Turn ignition switch to OFF.	1 10122 :		l'elay.
	2) Remove motor relay from relay box.			
	3) 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 ter-	1 MΩ?		relay.
	minals.			
	Ierminals No. 95 No. 20:			
	No. $85 - No. 87$			
2		Is the resistance more than	Co to stop 4	Poplaco rolav
3	RELAY BOX	1 MO2		hox
	1) Disconnect connector (E90) from relay box.	1 10122.		50.
	2) 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.	V?		box.
	Measure voltage between relay box connector			
	and chassis ground.			
	(VDC4) No. 6 (+) — Chassis around			
	(-):			
5	CHECK BATTERY SHORT IN CIRCUIT OF	Is the voltage less than 1	Go to step 6.	Replace relay
	RELAY BOX.	V?		box.
	1) Turn ignition switch to ON.			
	2) Measure voltage between relay box con-			
	nector and chassis ground.			
	Connector & terminal $(VDC4)$ No. 6 (+) — Chassis around			
	(VDC4) No. $O(4)$ — 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 MΩ?		between VDCCM
	1) Turn ignition switch to OFF.			and relay box.
	2) Disconnect connector from VDCCM.			Check fuse SBF
	3) Measure resistance between VDCCM con-			holder.
	nector and chassis ground.			
	Connector & terminal			
7	CHECK BATTERY SHORT IN HARNESS	Is the voltage loss than 1	Co to stop 9	Popair barpass
1	BETWEEN RELAY BOX AND VDCCM			
	Measure voltage between VDCCM connector			and relay box
	and chassis ground.			
	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 connec-			
	tor and chassis ground.			
	(ror) No. 10 (+) — Chassis ground (-):			

No.	Step	Check	Yes	No
9	CHECK POOR CONTACT IN CONNEC- TORS. 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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM.	Go to step 11.
11	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.
AN: TROUBLE CODE 52 MOTOR AND MOTOR RELAY ON FAILURE S00504D67

DIAGNOSIS:

- Faulty motor relay
- Faulty harness connector

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



B4M2329

VDC-199

VDC (DIAGNOSTICS)

No	Ston	Check	Vos	No
1			Co to otop 2	NU Doplogo motor
'	1) Turn ignition switch to OFF	70 and 90 O2		relav
	2) Remove motor relay from relay box.			l'cidy.
	3) Measure resistance between motor relay			
	terminals.			
	Terminals			
	No. 85 — No. 86:			
2	CHECK CONTACT POINT OF MOTOR	Is the resistance less than	Go to step 3.	Replace motor
	RELAY.	0.5 Ω?		relay.
	1) Connect battery to motor relay terminals			
	No. 85 and No. 86.			
	2) Measure resistance between motor relay			
	ierminais			
		In the registeries mare then	Co to stop 4	Doplage motor
l 3	Measure resistance between motor relay ter-	1 MO2		relav
	minals	1 10152 :		Telay.
	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,
	4) Measure voltage between relay box con-			and check fuse
	nector and chassis ground.			SBF holder.
	Connector & terminal			
5	(F69) No. 2 (+) — Chassis ground (-):	In the voltage between 10	Co to stop 6	Doplage relay
5		and 15 V/2		hox
	1) Turn ignition switch to OFF			DOX.
	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		Is the resistance less than	Go to step 7.	Replace relay
	1) Turn ignition owitch to OFF	0.5 \2?		DOX.
	2) Disconnect connectors (VDC2_E90) from			
	relav box.			
	3) Measure resistance between relay box			
	connector unit and motor relay installing por-			
	tion.			
	Connector & terminal			
	(VDC1) No. 1 — Motor relay installing			
<u> </u>	portion No. 30:			
7	CHECK OPEN CIRCUIT IN MONITOR SYS-	Is the resistance less than	Go to step 8.	Replace relay
	I ENI CIRCUIT OF RELAY BOX.	0.5 \22?		DOX.
	Interstitie resistance between relay box con-			
	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 CIR- CUIT 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 con- nector and chassis ground. Connector & terminal (VDC4) No. 4 — Chassis ground: (VDC4) No. 6 — Chassis ground:	Is the resistance more than 1 MΩ?	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 con- nector 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 CON- TROL SYSTEM HARNESS. Measure resistance between VDCCM connec- tor 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 connec- tor and chassis ground. Connector & terminal (F87) No. 22 — Chassis ground: (F87) No. 10 — Chassis ground:	Is the resistance more than 1 MΩ?	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 connec- tor 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 CONNEC- TORS. 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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM.	Go to step 19 .
19	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

MEMO:

VDC-203

VDC (DIAGNOSTICS)

AO: TROUBLE CODE 52 MOTOR MALFUNCTION SOUTCOME

DIAGNOSIS:

- Faulty motor
- Faulty motor relay
- Faulty harness connector

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



B4M2329

VDC-205

🖙 00.5.31/68j/0vdc 🗊

No.	Step	Check	Yes	No
1	CHECK CONTACT POINT OF MOTOR RELAY. 1) Turn ignition switch to OFF. 2) Remove motor relay from relay box. 3) Connect battery to motor relay terminals No. 85 and No. 86. 4) Measure resistance between motor relay terminals. Terminals No. 30 — No. 87:	Is the resistance less than 0.5 Ω?	Go to step 2.	Replace motor relay.
2	CHECK CONTACT POINT OF MOTOR RELAY. 1) Disconnect battery from motor relay termi- nals. 2) Measure resistance between motor relay terminals. <i>Terminals</i> <i>No. 30 — No. 87:</i>	Is the resistance more than 1 MΩ?	Go to step 3.	Replace motor relay.
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 termi- nal 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. to<br="">VDC-17 VDCCM Connector Cover.> 3) Connect all connectors. 4) Install motor relay. 5) Operate the ABS check sequence. <ref. to<br="">VDC-18 ABS Sequence Control.> 6) Measure voltage between VDCCM connec- tor 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. to<br="">VDC-21 VDC Sequence Control.></ref.>	Can motor revolution noise (buzz) be heard when car- rying out the check sequence?	Go to step 8.	Replace VDCH/U.
8	CHECK POOR CONTACT IN CONNEC- TORS. 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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM.	Go to step 10.
10	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

VDC-207

AP: TROUBLE CODE 71 STEERING ANGLE SENSOR OFFSET IS TOO BIG.

S005504D93

DIAGNOSIS:

Faulty steering angle sensor

TROUBLE SYMPTOM:

• VDC does not operate.

WIRING DIAGRAM:



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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 3.
3	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

VDC-209

AQ: TROUBLE CODE 71 CHANGE RANGE OF STEERING ANGLE SENSOR IS TOO BIG. 500504D89

DIAGNOSIS:

• Faulty steering angle sensor

TROUBLE SYMPTOM:

• VDC does not operate.

WIRING DIAGRAM:



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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 2.
2	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

VDC-211

AR: TROUBLE CODE 71 STEERING ANGLE SENSOR MALFUNCTION S005504D92

DIAGNOSIS:

Faulty steering angle sensor

TROUBLE SYMPTOM:

VDC does not operate.

WIRING DIAGRAM:



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 dis- play 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 sur- faces) sometimes results in a VDCCM memory 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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 5.
5	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

AS: TROUBLE CODE 71 NO SIGNAL FROM STEERING ANGLE SENSOR S005504D90

DIAGNOSIS:

• Faulty steering angle sensor

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



VDC-214

No.	Sten	Check	Yes	No
1		Is the voltage between 10	Go to step 4	Go to step 2
l'	ANGLE SENSOR.	and 15 V?		00 to step 2.
	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.			
	Connector & terminal			
	(B231) No. 4 — Chassis ground:			
2		Is the voltage between 10	Repair harness	Go to step 3.
	1) Turn Ignition switch to OFF.	and 15 V?	between yaw rate	
	2) Disconnect connector from vDCCW.			
	-Ref. to VDC-21 VDC Sequence Control >			
	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:			
3	CHECK POOR CONTACT IN CONNEC-	Is there poor contact in	Repair or replace	Replace VDCCM.
	TORS.	yaw rate sensor connector?	VDCCM connec-	
			tor.	
4	CHECK GROUND CIRCUIT OF STEERING	Is the resistance less than	Go to step 5.	Repair steering
	ANGLE SENSOR.	0.5 Ω?		angle sensor
	Measure resistance between steering sensor			ground harness.
	and chassis ground.			
	(P221) No. 2 Chassis ground:			
5	CHECK HADNESS OF STEEDING ANGLE	Is the resistance 120+6 O2	Popoir bornoss	Co to stop 6
1	SENSOR		hetween steering	
	1) Connect connector to steering angle sen-		angle sensor and	
	sor.		VDCCM.	
	2) Disconnect connector from VDCCM.			
	3) Measure resistance between VDCCM con-			
	nector terminals.			
	Connector & terminal			
	(F87) No. 81 — No. 83:			
6	CHECK STEERING ANGLE SENSOR.	Is the same trouble code	Go to step 8.	Go to step 7.
	1) Turn ignition switch to OFF.	as in the current diagnosis		
	2) Connect all connectors.	still being output?		
	(1) Perform inspection mode			
	5) Read out the trouble code			
7	CHECK ANY OTHER TROUBLE CODES	Are other trouble codes	Proceed with the	A temporary poor
l'	APPEARANCE.	being output?	diagnosis corre-	contact.
			sponding to the	
			trouble code.	
8	CHECK VDCCM.	Is the same trouble code	Replace VDCCM.	Go to step 9.
	1) Turn ignition switch to OFF.	as in the current diagnosis	<ref. th="" to="" vdc-10<=""><th></th></ref.>	
	2) Replace steering angle sensor.	still being output?	VDC Control Mod-	
	3) Erase the memory.		ule (VDCCM).>	
	4) Perform inspection mode.			
	5) Read out the trouble code.			
9	CHECK ANY OTHER TROUBLE CODES	Are other trouble codes	Proceed with the	The original steer-
	APPEARANCE.	being output?	diagnosis corre-	ing angle sensor
			sponding to the	has been faulty.
			trouble code.	

AT: TROUBLE CODE 72 ABNORMAL YAW RATE SENSOR OUTPUT SOUSSOURDES

DIAGNOSIS:

Faulty yaw rate sensor

TROUBLE SYMPTOM:

VDC does not operate.

WIRING DIAGRAM:



 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
 55
 55
 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

B4M2330

VDC-216

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 sur- faces) sometimes results in a VDCCM memory 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<br="">VDC-24 Yaw Rate and Lateral G Sensor.></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 sen- sor output on monitor dis- play 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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Go to step 6 .	Go to step 7 .
6	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the 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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 8.
8	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	The original yaw rate and lateral G sensor has been faulty.

AU: TROUBLE CODE 72 VOLTAGE INPUTTED TO YAW RATE SENSOR EXCEEDS SPECIFICATION. S00504D99

DIAGNOSIS:

• Faulty yaw rate sensor

TROUBLE SYMPTOM:

• VDC does not operate.

WIRING DIAGRAM:



B4M2330

VDC-219

No.	Step	Check	Yes	No
1	CHECK POWER SUPPLY OF YAW RATE AND LATERAL G SENSOR.	Is the voltage between 10 and 15 V?	Go to step 4.	Go to step 2.
	 2) Disconnect connector from yaw rate and bisconnect connector from yaw rate and 			
	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:	In the welfer we had use an 40	Densishermen	0
2	1) Turn ignition switch to OFF	Is the voltage between 10	Repair harness	Go to step 3.
	2) Disconnect connector from VDCCM		and lateral G sen-	
	3) Remove cover for VDCCM connector.		sor and VDCCM.	
	<ref. connector="" cover.="" to="" vdc-17="" vdccm=""></ref.>			
	4) Connect connector to VDCCM.			
	5) Turn ignition switch to ON.			
	6) Measure voltage between VDCCM and			
	Connector & terminal			
	(F87) No. 63 — Chassis ground:			
3	CHECK POOR CONTACT IN CONNEC-	Is there poor contact in	Repair or replace	Replace VDCCM.
	TORS.	yaw rate and lateral G sen-	VDCCM connec-	
		sor connector?	tor.	
4	CHECK HARNESS OF YAW RATE AND	Is the resistance less than	Go to step 5.	Repair harness
		0.5 Ω?		between yaw rate
	1) Turn ignition switch OFF.			and lateral G sen-
	3) Measure resistance between VDCCM and			
	vaw rate and lateral G sensor.			
	Connector & terminal			
	(F87) No. 65 — (R100) No. 4:			
5	CHECK GROUND SHORT OF HARNESS.	Is the resistance more than	Go to step 6.	Repair harness
	Measure resistance between VDCCM and	1 MΩ?		between yaw rate
	chassis ground.			and lateral G sen-
	(F87) No. 65 — Chassis ground:			
6	CHECK BATTERY SHORT OF HARNESS	Is the voltage less than 0.5	Go to step 7	Renair harness
ľ	Measure voltage between VDCCM and chas-	V?		between vaw rate
	sis ground.			and lateral G sen-
	Connector & terminal			sor and VDCCM.
	(F87) No. 65 (+) — Chassis ground (–):			
7	CHECK BATTERY SHORT OF HARNESS.	Is the voltage less than 0.5	Replace yaw rate	Repair harness
	1) Turn ignition switch to ON.	V?	and lateral G sen-	between yaw rate
	2) Measure voltage between VDCCM and		sor. <ref. th="" to<=""><th>and lateral G sen-</th></ref.>	and lateral G sen-
	cnassis ground.		vDC-24 Yaw Rate	sor and VDCCM.
	(F87) No. 65 (+) — Chassis ground (–):		Sensor.>	

MEMO:

VDC-221

AV: TROUBLE CODE 72 ABNORMAL YAW RATE SENSOR REFERENCE VOLTAGE 5005504096

DIAGNOSIS:

• Faulty yaw rate sensor

TROUBLE SYMPTOM:

• VDC does not operate.

WIRING DIAGRAM:



B4M2330

VDC-223

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=""></ref.> 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: 	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 CONNEC- TORS.	Is there poor contact in yaw rate and lateral G sensor connector?	Repair or replace VDCCM connec- tor.	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 MΩ?	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 chas- sis 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=""></ref.> 4) Connect all connectors. 5) Turn ignition switch to ON. 6) Measure voltage between VDCCM connector terminals. Connector & terminal (F87) No. 66 (+) — No. 64 (-): 	Is the voltage between 2.1 and 2.9 V?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Replace yaw rate and lateral G sen- sor. <ref. to<br="">VDC-24 Yaw Rate and Lateral G Sensor.></ref.>

MEMO:

VDC-225

AW: TROUBLE CODE 72 CHANGE RANGE OF YAW RATE SENSOR SIGNAL IS TOO BIG. 5005504D97

DIAGNOSIS:

• Faulty yaw rate sensor

TROUBLE SYMPTOM:

• VDC does not operate.

WIRING DIAGRAM:



B4M2330

VDC-227

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 some- times records 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 sen- sor 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=""></ref.> 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: 	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 CONNEC- TORS.	Is there poor contact in yaw rate and lateral G sen- sor connector?	Repair or replace VDCCM connec- tor.	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=""></ref.> 3) Connect connector to VDCCM. 4) Measure resistance between VDCCM and chassis ground. Connector & terminal (F87) No. 64 — Chassis ground: 	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 CONNEC- TORS.	Is there poor contact in VDCCM connector?	Repair or replace VDCCM connec- tor.	Replace VDCCM.

No.	Step	Check	Yes	No
9	CHECK HARNESS OF YAW RATE SEN- SOR. 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 MΩ?	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 chas- sis 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 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-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Replace yaw rate and lateral G sen- sor. <ref. to<br="">VDC-24 Yaw Rate and Lateral G Sensor.></ref.>

AX: TROUBLE CODE 73 LATERAL G SENSOR OFFSET IS TOO BIG. SOUSSAGE

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 73. <Ref. VDC-230 TROUBLE CODE 73 EXCESSIVE LATERAL G SENSOR SIGNAL, Diagnostics Chart with Select Monitor.>

AY: TROUBLE CODE 73 ABNORMAL LATERAL G SENSOR OUTPUT SOUTPUT

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 73. <Ref. VDC-230 TROUBLE CODE 73 EXCESSIVE LATERAL G SENSOR SIGNAL, Diagnostics Chart with Select Monitor.>

AZ: TROUBLE CODE 73 CHANGE RANGE OF LATERAL G SENSOR IS TOO

BIG. S005504E02

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 73. <Ref. VDC-230 TROUBLE CODE 73 EXCESSIVE LATERAL G SENSOR SIGNAL, Diagnostics Chart with Select Monitor.>

BA: TROUBLE CODE 73 EXCESSIVE LATERAL G SENSOR SIGNAL SOUTHARD

DIAGNOSIS:

• Faulty lateral G sensor

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



B4M2330

VDC-231

No	Sten	Check	Ves	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<br="">VDC-24 Yaw Rate and Lateral G Sensor.></ref.>
3	CHECK POOR CONTACT IN CONNEC- TORS. 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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 5.
5	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

MEMO:

VDC-233
BB: TROUBLE CODE 73 VOLTAGE INPUTTED TO LATERAL G SENSOR EXCEEDS SPECIFICATION. 300504E06

DIAGNOSIS:

• Faulty lateral G sensor

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



B4M2330

VDC-235

🖙 00.5.31/68j/0vdc 🖘

VDC (DIAGNOSTICS)

No	Sten	Check	Yes	No
1	CHECK OUTPUT OF YAW RATE AND I AT-	Is the vaw rate and lateral	Go to step 2	Go to step 5.
l.	ERAL G SENSOR USING SELECT MONI-	G sensor output on monitor		
	TOR.	display 2.5±0.2 V?		
	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			
2		Is there poor contact in	Penair connector	Go to step 3
	TORS.	connector between		
	Turn ignition switch to OFF.	VDCCM and yaw rate and		
		lateral G sensor?		
3	CHECK VDCCM.	Is the same trouble code	Replace VDCCM.	Go to step 4.
	1) Connect all connectors.	as in the current diagnosis	<ref. th="" to="" vdc-10<=""><th></th></ref.>	
	2) Erase the memory.	still being output?	VDC Control Mod-	
	3) Perform inspection mode.		ule (VDCCM).>	
	4) Read out the trouble code.		Day a secol so dite de s	A 1
4		Are other trouble codes	diagnosis corro	A temporary poor
			sponding to the	
			trouble code.	
5	CHECK INPUT VOLTAGE OF YAW RATE	Is the voltage between 10	Go to step 6.	Repair harness/
	AND LATERAL G SENSOR.	and 15 V?		connector
	1) Turn ignition switch to OFF.			between yaw rate
	2) Remove console box.			and lateral G sen-
	3) Disconnect connector from yaw rate and			sor and VDCCM.
	A) Turn ignition switch to ON			
	5) Measure voltage between vaw rate and			
	lateral G sensor connector terminals.			
	Connector & terminal			
	(R100) No. 3 (+) — No. 6 (–):			
6	CHECK YAW RATE AND LATERAL G SEN-	Is the resistance between	Go to step 7.	Replace yaw rate
	SOR.	4.3 and 4.9 kΩ?		and lateral G sen-
	1) Turn Ignition switch to OFF.			sor.
	lateral G sensor terminals			
	Terminals			
	No. 3 — No. 5:			
7	CHECK OPEN CIRCUIT IN YAW RATE AND	Is the resistance between	Go to step 8.	Repair harness/
	LATERAL G SENSOR OUTPUT HARNESS	4.3 and 4.9 kΩ?		connector
	AND GROUND HARNESS.			between yaw rate
	1) Connect connector to yaw rate and lateral			and lateral G sen-
	2) Disconnect connector from VDCCM			
	3) Measure resistance between VDCCM con-			
	nector terminals.			
	Connector & terminal			
L	(F87) No. 69 — No. 70:			
8	CHECK GROUND SHORT IN YAW RATE	Is the resistance more than	Go to step 9.	Repair harness
	AND LATERAL G SENSOR HARNESS.	1 1/122?		and lateral G sen
	lateral G sensor.			sor and VDCCM
	2) Measure resistance between VDCCM con-			
	nector and chassis ground.			
	Connector & terminal			
	(F87) No. 63 — Chassis ground:			
	(F87) No. 70 — Chassis ground:			
	(F87) No. 64 — Chassis ground:			

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<br="">VDC-24 Yaw Rate and Lateral G Sensor.></ref.>
10	CHECK YAW RATE AND LATERAL G SEN- SOR. 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<br="">VDC-24 Yaw Rate and Lateral G Sensor.></ref.>
11	CHECK YAW RATE AND LATERAL G SEN- SOR. 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<br="">VDC-24 Yaw Rate and Lateral G Sensor.></ref.>
12	CHECK POOR CONTACT IN CONNEC- TORS.	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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 14.
14	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

BC: TROUBLE CODE 74 VOLTAGE INPUTTED TO PRESSURE SENSOR 1 EXCEEDS SPECIFICATION. (PRIMARY PRESSURE SENSOR) 500504E12

DIAGNOSIS:

• Faulty primary pressure sensor

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



No	Sten	Check	Yes	No
1		Is the resistance less than	Go to step 4	Go to step 2
l .	SENSOR.	0.5Ω ?		
	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:		Depless however	Co to stop 2
 ²	1) Disconnect connector from VDCCM		Replace namess	Go to step 3.
	2) Remove cover from VDCCM <ref. th="" to<=""><th>0.3 22 !</th><th>and VDCCM</th><th></th></ref.>	0.3 22 !	and VDCCM	
	VDC-17 VDCCM Connector Cover.>			
	3) Connect connector to VDCCM.			
	4) Measure resistance between VDCCM and			
	chassis ground.			
	Connector & terminal			
	(P87) NO. 76 - Chassis ground:		Deneir er renlese	
3	TORS	VDCCM connector?		
			tor.	
4	CHECK POWER SUPPLY OF PRESSURE	Is the voltage between 4.75	Go to step 7.	Go to step 5.
	SENSOR.	and 5.25 V?		
	1) Turn ignition switch to ON.			
	2) Measure voltage between VDCH/U con-			
	nector terminals.			
	Connector & terminal $(F91)$ No. 16 (±) — No. 15 (–):			
5		Is the voltage between 4 75	Repair harness	Go to step 6
ľ	1) Turn ignition switch to OFF.	and 5.25 V?	between VDCH/U	
	2) Disconnect connector from VDCCM.		and VDCCM.	
	3) Remove cover from VDCCM. <ref. th="" to<=""><th></th><th></th><th></th></ref.>			
	VDC-17 VDCCM Connector Cover.>			
	4) Connect connector to VDCCM.			
	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-	
		In the mediates of	tor.	Danainha
7	CHECK GROUND SHORT OF HARNESS.	Is the resistance more than	Go to step 8.	Repair harness
	2) Disconnect connector from VDCCM	1 1/152 ?		and VDCCM
	3) Measure resistance between VDCH/U con-			
	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
	Connector & terminal			
	(F91) No. 13 (+) — Chassis ground (–):			
9	CHECK BATTERY SHORT OF HARNESS.	Is the voltage less than 0.5	Go to step 10.	Repair harness
	1) Turn ignition switch to ON.	V?		between VDCH/U
	2) Measure voltage between VDCH/U con-			and VDCCM.
	nector and chassis ground.			
	Connector & terminal			
	(F91) No. 13 (+) — Chassis ground (–):			

No.	Step	Check	Yes	No
10	 CHECK INPUT VOLTAGE OF PRESSURE SENSOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from VDCCM. 3) Remove cover from VDCCM. <ref. to<br="">VDC-17 VDCCM Connector Cover.></ref.> 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 (-): 	Is the voltage between 0.53 and 0.67 V?	Go to step 11.	Replace VDCH/U. <ref. to="" vdc-13<br="">Hydraulic Control Unit (H/U).></ref.>
11	CHECK POOR CONTACT IN CONNEC- TORS.	Is there poor contact in connector between VDCCM and pressure sen- sor?	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 trouble code.	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 13.
13	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

MEMO:

VDC-241

🖙 00.5.31/68i/0vdc 🖘

BD: TROUBLE CODE 74 VOLTAGE INPUTTED TO PRESSURE SENSOR 2 EXCEEDS SPECIFICATION. (SECONDARY PRESSURE SENSOR) S005504E13

DIAGNOSIS:

• Faulty secondary pressure sensor

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



VDC-242

🖙 00.5.31/68j/0vdc 🖘

No	Stop	Chack	Voc	No
1	 CHECK GROUND CIRCUIT OF PRESSURE SENSOR. 1) Turn ignition switch to OFF. 2) Disconnect connector (F91) from VDCH/U. 3) Measure resistance between VDCH/U connector and chassis ground. Connector & terminal (F91) No. 15 — Chassis ground: 	Is the resistance less than 0.5 Ω?	Go to step 4.	Go to step 2.
2	CHECK GROUND CIRCUIT OF VDCCM. 1) Disconnect connector from VDCCM. 2) Remove cover from VDCCM. <ref. to<br="">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:</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 CONNEC- TORS.	Is there poor contact in VDCCM connector?	Repair or replace VDCCM connec- tor.	Replace VDCCM.
4	CHECK POWER SUPPLY OF PRESSURE SENSOR. 1) Turn ignition switch to ON. 2) Measure voltage between VDCH/U con- nector terminals. Connector & terminal (F91) No. 16 (+) — No. 15 (-):	Is the voltage between 4.75 and 5.25 V?	Go to step 7.	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. to<br="">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 (-):</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 CONNEC- TORS.	Is there poor contact in VDCCM connector?	Repair or replace VDCCM connec- tor.	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 MΩ?	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. to<br="">VDC-17 VDCCM Connector Cover.> 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 connec- tor terminals. Connector & terminal (F87) No. 36 (+) — No. 76 (-):</ref.>	Is the voltage between 0.53 and 0.67 V?	Go to step 11.	Replace VDCH/U. <ref. to="" vdc-13<br="">Hydraulic Control Unit (H/U).></ref.>
11	CHECK POOR CONTACT IN CONNEC- TORS.	Is there poor contact in connector between VDCCM and pressure sen- sor?	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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 13.
13	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

MEMO:

VDC-245

🖙 00.5.31/68i/0vdc 🖘

VDC (DIAGNOSTICS)

BE: TROUBLE CODE 74 PRESSURE SENSOR 1 OFFSET IS TOO BIG. (PRIMARY PRESSURE SENSOR) SOUTH 10

NOTE:

For diagnostic procedure, refer to TROUBLE CODE 74. <Ref. VDC-246 TROUBLE CODE 74 PRESSURE SENSOR 2 OFFSET IS TOO BIG. (SECONDARY PRESSURE SENSOR), Diagnostics Chart with Select Monitor.>

BF: TROUBLE CODE 74 PRESSURE SENSOR 2 OFFSET IS TOO BIG. (SECONDARY PRESSURE SENSOR) SOUTH

DIAGNOSIS:

• Faulty pressure sensor

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



No.	Step	Check	Yes	No
1	CHECK DRIVING TECHNIC. Check the driver's technic.	Are the accelerator and brake pedals depressed simultaneously while driv- ing?	The VDC is nor- mal. Erase the trouble code. NOTE: Driving the vehicle with both the accelerator pedal and brake pedal depressed may store a 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 presssure sensor output on monitor display 0.6±0.075 V with brake pedal released?	Go to step 3.	Replace VDCH/U. <ref. to="" vdc-13<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 trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 4.
4	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.

BG: TROUBLE CODE 74 DIFFERENTIAL PRESSURE OF PRESSURE SENSOR IS TOO BIG. SOUTHERS SUBJECT OF DRESSURE

DIAGNOSIS:

Faulty pressure sensor

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



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 MΩ?	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. to<br="">VDC-17 VDCCM Connector Cover.> 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 connec- tor terminals. Connector & terminal (F87) No. 77 (+) — No. 76 (-): (F87) No. 36 (+) — No. 76 (-):</ref.>	Is the voltage between 0.53 and 0.67 V?	Go to step 5.	Replace VDCH/U. <ref. to="" vdc-13<br="">Hydraulic Control Unit (H/U).></ref.>
5	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 6.	Perform bleeding from brake sys- tem.
6	CHECK INPUT VOLTAGE OF PRESSURE SENSOR. 1) Depress the brake pedal with 50 kg (110 lb). 2) Measure voltage between VDCCM connec- tor 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 7.	Replace VDCH/U.
7	CHECK POOR CONTACT IN CONNEC- TORS.	Is there poor contact in connector between VDCCM and pressure sen- sor?	Repair connector.	Go to step 8 .
8	 CHECK VDCCM. 1) Connect all connectors. 2) Erase the memory. 3) Perform inspection mode. 4) Read out the trouble code. 	Is the same trouble code as in the current diagnosis still being output?	Replace VDCCM. <ref. to="" vdc-10<br="">VDC Control Mod- ule (VDCCM).></ref.>	Go to step 9 .

No.	Step	Check	Yes	No
9	CHECK ANY OTHER TROUBLE CODES APPEARANCE.	Are other trouble codes being output?	Proceed with the diagnosis corre- sponding to the trouble code.	A temporary poor contact.