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MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

BASIC DIAGNOSTICS PROCEDURE

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

1. Basic Diagnostics Procedure

A: PROCEDURE

Step	Check	Yes	No
<p>1</p> <p>CHECK PRE-INSPECTION.</p> <p>1)Ask the customer when and how trouble occurred using the check list for interview. <Ref. to 6MT-3, Check List for Interview.></p> <p>2)Before performing diagnosis, inspect the unit which might influence the driver's control center differential. <Ref. to 6MT-4, INSPECTION, General Information.></p>	Is unit that might influence the driver's control center differential problem normal?	Go to step 2.	Repair the faulty unit.
<p>2</p> <p>CALLING UP THE DTC.</p> <p>Check the DTC. <Ref. to 6MT-12, STORED DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Read Diagnostic Trouble Code (DTC).></p> <p>NOTE: For DTC, refer to "List of Diagnostic Trouble Code (DTC)". <Ref. to 6MT-17, List of Diagnostic Trouble Code (DTC).></p>	Is the DTC called up?	Go to step 3. NOTE: Record all DTC (Include: normal code).	Inspect using "Can not calling up DTC". NOTE: After the inspection, read the DTC again. <Ref. to 6MT-12, STORED DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Read Diagnostic Trouble Code (DTC).>
<p>3</p> <p>PERFORM THE DIAGNOSIS.</p> <p>1)Inspect and repair the all DTC using "Diagnostic Procedure with Diagnostic Trouble Code (DTC)". <Ref. to 6MT-18, Diagnostic Procedure with Diagnostic Trouble Code (DTC).></p> <p>NOTE: For DTC, refer to "List of Diagnostic Trouble Code (DTC)". <Ref. to 6MT-17, List of Diagnostic Trouble Code (DTC).></p> <p>2)Perform the inspection mode. <Ref. to 6MT-14, Inspection Mode.></p>	Is the DTC displayed?	Record all DTC, and inspect using "Diagnostic Procedure with Diagnostic Trouble Code (DTC)" <Ref. to 6MT-18, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> Repeat "PERFORM THE DIAGNOSIS" until normal code called up.	Inspect using "General Diagnostic Table".

GENERAL INFORMATION

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3. General Information

A: CAUTION

Supplemental restraint system airbag wiring harness is routed near the driver's control center differential control module.

CAUTION:

- All airbag system wiring harness and connectors are colored yellow. Do not use the electrical test equipment on these circuits.
- Be careful not to damage the airbag system wiring harness when performing diagnostics and servicing the driver's control center differential control module.
- When measuring the voltage or resistance of ECM or each sensor, use a tapered pin with diameter of less than 0.64 mm (0.025 in) in order to avoid poor contact. Do not insert the pin with diameter of more than 0.65 mm (0.026 in).

C: PREPARATION TOOL

1. GENERAL PURPOSE TOOL

TOOL NAME	REMARKS
Circuit Tester	Used for measuring resistance, voltage and ampere.
Oscilloscope	Used for measuring sensor.

B: INSPECTION

1. POWER SUPPLY

- 1) Measure battery voltage and specific gravity of electrolyte.

Standard of voltage: More than 12 V

Standard of gravity: More than 1.260

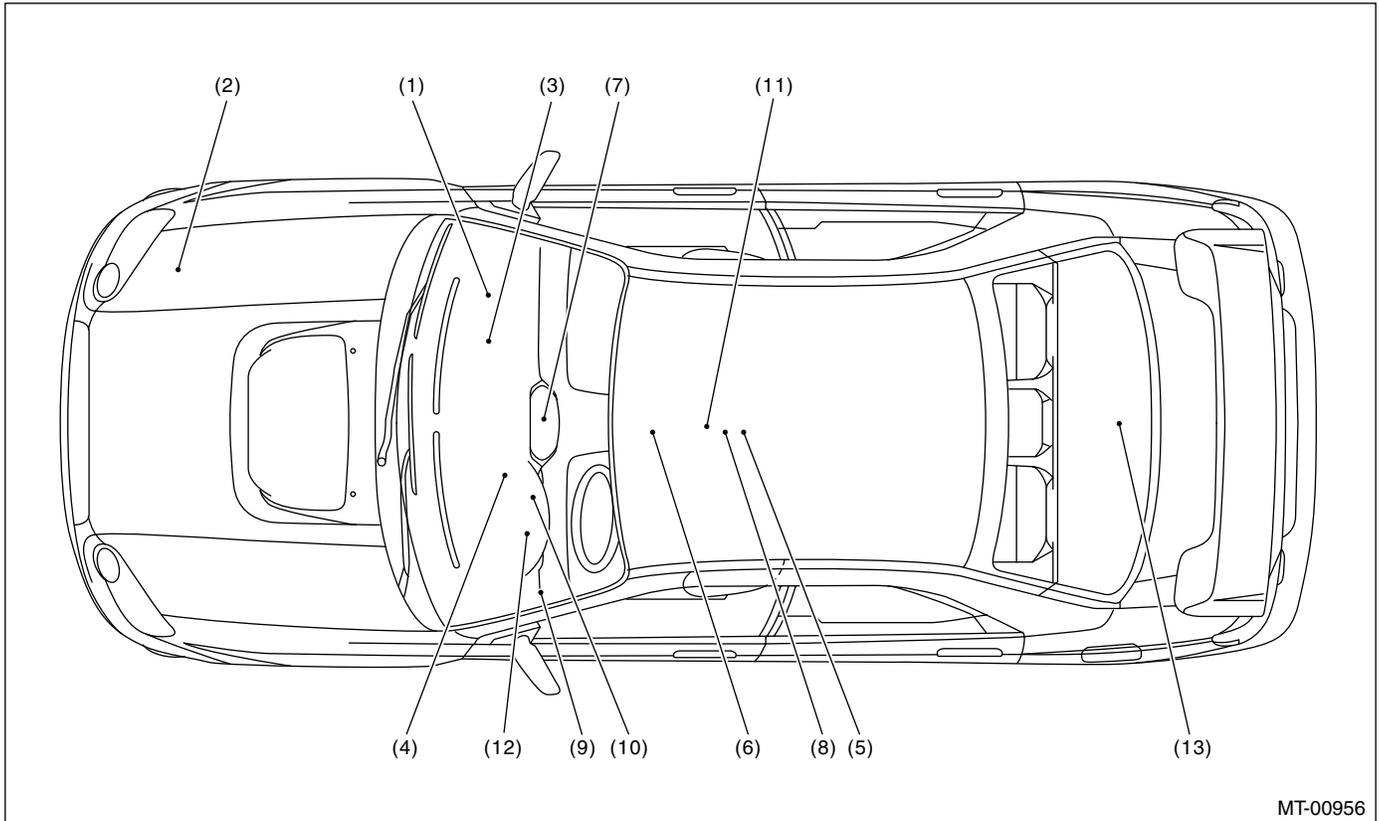
- 2) Check the condition of fuse.
- 3) Check the condition of harness and harness connector.

ELECTRICAL COMPONENT LOCATION

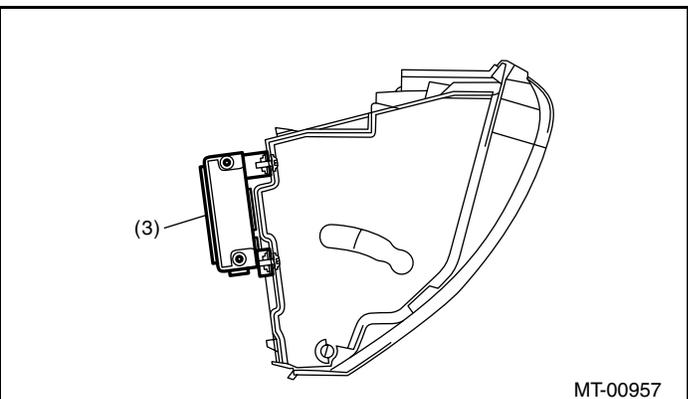
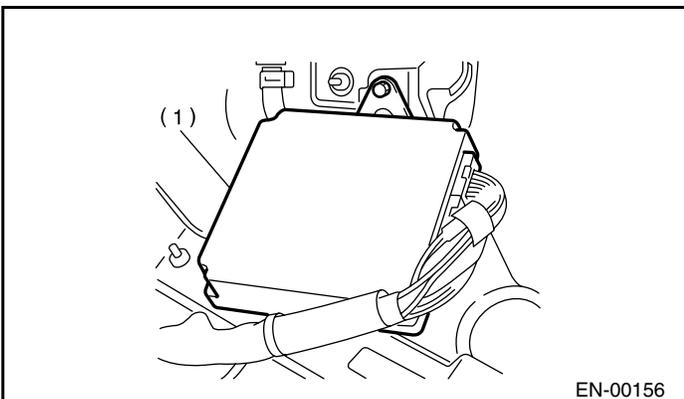
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4. Electrical Component Location

A: POSITION

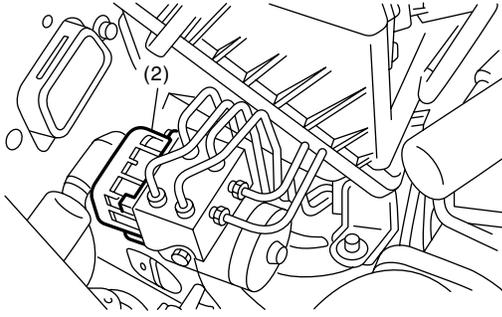


- | | | |
|---|---|---|
| (1) Engine control module (ECM) | (7) Center differential | (12) Brake light switch |
| (2) ABS control module & hydraulic control unit (ABSCM&H/U) | (8) Manual mode switch | (13) Rear differential oil temperature switch |
| (3) Driver's control center differential control module | (9) Driver's control center differential relay | |
| (4) Accelerator position sensor | (10) Driver's control center differential indicator (driver's control center differential diagnostic indicator) | |
| (5) Lateral G sensor | (11) Parking brake switch | |
| (6) Center differential control dial | | |

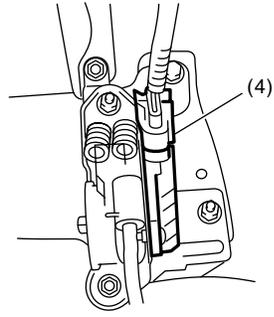


ELECTRICAL COMPONENT LOCATION

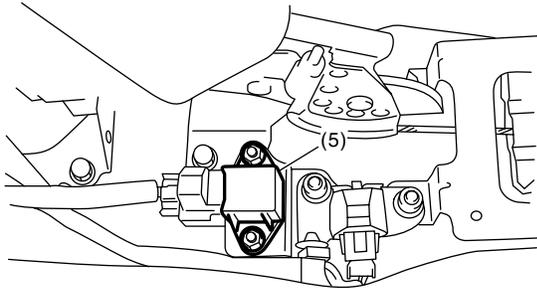
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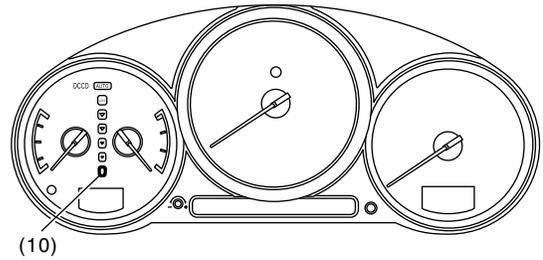
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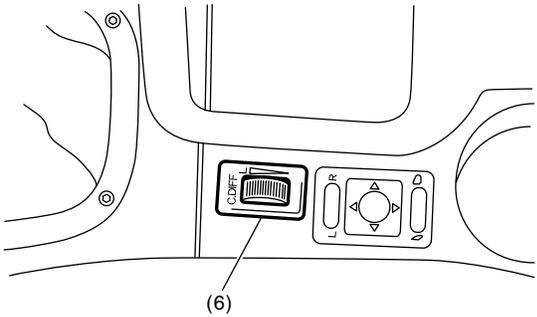
MT-00958



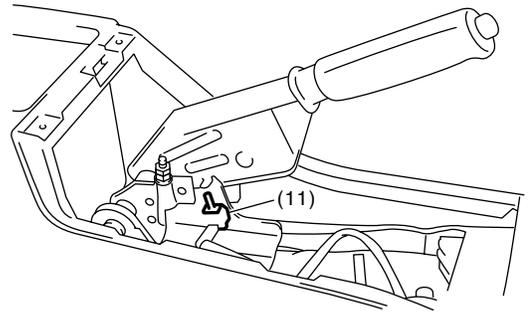
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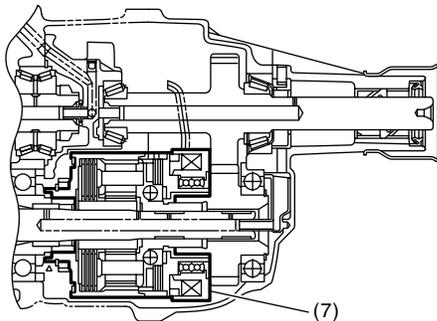
MT-00860



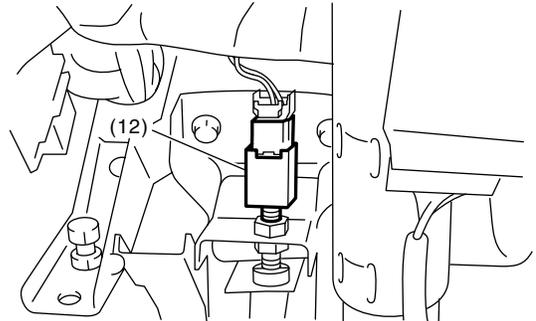
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MT-00861



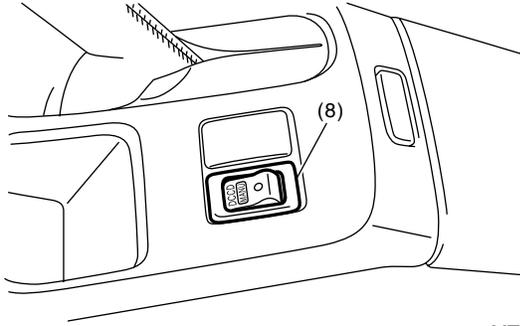
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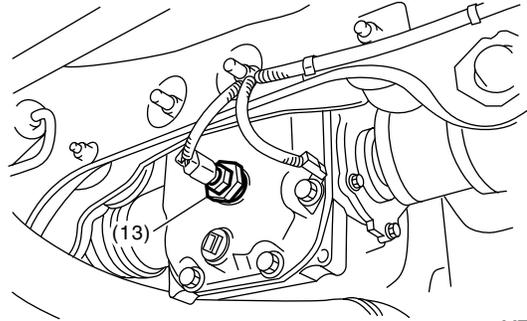
MT-00959

ELECTRICAL COMPONENT LOCATION

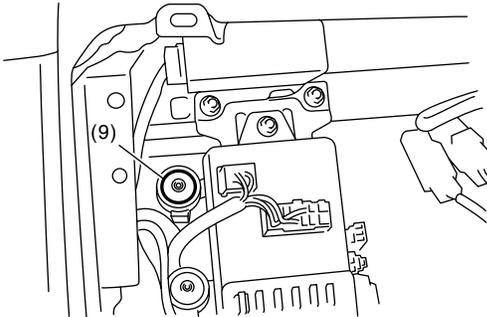
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MT-00858



MT-00863

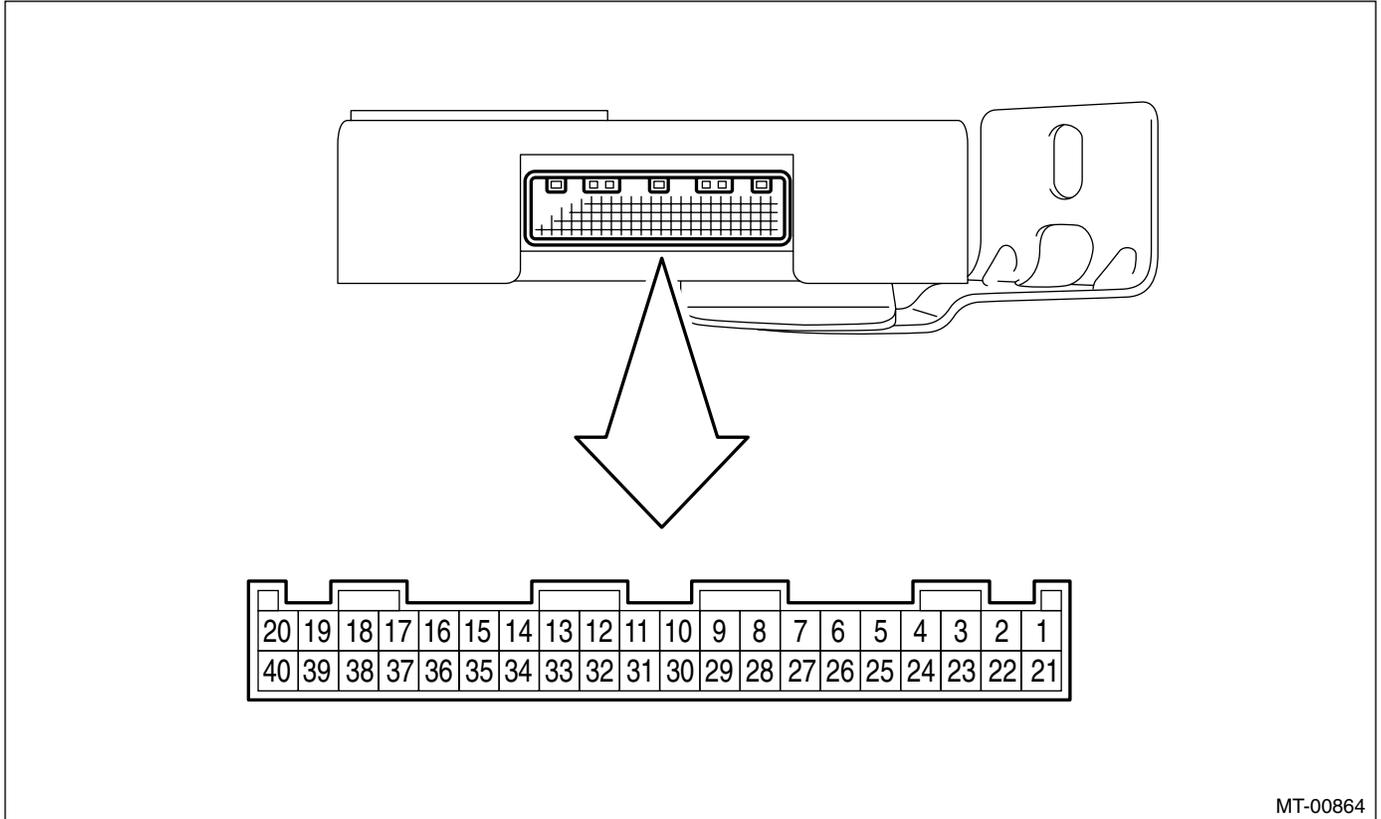


MT-00960

SUBARU.

5. Driver's Control Center Differential Control Module I/O Signal

A: ELECTRICAL SPECIFICATION



MT-00864

Check with ignition switch ON.				
Content	Terminal No.	Measuring conditions	Voltage (V)	To body resistance (ohm)
Back-up power supply	17	Ignition switch ON or OFF	10 — 13	—
Ignition power supply	15	Ignition switch ON (engine OFF)	10 — 13	—
	16			—
Driver's control center differential power supply	18			—
	19			—
Driver's control relay	21	Ignition switch ON	Less than 1	—
Accelerator position sensor	32	Accelerator pedal is released.	0.3 — 1.8	—
		Accelerator pedal is fully depressed.	2.8 — 4.7	
Center differential control dial power supply	13	Ignition switch ON	Approx. 5	—
Center differential control dial ground line	34	Ignition switch ON	0	—
Center differential control dial input signal	12	When differential is locked	Approx. 5	—
		When differential is free	Less than 0.5	
Lateral G sensor	33	Ignition switch ON (When lateral G sensor is horizontal)	2.3 — 2.7	—
Driver's control center differential output	20	When differential is locked (When driver's control center differential indicator light is in differential lock)	6.0 — 7.0	1.0 — 2.0 (between connector terminals)
		When differential is free (When parking brake is applied)	Less than 0.5	
Driver's control center differential ground line	40	When differential is free	Less than 0.5	

DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE I/O SIGNAL

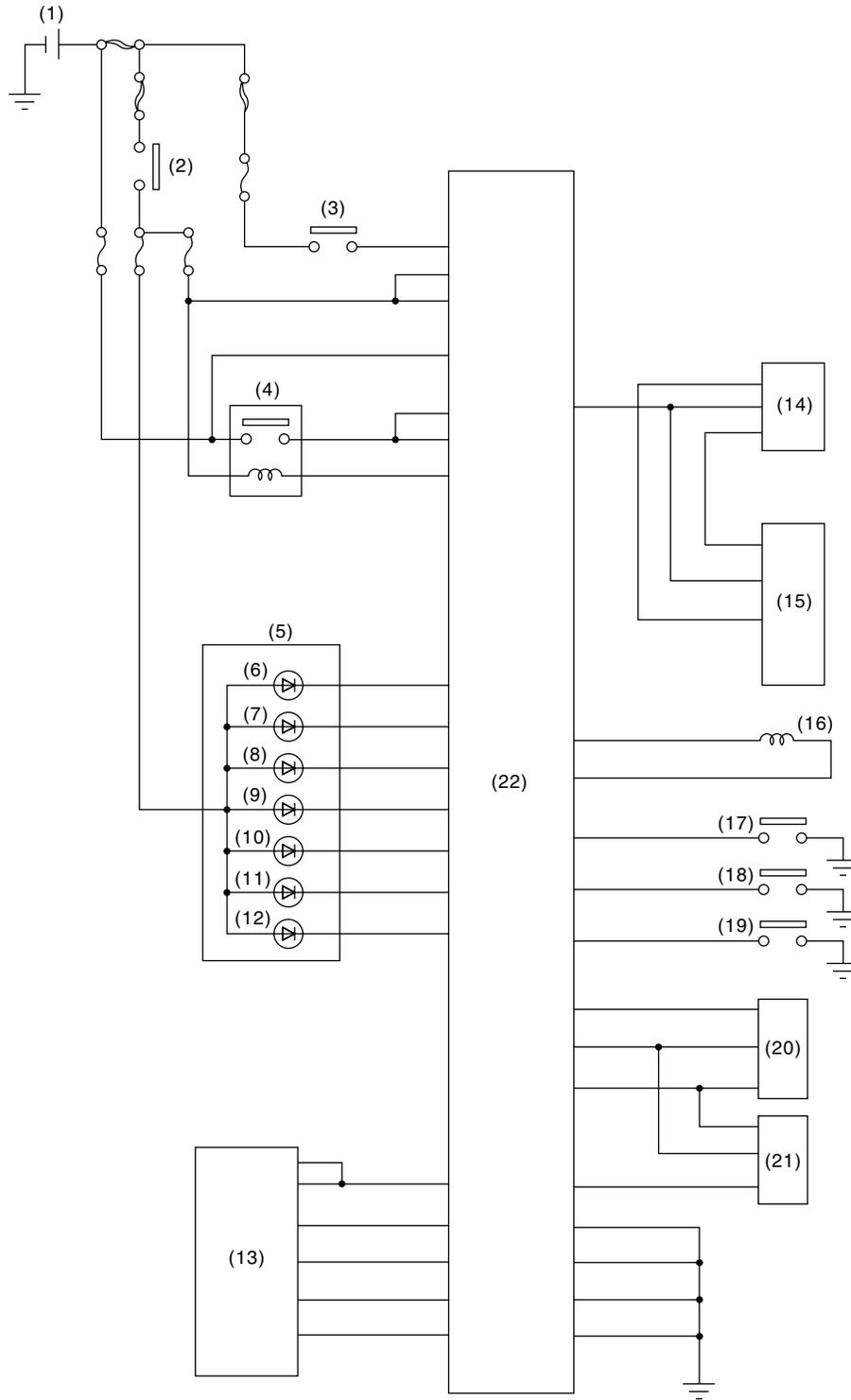
MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Check with ignition switch ON.				
Content	Terminal No.	Measuring conditions	Voltage (V)	To body resistance (ohm)
Parking brake switch	11	When parking brake is applied	Less than 0.4	—
		When parking brake is released	More than 8	
Driver's control center differential indicator light (Lock ratio 0%)	4	When illuminates	Less than 1	—
		When turned off	More than 8	
Driver's control center differential indicator light (Lock ratio 15%)	3	When illuminates	Less than 1	—
		When turned off	More than 8	
Driver's control center differential indicator light (Lock ratio 35%)	2	When illuminates	Less than 1	—
		When turned off	More than 8	
Driver's control center differential indicator light (Lock ratio 65%)	1	When illuminates	Less than 1	—
		When turned off	More than 8	
Driver's control center differential indicator light (Lock ratio 85%)	24	When illuminates	Less than 1	—
		When turned off	More than 8	
Driver's control center differential indicator light (Lock ratio 100%)	23	When illuminates	Less than 1	—
		When turned off	More than 8	
AUTO indicator light	22	When illuminates	Less than 1	—
		When turned off	More than 8	
ABSCM&H/U	10	When ABS control operates	Less than 1	—
		When ABS control does not operate	More than 8	
Rear LH ABS wheel speed sensor signal	26	When stopped	Less than 1	—
		When driving	Less than 1 ↔ More than 8	
Rear RH ABS wheel speed sensor signal	27	When stopped	Less than 1	—
		When driving	Less than 1 ↔ More than 8	
Front LH ABS wheel speed sensor signal	28	When stopped	Less than 1	—
		When driving	Less than 1 ↔ More than 8	
Front RH ABS wheel speed sensor signal	29	When stopped	Less than 1	—
		When driving	Less than 1 ↔ More than 8	
Stop light switch	9	Brake pedal depressed.	More than 8	—
		Brake pedal released.	Less than 1	
Rear differential oil temperature switch	7	Rear differential oil temperature switch OFF	More than 8	—
		Rear differential oil temperature switch ON	Less than 0.4	
Manual mode switch	8	Switch is released	More than 4.3	—
		Switch is depressed	Less than 0.1	
Data link signal (Subaru Select Monitor)	5	—	—	—
	6			—
Driver's control center differential control module ground line	36	—	0	—
	37			—
	38			—
	39			—

DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE I/O SIGNAL

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

B: SCHEMATIC



MT-00865

DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE I/O SIGNAL

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

- | | | |
|---|---|--|
| (1) Battery | (9) Driver's control center differential indicator light (Lock ratio 65%) | (17) Parking brake switch |
| (2) Ignition relay | (10) Driver's control center differential indicator light (Lock ratio 85%) | (18) Manual mode switch |
| (3) Stop light switch | (11) Driver's control center differential indicator light (Lock ratio 100%) | (19) Rear differential oil temperature switch |
| (4) Driver's control center differential relay | (12) AUTO indicator light | (20) Center differential control dial |
| (5) Combination Meter | (13) ABS control module & hydraulic control unit (ABSCM&H/U) | (21) Lateral G sensor |
| (6) Driver's control center differential indicator light (Lock ratio 0%) | (14) Accelerator position sensor | (22) Driver's control center differential control module |
| (7) Driver's control center differential indicator light (Lock ratio 15%) | (15) Engine control module (ECM) | |
| (8) Driver's control center differential indicator light (Lock ratio 35%) | (16) Driver's control center differential | |

READ DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

6. Read Diagnostic Trouble Code (DTC)

A: OPERATION

1. STORED DIAGNOSTIC TROUBLE CODE (DTC)

- 1) Securely apply the parking brake.
- 2) Turn the ignition switch to ON.
- 3) Set the driver's control dial to differential lock or differential free.
- 4) Hold the accelerator pedal depressed fully.

NOTE:

Hold the accelerator pedal depressed fully until reading of DTC is completed.

- 5) Set the driver's control dial to differential lock and differential free for ten times each.

NOTE:

- Repeat the step from the beginning when DTC is not displayed or diagnostic indicator light does not blink.
- Refer to "HOW TO READ DIAGNOSTIC TROUBLE CODE (DTC)" for reading DTC. <Ref. to 6MT-13, HOW TO READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Read Diagnostic Trouble Code (DTC).>

2. SELF-DIAGNOSIS DIAGNOSTIC TROUBLE CODE (DTC)

NOTE:

Perform the following step 4) to 8) within 30 sec.

- 1) Securely apply the parking brake.
- 2) Set the center differential control dial to differential free.
- 3) Start the engine.
- 4) Set the center differential control dial to differential lock.
- 5) Release the parking brake.
- 6) Set the center differential control dial to differential free.
- 7) Securely apply the parking brake.
- 8) Repeat the step 4) to 7) for twice.

NOTE:

- ABS wheel speed sensor DTC is displayed. Do not judge it as a problem. Perform the inspection mode.
- Repeat the step from the beginning when DTC is not displayed or diagnostic indicator light does not blink.
- Refer to "HOW TO READ DIAGNOSTIC TROUBLE CODE (DTC)" for reading DTC. <Ref. to 6MT-13, HOW TO READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Read Diagnostic Trouble Code (DTC).>

INSPECTION MODE

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

7. Inspection Mode

A: OPERATION

WARNING:

Observe the road traffic law.

- 1) Call up the Self-diagnosis diagnostic trouble code (DTC). <Ref. to 6MT-12, SELF-DIAGNOSIS DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Read Diagnostic Trouble Code (DTC).>
- 2) Apply the parking brake.
- 3) Depress the brake pedal.
- 4) Operate the Manual mode switch once or more, and then set to Manual mode.
- 5) Turn the center differential control dial to differential lock and differential free for once, and turn it to differential lock, and then wait three seconds.
- 6) Drive the vehicle in 15 km/h (9 MPH) for more than 5 sec.

CLEAR MEMORY MODE

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

8. Clear Memory Mode

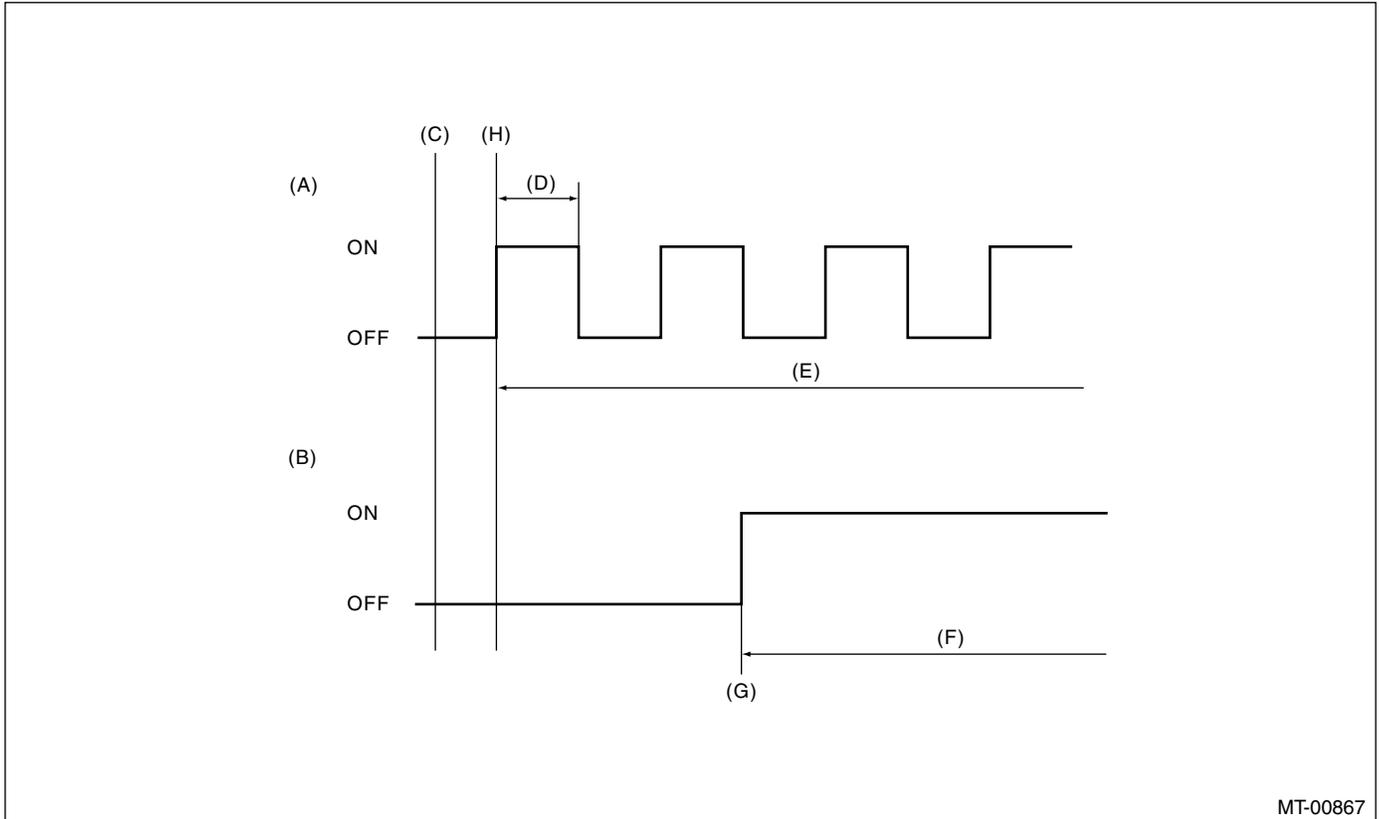
A: OPERATION

Stored DTC is cleared when ignition switch turns on next time, if there is no malfunction on each I/O signal at the time when finishing inspection mode after calling up the Self-diagnosis DTC (all Self-diagnosis DTC is cleared).

9. Driver's Control Center Differential Indicator Light Display

A: INSPECTION

When the malfunction occurs on part or unit, the control module performs self diagnosis and driver's control center differential indicator light (at the bottom differential free light) keep blinking until detect the malfunction and the ignition switch is turned to OFF. Faulty part or unit can be identified by calling up DTC. Indicator display is as shown in the figure.



MT-00867

- (A) Faulty
- (B) Normal
- (C) Ignition switch ON
- (D) 1 sec.

- (E) Blink
- (F) Driver's control center differential indicator light illuminates

- (G) Set manual mode dial to differential free position
- (H) Malfunction is detected

LIST OF DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

10. List of Diagnostic Trouble Code (DTC)

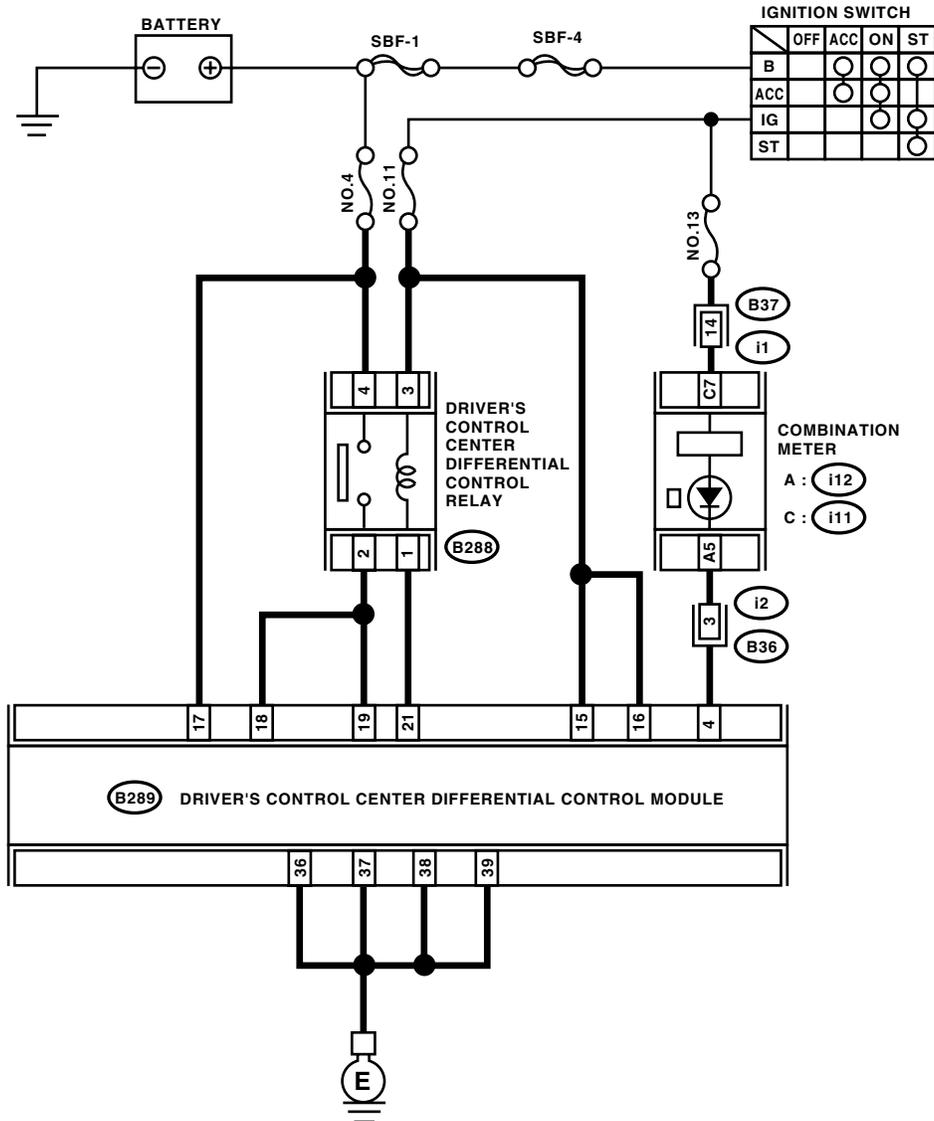
A: LIST

DTC	Item	Content of diagnosis	Index
—	Diagnosis indicator light, Center differential control dial, Parking brake switch, accelerator position sensor	Diagnosis indicator light does not illuminate. Can not calling up the DTC.	<Ref. to 6MT-18, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
—	Rear differential gear oil temperature switch	Diagnosis indicator light blinks at 2 Hz, but driver's control center differential does not operate.	<Ref. to 6MT-23, CHECK REAR DIFFERENTIAL OIL TEMPERATURE SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
11	Front ABS wheel speed sensor RH	Open or short circuit in front ABS wheel speed sensor RH circuit	<Ref. to 6MT-26, DTC 11 FRONT ABS WHEEL SPEED SENSOR RH SIGNAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
12	Front ABS wheel speed sensor LH	Open or short circuit in front ABS wheel speed sensor LH circuit	<Ref. to 6MT-29, DTC 12 FRONT ABS WHEEL SPEED SENSOR LH SIGNAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
13	Rear ABS wheel speed sensor RH	Open or short circuit in rear ABS wheel speed sensor RH circuit	<Ref. to 6MT-32, DTC 13 REAR ABS WHEEL SPEED SENSOR RH SIGNAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
14	Rear ABS wheel speed sensor LH	Open or short circuit in rear ABS wheel speed sensor LH circuit	<Ref. to 6MT-35, DTC 14 REAR ABS WHEEL SPEED SENSOR LH SIGNAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
21	Accelerator position sensor	Open or short circuit in accelerator position sensor circuit	<Ref. to 6MT-38, DTC 21 ACCELERATOR POSITION SENSOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
22	Lateral G sensor	Open or short circuit in lateral G sensor circuit	<Ref. to 6MT-41, DTC 22 LATERAL G SENSOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
23	Driver's control center differential output	Open or short circuit in driver's control center differential output circuit	<Ref. to 6MT-43, DTC 23 CHECK CENTER DIFFERENTIAL., Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
24	Center differential control dial	Open or short circuit in center differential control dial circuit	<Ref. to 6MT-45, DTC 24 CHECK CENTER DIFFERENTIAL CONTROL DIAL., Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
31	Manual mode switch	Open or short circuit in manual mode switch circuit	<Ref. to 6MT-47, DTC 31 MANUAL MODE SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
32	Parking brake switch	Open or short circuit in parking brake switch circuit	<Ref. to 6MT-51, DTC 32 CHECK PARKING BRAKE SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
33	Brake switch	Open or short circuit in brake switch circuit	<Ref. to 6MT-53, DTC 33 STOP LIGHT SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
34	ABS switch	Open or short circuit in ABS switch circuit	<Ref. to 6MT-55, DTC 34 ABS SWITCH SIGNAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

11. Diagnostic Procedure with Diagnostic Trouble Code (DTC)

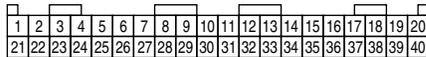
A: DTC CANNOT BE CALLED UP
WIRING DIAGRAM:



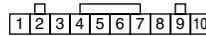
B288



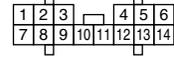
B289



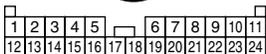
C : i11



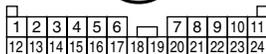
A : i12



i2



i1



DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK THE AUTO INDICATOR LIGHT. Turn the ignition switch to ON.	Does the AUTO indicator light illuminate?	Go to step 14 .	Go to step 2 .
2 CHECK THE GROUND CIRCUIT OF DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE. 1) Turn the ignition switch to OFF. 2) Disconnect the connector of driver's control center differential control module. 3) Measure the resistance between driver's control center differential control module harness connector and chassis ground. Connector & terminal (B289) No. 36 — Chassis ground: (B289) No. 37 — Chassis ground: (B289) No. 38 — Chassis ground: (B289) No. 39 — Chassis ground:	Is the resistance less than 1 Ω ?	Go to step 3 .	Repair the open circuit of driver's control center differential control module ground circuit.
3 CHECK FUSE (No. 4). Remove the fuse (No. 4).	Is the fuse (No. 4) is blown out?	Replace fuse (No.4). If the replaced fuse (No.4) is blown out easily, repair short circuit in harness between fuse (No.4) and driver's control center differential control module.	Go to step 4 .
4 CHECK FUSE (No. 11). Remove the fuse (No. 11).	Is the fuse (No. 11) is blown out?	Replace fuse (No.11). If the replaced fuse (No.11) is blown out easily, repair short circuit in harness between fuse (No.11) and driver's control center differential control module.	Go to step 5 .
5 CHECK POWER SUPPLY CIRCUIT OF DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE. Measure the voltage between driver's control center differential control module harness connector and chassis ground. Connector & terminal (B289) No. 17 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 6 .	Repair the open circuit in harness between fuse (No. 4) and driver's control center differential control module, or fuse (No. 4) and battery.
6 CHECK POWER SUPPLY CIRCUIT OF DRIVER'S CONTROL CENTER DIFFERENTIAL RELAY. 1) Disconnect the harness connector of driver's control center differential relay. 2) Measure the voltage between driver's control center differential relay harness connector and chassis ground. Connector & terminal (B288) No. 4 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 7 .	Repair the open circuit between fuse (No. 4) and driver's control center differential relay.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
<p>7</p> <p>CHECK IGNITION POWER SUPPLY CIRCUIT OF DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE.</p> <p>1) Turn the ignition switch to ON. (engine OFF) 2) Measure the voltage between driver's control center differential control module and chassis ground.</p> <p>Connector & terminal (B289) No. 15 (+) — Chassis ground (-): (B289) No. 16 (+) — Chassis ground (-):</p>	Is the voltage more than 10 V?	Go to step 8.	Repair the open circuit in harness between fuse (No. 11) and driver's control center differential control module, or fuse (No. 11) and battery.
<p>8</p> <p>CHECK IGNITION POWER SUPPLY CIRCUIT OF DRIVER'S CONTROL CENTER DIFFERENTIAL RELAY.</p> <p>Measure the voltage between driver's control center differential relay and chassis ground.</p> <p>Connector & terminal (B288) No. 3 (+) — Chassis ground (-):</p>	Is the voltage more than 10 V?	Go to step 9.	Repair the open circuit between fuse (No. 11) and driver's control center differential control module.
<p>9</p> <p>CHECK HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND DRIVER'S CONTROL RELAY.</p> <p>Measure the resistance of harness between driver's control center differential control module harness connector and driver's control relay harness connector.</p> <p>Connector & terminal (B289) No. 18 — (B288) No. 2: (B289) No. 19 — (B288) No. 2: (B289) No. 21 — (B288) No. 1:</p>	Is the resistance less than 1 Ω ?	Go to step 10.	Repair the open circuit between driver's control center differential control module harness connector and driver's control relay harness connector.
<p>10</p> <p>CHECK HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND DRIVER'S CONTROL RELAY.</p> <p>Measure the resistance of harness between driver's control center differential control module harness connector and chassis ground.</p> <p>Connector & terminal (B289) No. 18 — Chassis ground: (B289) No. 19 — Chassis ground: (B289) No. 21 — Chassis ground:</p>	Is the resistance more than 1 $M\Omega$?	Go to step 11.	Repair the short circuit between driver's control center differential control module harness connector and driver's control relay harness connector.
<p>11</p> <p>CHECK DRIVER'S CONTROL RELAY.</p> <p>Measure the resistance between driver's control relay terminals.</p> <p>Terminals No. 4 — No. 2:</p>	Is the resistance more than 1 $M\Omega$?	Go to step 12.	Replace the driver's control relay.
<p>12</p> <p>CHECK DRIVER'S CONTROL RELAY.</p> <p>Connect the terminal No. 3 to battery positive side, and terminal No. 1 to battery negative side, and then measure the resistance between driver's control relay terminals.</p> <p>Terminals No. 4 — No. 2:</p>	Is the resistance less than 1 Ω ?	Go to step 13.	Replace the driver's control relay.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
13 CHECK IGNITION POWER SUPPLY CIRCUIT OF DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE. 1)Connect all connectors. 2)Turn the ignition switch to ON. (engine OFF) 3)Measure the voltage between driver's control center differential control module and chassis ground. Connector & terminal (B289) No. 18 (+) — Chassis ground (-): (B289) No. 19 (+) — Chassis ground (-): (B289) No. 21 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 14.	Go to step 23.
14 CHECK MANUAL MODE SWITCH. Push the manual mode switch to enter the manual mode.	Is the manual mode obtained?	Go to step 15.	Repair the switch. <Ref. to 6MT-47, DTC 31 MANUAL MODE SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
15 CHECK DRIVER'S CONTROL CENTER DIFFERENTIAL INDICATOR LIGHT. Operate the center differential control dial.	Does the center differential indicator light illuminate according to center differential control dial?	Go to step 17.	Go to step 16.
16 CHECK THE CENTER DIFFERENTIAL CONTROL DIAL <Ref. to 6MT-45, DTC 24 CHECK CENTER DIFFERENTIAL CONTROL DIAL., Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is the center differential control dial circuit normal?	Go to step 17.	Repair it.
17 CHECK THE PARKING BRAKE SWITCH <Ref. to 6MT-51, DTC 32 CHECK PARKING BRAKE SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is the parking brake switch circuit normal?	Go to step 18.	Repair it.
18 CHECK THE ACCELERATOR POSITION SENSOR <Ref. to 6MT-38, DTC 21 ACCELERATOR POSITION SENSOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is the accelerator position sensor circuit normal?	Go to step 19.	Repair it.
19 READ THE DTC Read the DTC. <Ref. to 6MT-12, OPERATION, Read Diagnostic Trouble Code (DTC).>	Is the DTC called up?	Go back to the Basic Diagnostic Procedure. <Ref. to 6MT-2, PROCEDURE, Basic Diagnostics Procedure.>	Go to step 20.
20 CHECK THE DRIVER'S CONTROL CENTER DIFFERENTIAL INDICATOR LIGHT. 1)Turn the ignition switch to OFF. 2)Disconnect harness connector from combination meter. 3)Turn the ignition switch to ON. (engine OFF) 4)Short between the combination meter harness connector and chassis ground. Connector & terminal (i12) No. 5 — Chassis ground:	Does the lowest light of driver's control center differential indicator illuminate?	Go to step 21.	Check the combination meter.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
<p>21 CHECK THE HARNESS BETWEEN COMBINATION METER AND DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE.</p> <p>1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from driver's control center differential control module. 3) Measure the resistance of harness between combination meter harness connector and driver's control center differential control module harness connector.</p> <p>Connector & terminal <i>(i12) No. 5 — (B289) No. 4:</i></p>	<p>Is the resistance less than 1 Ω?</p>	<p>Go to step 22.</p>	<p>Repair the open circuit and connector of harness between combination meter harness connector and driver's control center differential control module harness connector.</p>
<p>22 CHECK THE HARNESS BETWEEN COMBINATION METER AND DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE.</p> <p>Measure the resistance of harness between driver's control center differential control module harness connector and chassis ground.</p> <p>Connector & terminal <i>(B289) No. 4 — Chassis ground:</i></p>	<p>Is the resistance more than 1 $M\Omega$?</p>	<p>Go to step 23.</p>	<p>Repair the open circuit and connector of harness between combination meter harness connector and driver's control center differential control module harness connector.</p>
<p>23 CHECK THE POOR CONTACT IN HARNESS CONNECTOR</p>	<p>Is there any poor contact in harness connectors of each circuit?</p>	<p>Repair the poor contact.</p>	<p>Replace the driver's control center differential control module.</p>

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

B: CHECK REAR DIFFERENTIAL OIL TEMPERATURE SWITCH

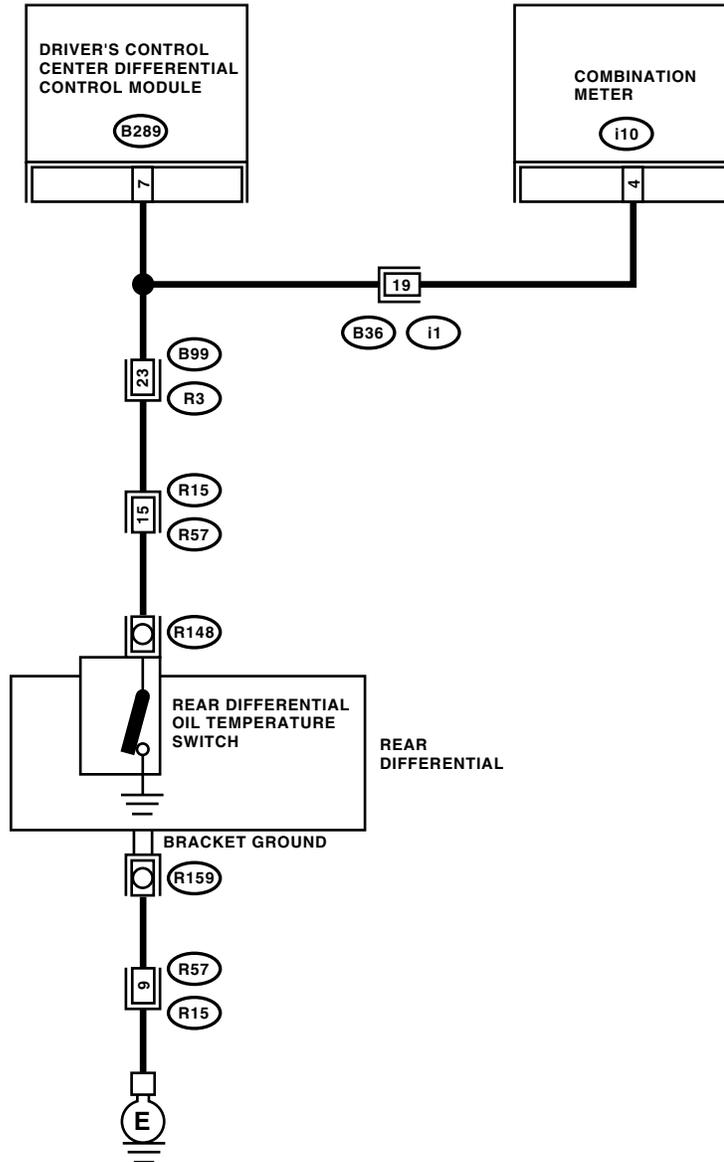
DIAGNOSIS:

Input signal circuit of rear differential oil temperature switch is open or shorted.

TROUBLE SYMPTOM:

- Center differential stays free.
- Handling tends to oversteer.
- Rear differential oil temperature switch warning light illuminates.

WIRING DIAGRAM:



B289

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

B99

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

i10

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

R57

1	2	3	4	5	6	7		
8	9	10	11	12	13	14	15	16

i1

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

MT-00962

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
<p>1 CHECK REAR DIFFERENTIAL OIL TEMPERATURE SWITCH WARNING LIGHT CIRCUIT.</p> <p>1) Turn the ignition switch to OFF. 2) Disconnect the connector of driver's control center differential control module harness connector. 3) Turn the ignition switch to ON. (engine OFF) 4) Measure the power supply voltage of rear differential oil temperature switch.</p> <p>Connector & terminal (B289) No. 7 (+) — Chassis ground (-):</p>	Is the voltage less than 0.4 V?	Go to step 7.	Go to step 2.
<p>2 CHECK THE HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND COMBINATION METER.</p> <p>1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from the combination meter. 3) Measure the resistance between combination meter and driver's control center differential control module harness connector.</p> <p>Connector & terminal (B289) No. 7 — (i10) No. 4:</p>	Is the resistance less than 1 Ω ?	Go to step 3.	Repair the open circuit between driver's control center differential control module and combination meter.
<p>3 CHECK THE HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND REAR DIFFERENTIAL OIL TEMPERATURE SWITCH.</p> <p>1) Disconnect the connector from the rear differential oil temperature switch. 2) Measure the resistance between driver's control center differential control module harness connector and rear differential oil temperature switch harness connector.</p> <p>Connector & terminal (B289) No. 7 — (R148) No. 1:</p>	Is the resistance less than 1 Ω ?	Go to step 4.	Repair the open circuit between driver's control center differential control module and rear differential oil temperature switch.
<p>4 CHECK REAR DIFFERENTIAL OIL TEMPERATURE SWITCH GROUND CIRCUIT.</p> <p>1) Disconnect the harness connector from bracket ground of rear differential. 2) Measure the resistance between the rear differential oil temperature switch ground harness connector and chassis ground.</p> <p>Connector & terminal (R159) No. 1 — Chassis ground:</p>	Is the resistance more than 1 M Ω ?	Repair the open circuit of rear differential oil temperature switch ground circuit and poor contact of harness connector.	Go to step 5.
<p>5 CHECK REAR DIFFERENTIAL OIL TEMPERATURE SWITCH.</p> <p>Measure the resistance between rear differential oil temperature switch terminal and rear differential oil temperature switch body.</p> <p>Terminals No. 1 — Rear differential oil temperature switch body:</p>	Is the resistance less than 1 Ω ?	Go to step 6.	Replace the rear differential oil temperature switch.
<p>6 CHECK REAR DIFFERENTIAL OIL TEMPERATURE SWITCH WARNING LIGHT.</p> <p>1) Turn the ignition switch to ON. 2) Short between the combination meter harness connector and chassis ground.</p> <p>Terminals No. 4 (+) — Chassis ground (-):</p>	Does the rear differential oil temperature switch warning light turn OFF?	Go to step 7.	Replace the combination meter.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

	Step	Check	Yes	No
7	CHECK POOR CONTACT.	Is there any poor contact in the circuit of rear differential oil temperature switch?	Repair the poor contact.	Replace the driver's control center differential control module.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

C: DTC 11 FRONT ABS WHEEL SPEED SENSOR RH SIGNAL

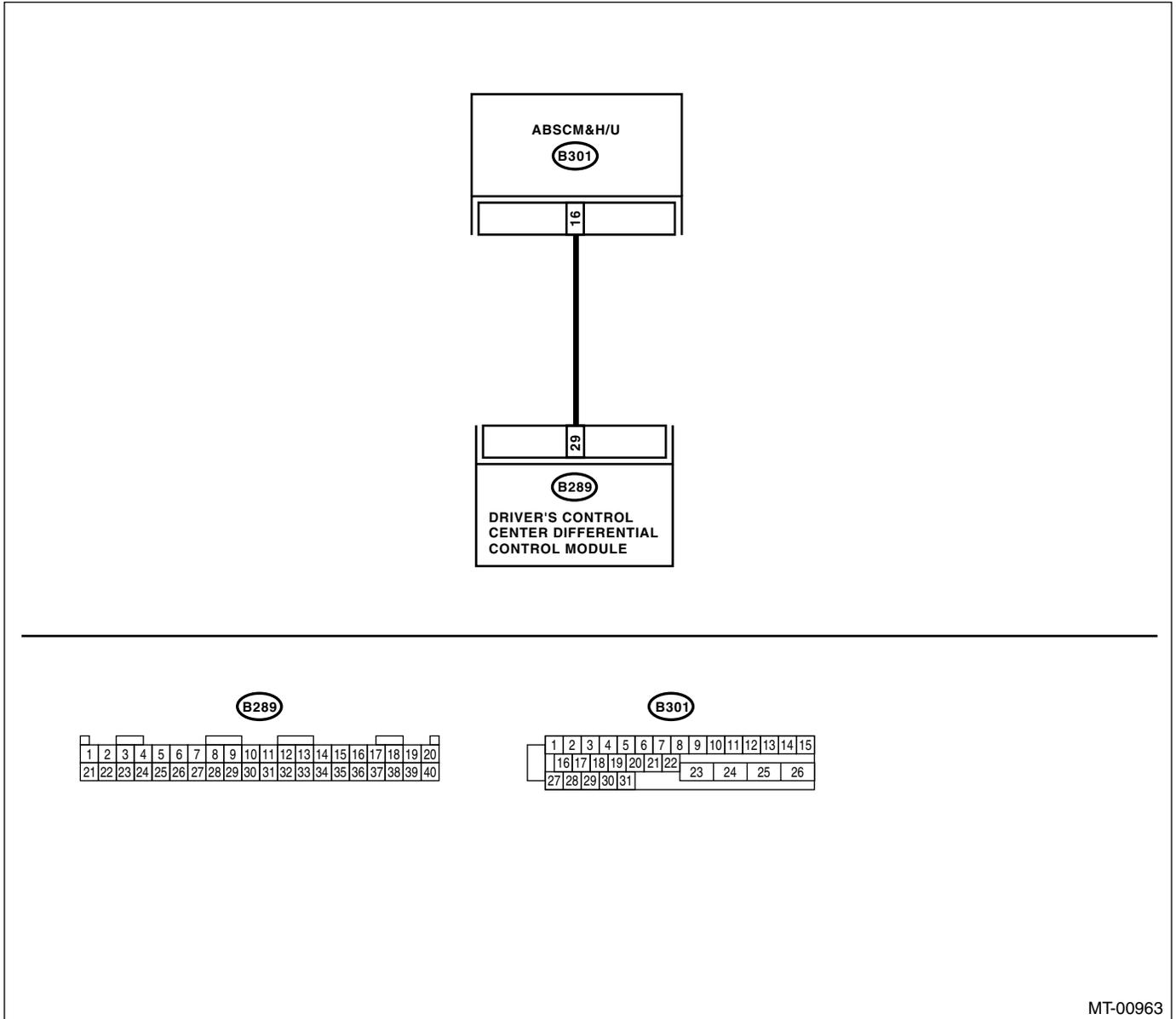
DIAGNOSIS:

Front ABS wheel speed sensor RH signal circuit is open or shorted.

TROUBLE SYMPTOM:

Tight corner braking condition occurs.

WIRING DIAGRAM:



MT-00963

Step	Check	Yes	No
1 CHECK ABSCM&H/U.	Is the DTC of front ABS wheel speed sensor RH displayed on ABS self diagnosis test mode?	Check with referring to DTC section of ABS. <Ref. to ABS-23, LIST, List of Diagnostic Trouble Code (DTC).>	Go to step 2.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
<p>2 CHECK HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ABSCM&H/U. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of driver's control center differential control module and ABSCM&H/U. 3) Measure the resistance of harness between driver's control center differential control module and ABSCM&H/U harness connector. Connector & terminal (B289) No. 29 — (B301) No. 16:</p>	<p>Is the resistance less than 1 Ω?</p>	<p>Go to step 3.</p>	<p>Repair the open harness between driver's control center differential control module and ABSCM&H/U.</p>
<p>3 CHECK HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ABSCM&H/U. Measure the resistance of harness between harness connector of driver's control center differential control module and chassis ground. Connector & terminal (B289) No. 29 — Chassis ground:</p>	<p>Is the resistance more than 1 $M\Omega$?</p>	<p>Go to step 4.</p>	<p>Repair the short of harness between driver's control center differential control module and ABSCM&H/U.</p>
<p>4 CHECK BATTERY SHORT OF HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ABSCM&H/U. 1) Connect all the harness connectors. 2) Turn the ignition switch to ON. 3) Measure the voltage of harness between harness connector of driver's control center differential control module and chassis ground. Connector & terminal (B289) No. 29 (+) — Chassis ground (-):</p>	<p>Is the voltage less than 1 V?</p>	<p>Go to step 5.</p>	<p>Repair the short of harness between driver's control center differential control module and ABSCM&H/U.</p>
<p>5 CHECK ABS WHEEL SPEED SENSOR SIGNAL. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of driver's control center differential control module. 3) Lift-up the vehicle and place safety stands. NOTE: Raise all wheels off floor. 4) Connect the oscilloscope to terminal of driver's control center differential control module connector. Connector & terminal Positive probe; (B289) No. 29: Ground lead; (B289) No. 36: 5) Start the engine, and drive the wheels slowly. NOTE: The speed difference between front and rear wheels may light the ABS warning light, but this indicates no malfunction. When AT control diagnosis is finished, perform the ABS memory clearance procedure of on-board diagnostics system. <Ref. to ABS-21, Clear Memory Mode.> 6) Measure the signal voltage indicated on oscilloscope.</p>	<p>Is the voltage less than 1 V \leftarrow more than 8 V?</p>	<p>Go to step 6.</p>	<p>Check the ABSCM&H/U.</p>

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

	Step	Check	Yes	No
6	CHECK POOR CONTACT IN HARNESS CONNECTORS.	Is there any poor contact in harness connector?	Repair the poor contact.	Replace the driver's control center differential control module.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

D: DTC 12 FRONT ABS WHEEL SPEED SENSOR LH SIGNAL

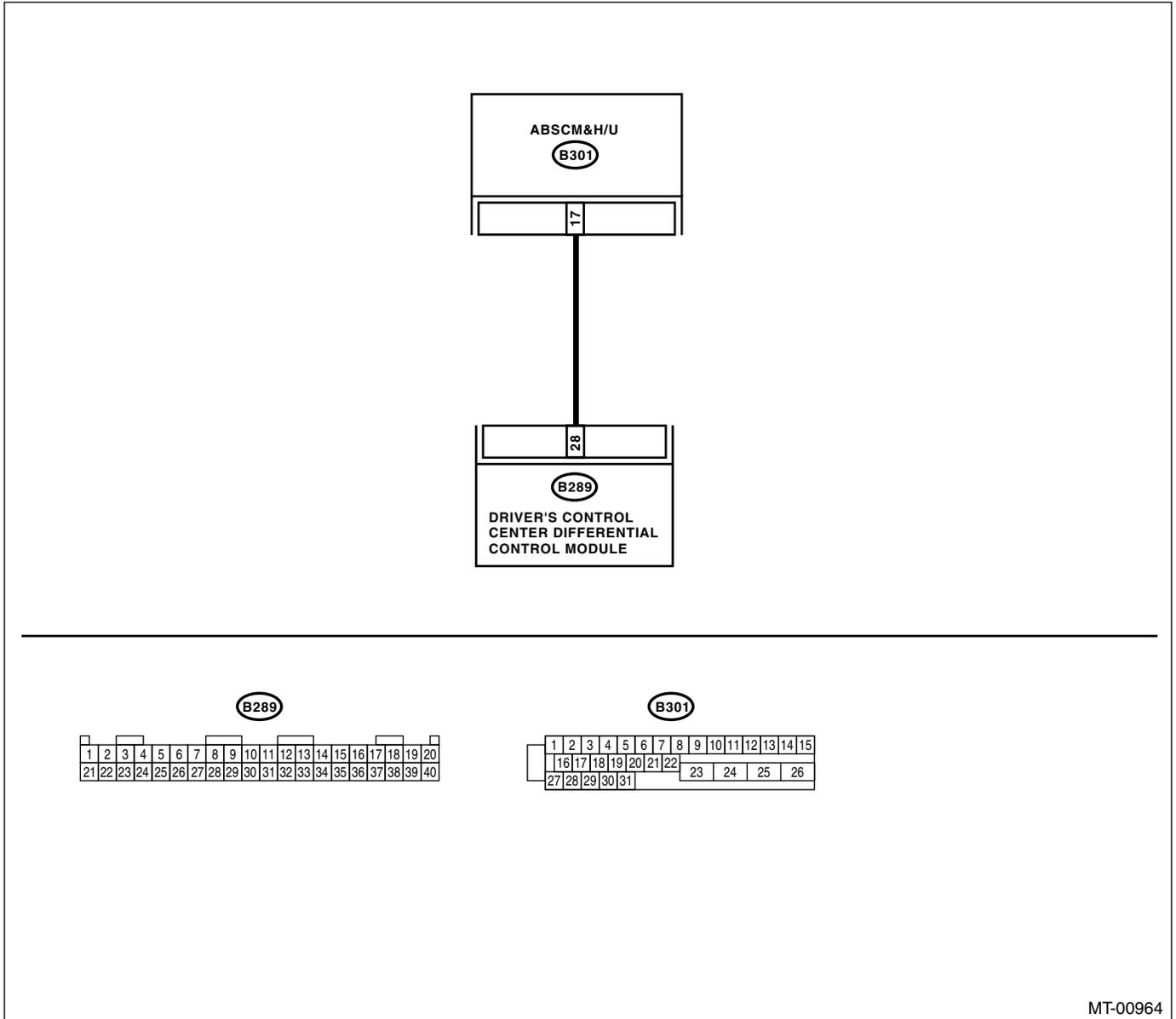
DIAGNOSIS:

Front ABS wheel speed sensor LH signal circuit is open or shorted.

TROUBLE SYMPTOM:

Tight corner braking condition occurs.

WIRING DIAGRAM:



Step	Check	Yes	No	
1	CHECK ABSCM&H/U.	Is the DTC of front ABS wheel speed sensor LH displayed on ABS self diagnosis test mode?	Check with referring to DTC section of ABS. <Ref. to ABS-23, LIST, List of Diagnostic Trouble Code (DTC).>	Go to step 2.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
<p>2 CHECK HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ABSCM&H/U.</p> <p>1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of driver's control center differential control module and ABSCM&H/U. 3) Measure the resistance of harness between driver's control center differential control module and ABSCM&H/U harness connector.</p> <p>Connector & terminal (B289) No. 28 — (B301) No. 17:</p>	<p>Is the resistance less than 1 Ω?</p>	Go to step 3.	Repair the open harness between driver's control center differential control module and ABSCM&H/U.
<p>3 CHECK HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ABSCM&H/U.</p> <p>Measure the resistance of harness between harness connector of driver's control center differential control module and chassis ground.</p> <p>Connector & terminal (B289) No. 28 — Chassis ground:</p>	<p>Is the resistance more than 1 $M\Omega$?</p>	Go to step 4.	Repair the short of harness between driver's control center differential control module and ABSCM&H/U.
<p>4 CHECK BATTERY SHORT OF HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ABSCM&H/U.</p> <p>1) Connect all the harness connectors. 2) Turn the ignition switch to ON. 3) Measure the voltage of harness between harness connector of driver's control center differential control module and chassis ground.</p> <p>Connector & terminal (B289) No. 28 (+) — Chassis ground (-):</p>	<p>Is the voltage less than 1 V?</p>	Go to step 5.	Repair the short of harness between driver's control center differential control module and ABSCM&H/U.
<p>5 CHECK ABS WHEEL SPEED SENSOR SIGNAL.</p> <p>1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of driver's control center differential control module. 3) Lift-up the vehicle and place safety stands.</p> <p>NOTE: Raise all wheels off floor. 4) Connect the oscilloscope to terminal of driver's control center differential control module connector.</p> <p>Connector & terminal Positive probe; (B289) No. 28: Ground lead; (B289) No. 36:</p> <p>5) Start the engine, and drive the wheels slowly.</p> <p>NOTE: The speed difference between front and rear wheels may light the ABS warning light, but this indicates no malfunction. When AT control diagnosis is finished, perform the ABS memory clearance procedure of on-board diagnostics system. <Ref. to ABS-21, Clear Memory Mode.></p> <p>6) Measure the signal voltage indicated on oscilloscope.</p>	<p>Is the voltage less than 1 V \leftarrow more than 8 V?</p>	Go to step 6.	Check the ABSCM&H/U.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

	Step	Check	Yes	No
6	CHECK POOR CONTACT IN HARNESS CONNECTORS.	Is there any poor contact in harness connector?	Repair the poor contact.	Replace the driver's control center differential control module.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

E: DTC 13 REAR ABS WHEEL SPEED SENSOR RH SIGNAL

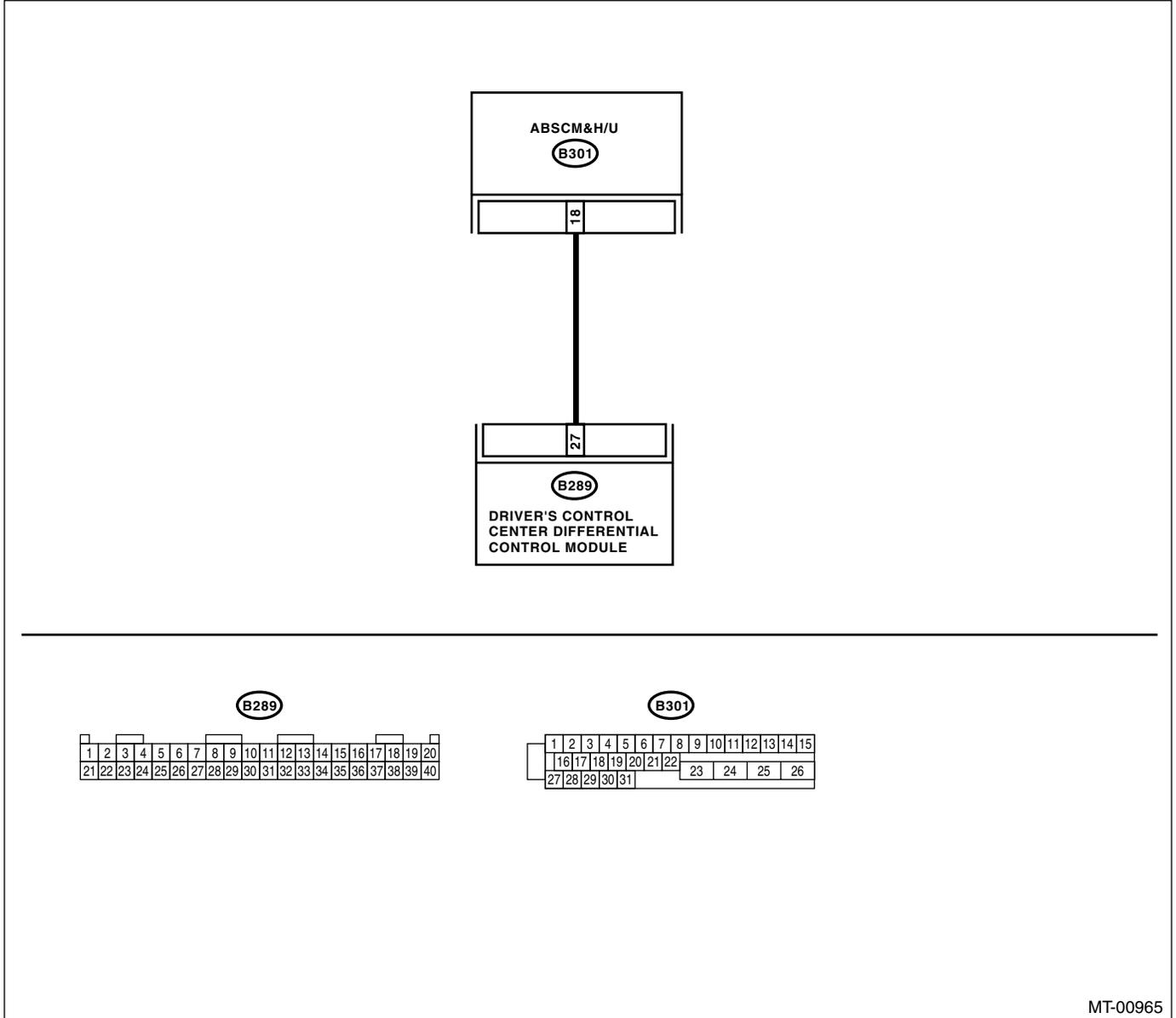
DIAGNOSIS:

Rear ABS wheel speed sensor RH signal circuit is open or shorted.

TROUBLE SYMPTOM:

Tight corner braking condition occurs.

WIRING DIAGRAM:



Step	Check	Yes	No
1 CHECK ABSCM&H/U.	Is the DTC of rear ABS wheel speed sensor RH displayed on ABS self diagnosis test mode?	Check with referring to DTC section of ABS. <Ref. to ABS-23, LIST, List of Diagnostic Trouble Code (DTC).>	Go to step 2.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
<p>2</p> <p>CHECK HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ABSCM&H/U.</p> <p>1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of driver's control center differential control module and ABSCM&H/U. 3) Measure the resistance of harness between driver's control center differential control module and ABSCM&H/U harness connector.</p> <p>Connector & terminal (B289) No. 27 — (B301) No. 18:</p>	<p>Is the resistance less than 1 Ω?</p>	Go to step 3.	Repair the open harness between driver's control center differential control module and ABSCM&H/U.
<p>3</p> <p>CHECK HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ABSCM&H/U.</p> <p>Measure the resistance of harness between harness connector of driver's control center differential control module and chassis ground.</p> <p>Connector & terminal (B289) No. 27 — Chassis ground:</p>	<p>Is the resistance more than 1 MΩ?</p>	Go to step 4.	Repair the short of harness between driver's control center differential control module and ABSCM&H/U.
<p>4</p> <p>CHECK BATTERY SHORT OF HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ABSCM&H/U.</p> <p>1) Connect all the harness connectors. 2) Turn the ignition switch to ON. 3) Measure the voltage of harness between harness connector of driver's control center differential control module and chassis ground.</p> <p>Connector & terminal (B289) No. 27 (+) — Chassis ground (-):</p>	<p>Is the voltage less than 1 V?</p>	Go to step 5.	Repair the short of harness between driver's control center differential control module and ABSCM&H/U.
<p>5</p> <p>CHECK ABS WHEEL SPEED SENSOR SIGNAL.</p> <p>1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of driver's control center differential control module. 3) Lift-up the vehicle and place safety stands.</p> <p>NOTE: Raise all wheels off floor.</p> <p>4) Connect the oscilloscope to terminal of driver's control center differential control module connector.</p> <p>Connector & terminal Positive probe; (B289) No. 27: Ground lead; (B289) No. 36:</p> <p>5) Start the engine, and drive the wheels slowly.</p> <p>NOTE: The speed difference between front and rear wheels may light the ABS warning light, but this indicates no malfunction. When AT control diagnosis is finished, perform the ABS memory clearance procedure of on-board diagnostics system. <Ref. to ABS-21, Clear Memory Mode.></p> <p>6) Measure the signal voltage indicated on oscilloscope.</p>	<p>Is the voltage less than 1 V \leftarrow more than 8 V?</p>	Go to step 6.	Check the ABSCM&H/U.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

	Step	Check	Yes	No
6	CHECK POOR CONTACT IN HARNESS CONNECTORS.	Is there any poor contact in harness connector?	Repair the poor contact.	Replace the driver's control center differential control module.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

F: DTC 14 REAR ABS WHEEL SPEED SENSOR LH SIGNAL

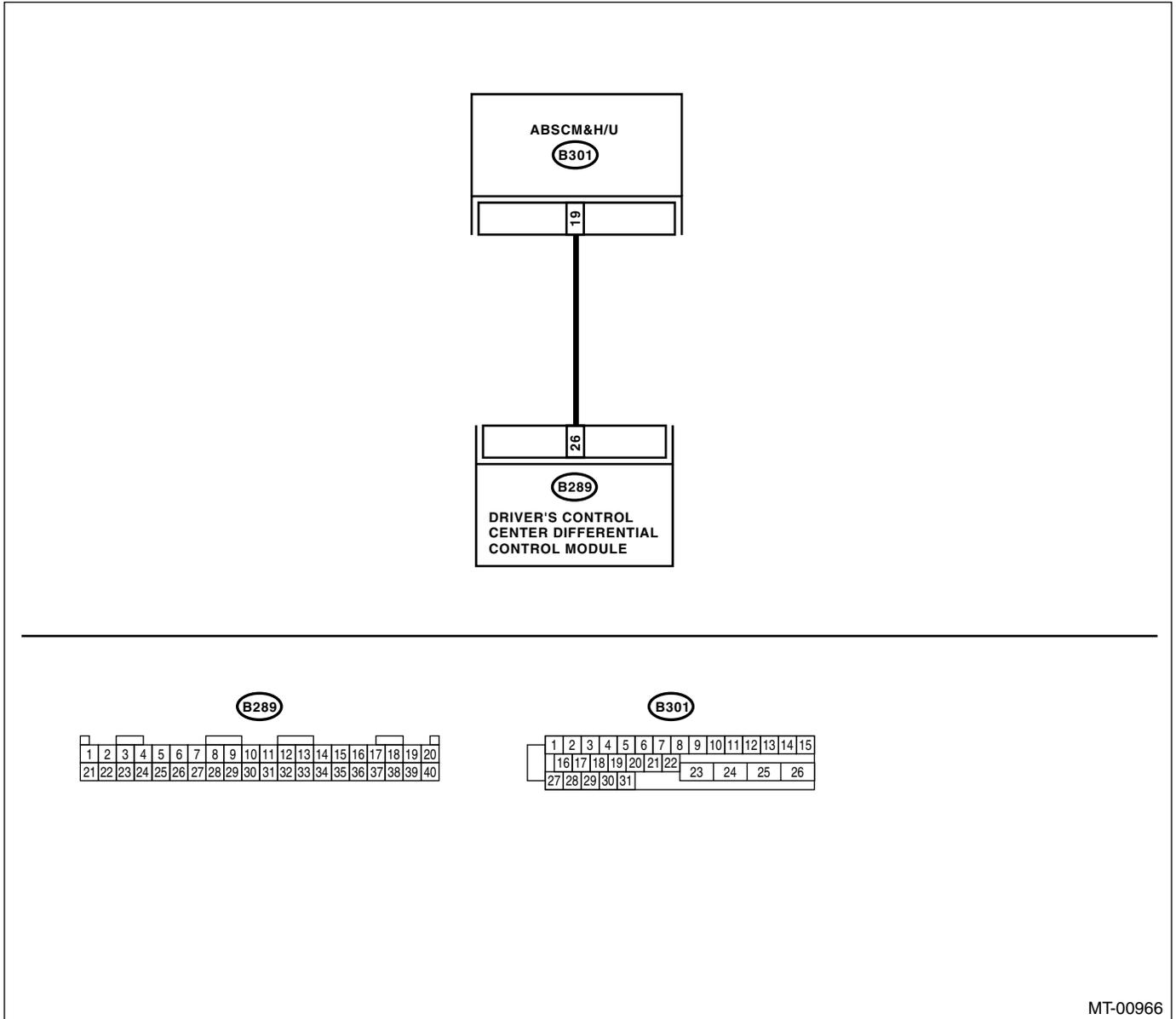
DIAGNOSIS:

Rear ABS wheel speed sensor LH signal circuit is open or shorted.

TROUBLE SYMPTOM:

Tight corner braking condition occurs.

WIRING DIAGRAM:



Step	Check	Yes	No
1	CHECK ABSCM&H/U. Is the DTC of rear ABS wheel speed sensor LH displayed on ABS self diagnosis test mode?	Check with referring to DTC section of ABS. <Ref. to ABS-23, LIST, List of Diagnostic Trouble Code (DTC).>	Go to step 2.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
<p>2</p> <p>CHECK HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ABSCM&H/U.</p> <p>1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of driver's control center differential control module and ABSCM&H/U. 3) Measure the resistance of harness between driver's control center differential control module and ABSCM&H/U harness connector.</p> <p>Connector & terminal (B289) No. 26 — (B301) No. 19:</p>	<p>Is the resistance less than 1 Ω?</p>	Go to step 3.	Repair the open harness between driver's control center differential control module and ABSCM&H/U.
<p>3</p> <p>CHECK HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ABSCM&H/U.</p> <p>Measure the resistance of harness between harness connector of driver's control center differential control module and chassis ground.</p> <p>Connector & terminal (B289) No. 26 — Chassis ground:</p>	<p>Is the resistance more than 1 $M\Omega$?</p>	Go to step 4.	Repair the short of harness between driver's control center differential control module and ABSCM&H/U.
<p>4</p> <p>CHECK BATTERY SHORT OF HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ABSCM&H/U.</p> <p>1) Connect all the harness connectors. 2) Turn the ignition switch to ON. 3) Measure the voltage of harness between harness connector of driver's control center differential control module and chassis ground.</p> <p>Connector & terminal (B289) No. 26 (+) — Chassis ground (-):</p>	<p>Is the voltage less than 1 V?</p>	Go to step 5.	Repair the short of harness between driver's control center differential control module and ABSCM&H/U.
<p>5</p> <p>CHECK ABS WHEEL SPEED SENSOR SIGNAL.</p> <p>1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of driver's control center differential control module. 3) Lift-up the vehicle and place safety stands.</p> <p>NOTE: Raise all wheels off floor.</p> <p>4) Connect the oscilloscope to terminal of driver's control center differential control module connector.</p> <p>Connector & terminal Positive probe; (B289) No. 26: Ground lead; (B289) No. 36:</p> <p>5) Start the engine, and drive the wheels slowly.</p> <p>NOTE: The speed difference between front and rear wheels may light the ABS warning light, but this indicates no malfunction. When AT control diagnosis is finished, perform the ABS memory clearance procedure of on-board diagnostics system. <Ref. to ABS-21, Clear Memory Mode.></p> <p>6) Measure the signal voltage indicated on oscilloscope.</p>	<p>Is the voltage less than 1 V \leftarrow more than 8 V?</p>	Go to step 6.	Check the ABSCM&H/U.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

	Step	Check	Yes	No
6	CHECK POOR CONTACT IN HARNESS CONNECTORS.	Is there any poor contact in harness connector?	Repair the poor contact.	Replace the driver's control center differential control module.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

G: DTC 21 ACCELERATOR POSITION SENSOR

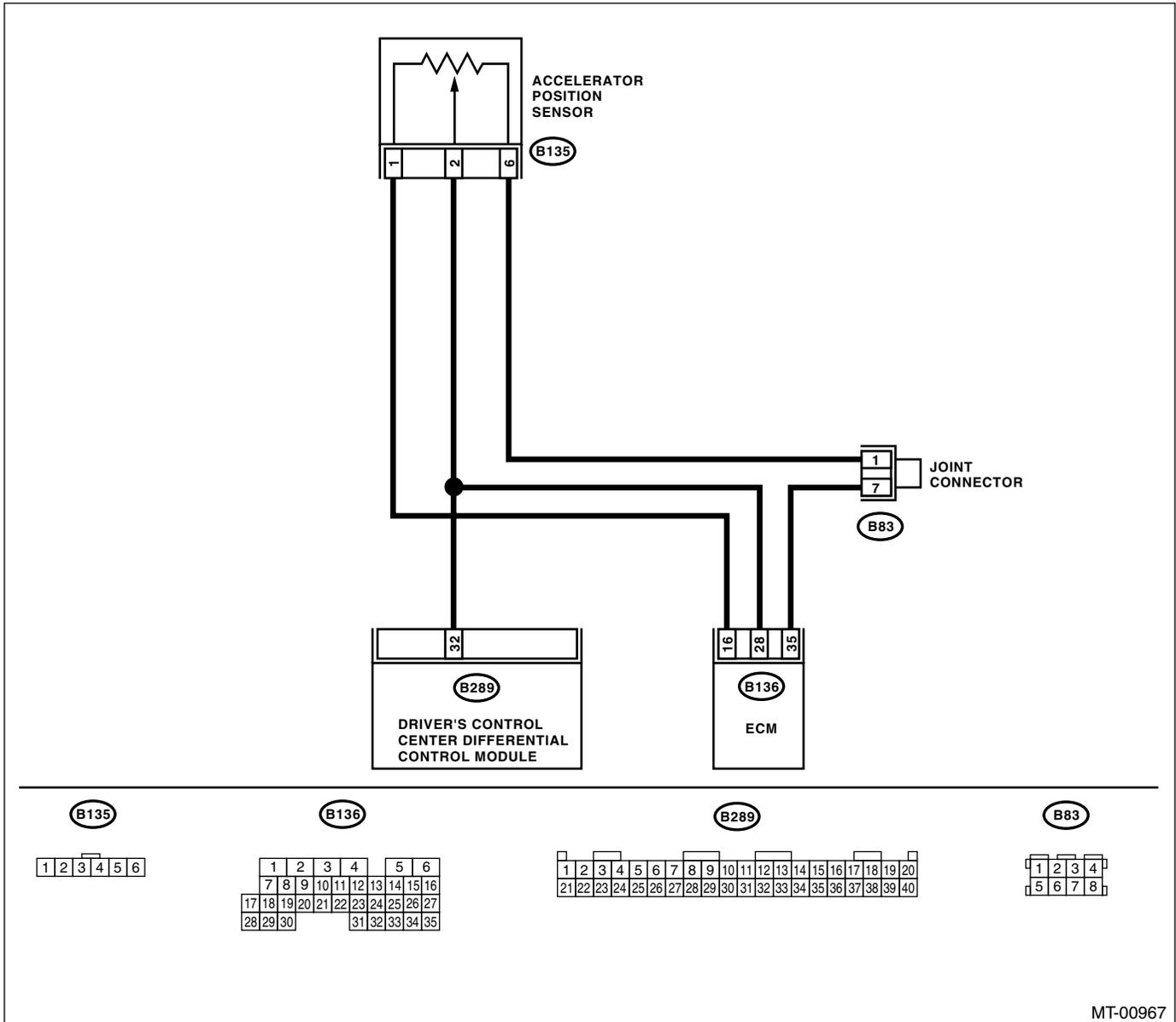
DIAGNOSIS:

The accelerator position sensor input signal circuit is open or shorted.

TROUBLE SYMPTOM:

- Tight corner braking condition occurs.
- Handling tends to oversteer.

WIRING DIAGRAM:



Step	Check	Yes	No
1	CHECK DTC. Is the DTC displayed on engine self diagnosis test mode?	Check with referring to DTC section of engine. <Ref. to EN(H4DOTC)-71, LIST, List of Diagnostic Trouble Code (DTC).>	Go to step 2.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
<p>2</p> <p>CHECK THE HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ACCELERATOR POSITION SENSOR.</p> <p>1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of driver's control center differential control module and accelerator position sensor. 3) Measure the resistance of harness between driver's control center differential control module harness connector and accelerator position sensor.</p> <p>Connector & terminal (B289) No. 32 — (B135) No. 2:</p>	<p>Is the resistance less than 1 Ω?</p>	Go to step 3.	Repair the open circuit of harness between driver's control center differential control module and accelerator position sensor.
<p>3</p> <p>CHECK THE HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ECM.</p> <p>1) Disconnect the harness connector of ECM. 2) Measure the resistance of harness between driver's control center differential control module harness connector and ECM harness connector.</p> <p>Connector & terminal (B289) No. 32 — (B136) No. 28:</p>	<p>Is the resistance less than 1 Ω?</p>	Go to step 4.	Repair the open circuit of harness between driver's control center differential control module and ECM.
<p>4</p> <p>CHECK THE HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ACCELERATOR POSITION SENSOR.</p> <p>Measure the resistance of harness between driver's control center differential control module harness connector and chassis ground.</p> <p>Connector & terminal (B289) No. 32 — Chassis ground:</p>	<p>Is the resistance more than 1 $M\Omega$?</p>	Go to step 5.	Repair the short circuit of harness between driver's control center differential control module and accelerator position sensor and ECM.
<p>5</p> <p>CHECK INPUT SIGNAL OF DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE.</p> <p>1) Connect the connectors to driver's control center differential control module and accelerator position sensor. 2) Turn the ignition switch to ON (engine OFF). 3) Release the accelerator pedal. 4) Measure the voltage between driver's control center differential control module harness connector and chassis ground.</p> <p>Connector & terminal (B289) No. 32 (+) — Chassis ground (-):</p>	<p>Is the voltage 0.3 — 1.8 V?</p>	Go to step 6.	Go to step 7.
<p>6</p> <p>CHECK INPUT SIGNAL OF DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE.</p> <p>1) Fully depress the accelerator pedal. 2) Measure the voltage between driver's control center differential control module harness connector and chassis ground.</p> <p>Connector & terminal (B289) No. 32 (+) — Chassis ground (-):</p>	<p>Is the voltage 2.8 — 4.7 V?</p>	Go to step 8.	Go to step 7.
<p>7</p> <p>CHECK THE POOR CONTACT.</p>	<p>Is there any poor contact in accelerator position sensor circuit?</p>	Repair the poor contact.	Replace the driver's control center differential control module.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

	Step	Check	Yes	No
8	CHECK THE POOR CONTACT.	Is there any poor contact in accelerator position sensor circuit?	Repair the poor contact.	Check the ECM.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

H: DTC 22 LATERAL G SENSOR

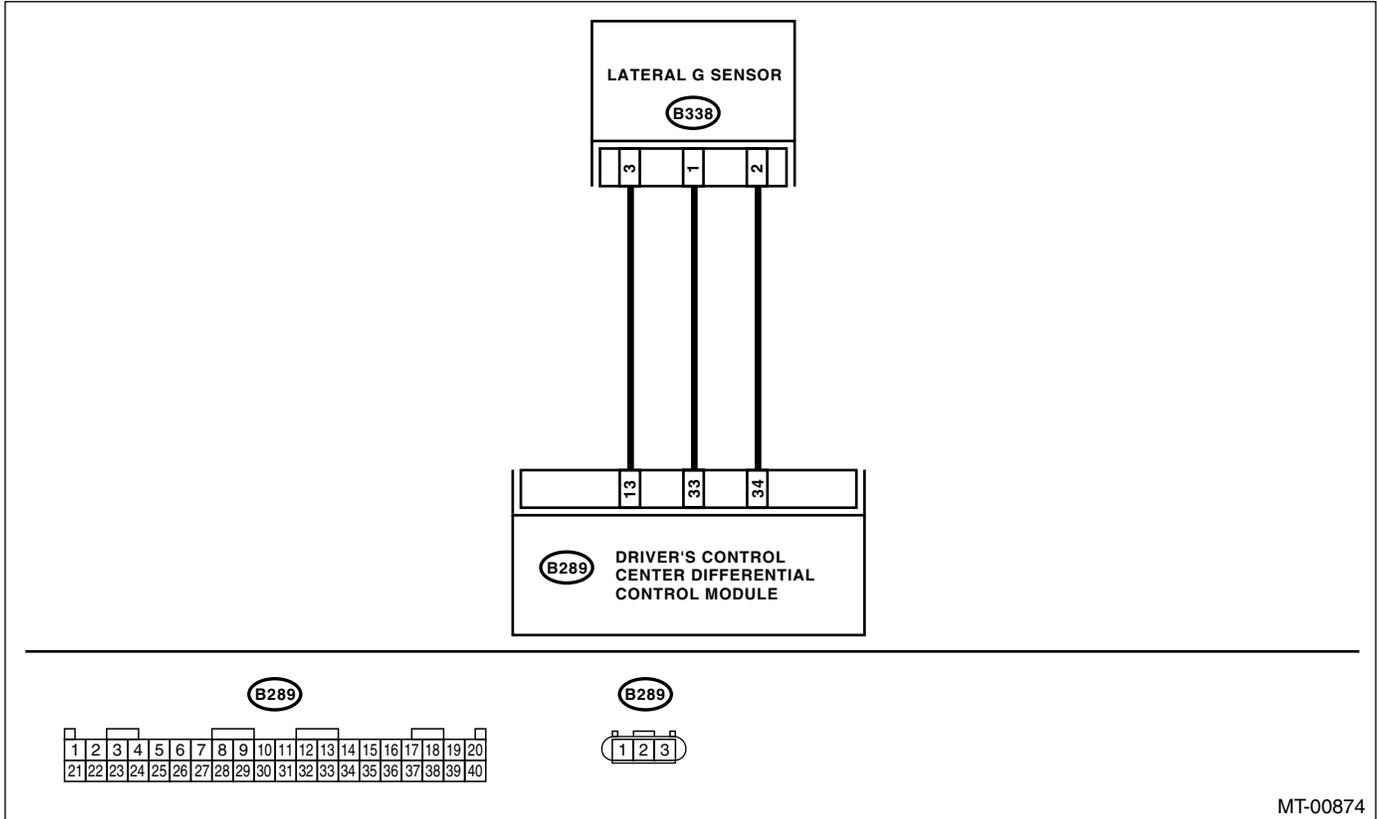
DIAGNOSIS:

The lateral G sensor input signal circuit is open or shorted.

TROUBLE SYMPTOM:

Handling tends to understeer at high speed cornering.

WIRING DIAGRAM:



MT-00874

Step	Check	Yes	No
<p>1</p> <p>CHECK HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE CONNECTOR AND LATERAL G SENSOR CONNECTOR.</p> <p>1) Turn the ignition switch to OFF.</p> <p>2) Disconnect the connector from driver's control center differential control module and lateral G sensor.</p> <p>3) Measure the resistance of harness between driver's control center differential control module connector and lateral G sensor connector.</p> <p>Connector & terminal</p> <p>(B289) No. 33 — (B338) No. 1:</p> <p>(B289) No. 34 — (B338) No. 2:</p> <p>(B289) No. 13 — (B338) No. 3:</p>	<p>Is the resistance less than 1 Ω?</p>	<p>Go to step 2.</p>	<p>Repair the open harness between driver's control center differential control module connector and lateral G sensor connector.</p>

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
<p>2 CHECK THE HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE CONNECTOR AND LATERAL G SENSOR CONNECTOR. Measure the resistance between driver's control center differential control module harness connector and chassis ground. <i>Connector & terminal</i> (B289) No. 33 — Chassis ground: (B289) No. 34 — Chassis ground: (B289) No. 13 — Chassis ground:</p>	Is the resistance more than 1 MΩ?	Go to step 3.	Repair the short of harness between driver's control center differential control module connector and lateral G sensor connector.
<p>3 CHECK THE LATERAL G SENSOR. 1) Remove the lateral G sensor from body. 2) Connect the connector to lateral G sensor. 3) Connect the connector to driver's control center differential control module. 4) Turn the ignition switch to ON. 5) Measure the voltage between lateral G sensor terminals when the lateral G sensor is horizontal. <i>Connector & terminal</i> (B338) No. 1 (+) — No. 2 (-):</p>	Is the voltage 2.3 — 2.7 V?	Go to step 4.	Replace the lateral G sensor.
<p>4 CHECK THE G SENSOR. Measure the voltage between lateral G sensor terminals when the lateral G sensor connector is tilted 90° to right. <i>Connector & terminal</i> (B338) No. 1 (+) — No. 2 (-):</p>	Is the voltage 3.5 — 4.1 V?	Go to step 5.	Replace the lateral G sensor.
<p>5 CHECK THE G SENSOR. Measure the voltage between lateral G sensor terminals when lateral G sensor connector is tilted 90° to left. <i>Connector & terminal</i> (B338) No. 1 (+) — No. 2 (-):</p>	Is the voltage 0.8 — 1.5 V?	Go to step 6.	Replace the lateral G sensor.
<p>6 CHECK THE POOR CONTACT OF CONNECTOR.</p>	Is there any poor contact in connector between driver's control center differential control module and lateral G sensor.	Repair the poor contact.	Replace the driver's control center differential control module.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

I: DTC 23 CHECK CENTER DIFFERENTIAL.

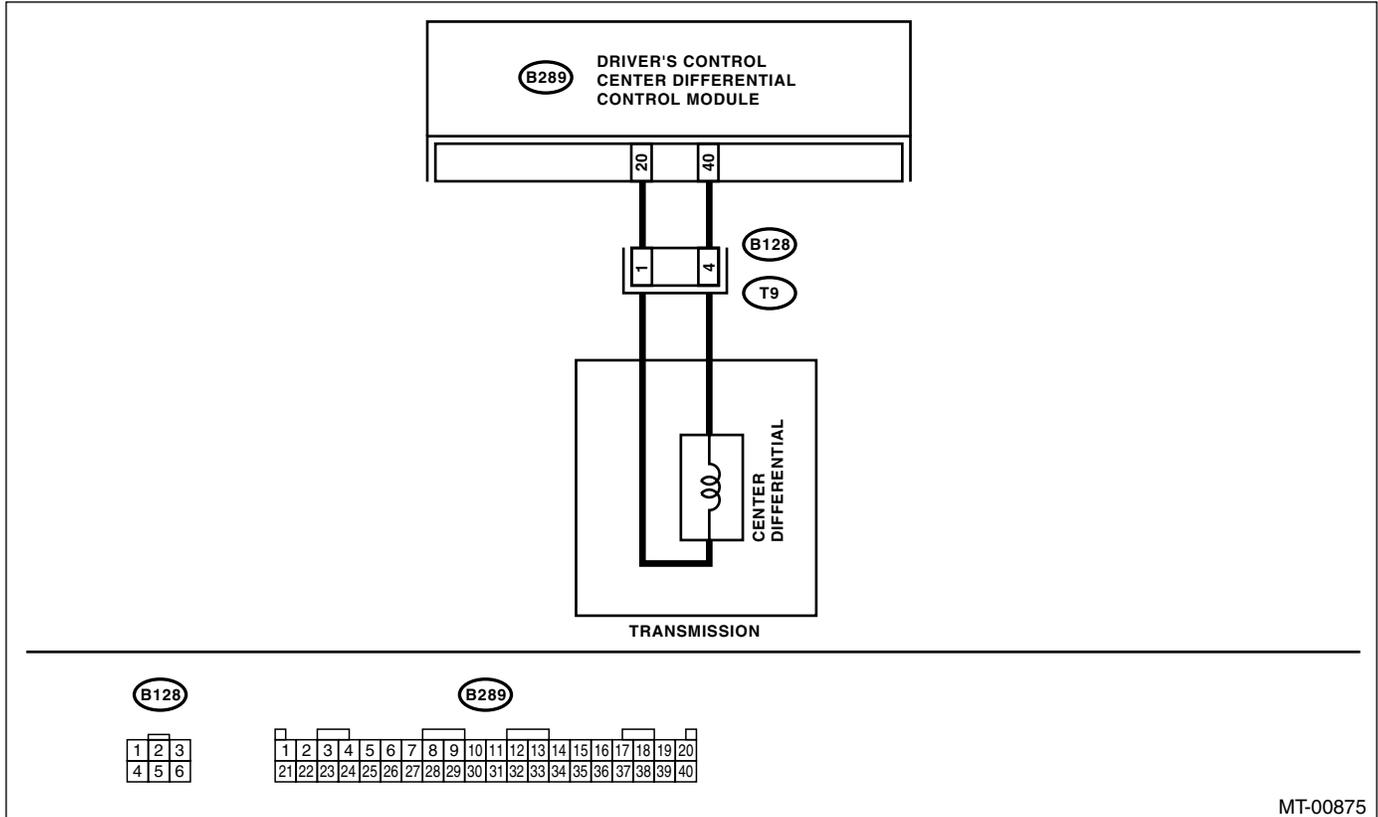
DIAGNOSIS:

Output signal circuit of center differential is open or shorted.

TROUBLE SYMPTOM:

- Center differential does not operate.
- Lock ratio of center differential does not operate, or malfunction occurs.
- Tight corner braking condition occurs.
- Handling tends to oversteer.

WIRING DIAGRAM:



MT-00875

Step	Check	Yes	No
<p>1</p> <p>CHECK THE HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND TRANSMISSION HARNESS.</p> <p>1) Turn the ignition switch to OFF.</p> <p>2) Disconnect the harness connector of driver's control center differential control module.</p> <p>3) Disconnect the transmission harness connector and bulk harness connector.</p> <p>4) Measure the resistance of harness between driver's control center differential control module harness connector and transmission harness connector.</p> <p>Connector & terminal (B289) No. 20 — (B128) No. 1: (B289) No. 40 — (B128) No. 4:</p>	<p>Is the resistance less than 1 Ω?</p>	<p>Go to step 2.</p>	<p>Repair the open circuit of bulk harness between driver's control center differential control module and transmission harness.</p>

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
<p>2</p> <p>CHECK THE HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND TRANSMISSION HARNESS.</p> <p>Measure the resistance between driver's control center differential control module harness connector and chassis ground.</p> <p>Connector & terminal (B289) No. 20 — Chassis ground: (B289) No. 40 — Chassis ground:</p>	<p>Is the resistance more than 1 MΩ?</p>	<p>Go to step 3.</p>	<p>Repair the short circuit of bulk harness between driver's control center differential control module and transmission harness.</p>
<p>3</p> <p>CHECK THE CENTER DIFFERENTIAL.</p> <p>Measure the resistance between transmission harness connector terminals.</p> <p>Connector & terminal (T9) No. 1 — No. 4:</p>	<p>Is the resistance 1.0 — 2.0 Ω?</p>	<p>Go to step 4.</p>	<p>Replace the center differential.</p>
<p>4</p> <p>CHECK THE OUTPUT SIGNAL OF DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE.</p> <p>1)Connect all the harness connectors. 2)Turn the ignition switch to ON. (engine OFF) 3)Release the parking brake. 4)Set the center differential control dial to differential lock. 5)Measure the voltage between driver's control center differential control module and harness connector.</p> <p>Connector & terminal (B289) No. 20 (+) — (B289) No. 40 (-):</p>	<p>Is the voltage 6.0 — 7.0 V?</p>	<p>Go to step 5.</p>	<p>Check the power supply circuit. <Ref. to 6MT-18, DTC CANNOT BE CALLED UP, Diagnostic Procedure with Diagnostic Trouble Code (DTC).></p>
<p>5</p> <p>CHECK THE OUTPUT SIGNAL OF DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE.</p> <p>1)Turn the center differential control dial from differential lock to differential free position. 2)Measure the voltage between driver's control center differential control module and harness connector.</p> <p>Connector & terminal (B289) No. 20 (+) — (B289) No. 40 (-):</p>	<p>Does the voltage change smoothly?</p>	<p>Circuit is already returned to normal condition this time though the indicator light illuminates. A temporary poor connector or harness may be the case. Repair the poor contact in connector or harness of driver's control center differential control module and transmission harness. Check the poor contact in power supply circuit, too.</p>	<p>Repair the power supply circuit. <Ref. to 6MT-18, DTC CANNOT BE CALLED UP, Diagnostic Procedure with Diagnostic Trouble Code (DTC).></p>

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

J: DTC 24 CHECK CENTER DIFFERENTIAL CONTROL DIAL.

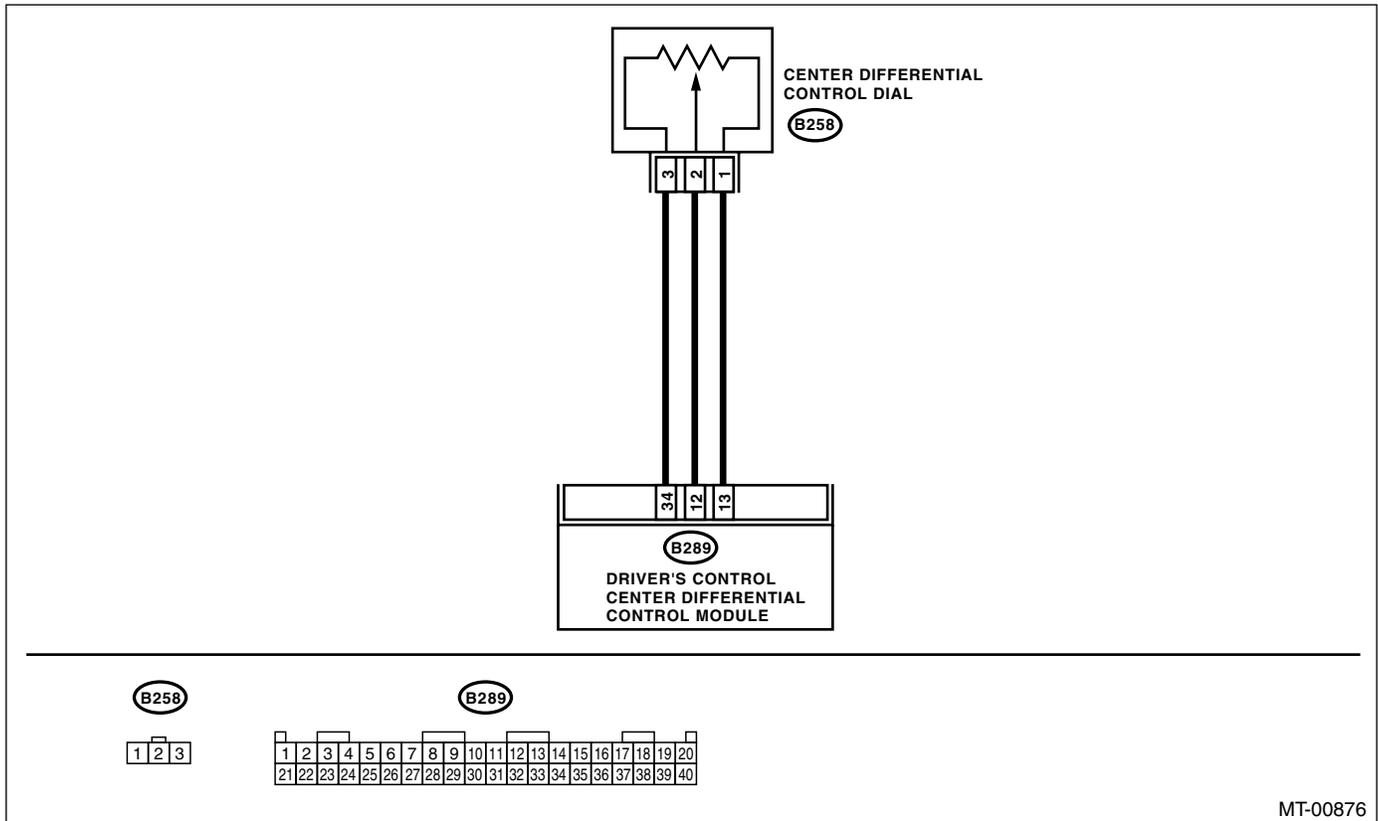
DIAGNOSIS:

Input signal circuit of center differential control dial is open or shorted.

TROUBLE SYMPTOM:

- Indicator light does not operate though setting the center differential control dial.
- Torque characteristics do not change.

WIRING DIAGRAM:



Step	Check	Yes	No	
1	<p>CHECK THE HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND CENTER DIFFERENTIAL CONTROL DIAL.</p> <p>1) Turn the ignition switch to OFF.</p> <p>2) Disconnect the connector of driver's control center differential control module and center differential control dial.</p> <p>3) Measure the resistance of harness between driver's control center differential control module and center differential control dial harness connector.</p> <p>Connector & terminal</p> <p>(B258) No. 1 — (B289) No. 13:</p> <p>(B258) No. 2 — (B289) No. 12:</p> <p>(B258) No. 3 — (B289) No. 34:</p>	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit between driver's control center differential control module and center differential control dial.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
<p>2</p> <p>CHECK THE HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND CENTER DIFFERENTIAL CONTROL DIAL.</p> <p>Measure the resistance between driver's control center differential control module harness connector and chassis ground.</p> <p>Connector & terminal (B289) No. 13 — Chassis ground: (B289) No. 12 — Chassis ground: (B289) No. 34 — Chassis ground:</p>	<p>Is the resistance more than 1 MΩ?</p>	Go to step 3.	Repair the short circuit between driver's control center differential control module and center differential control dial.
<p>3</p> <p>CHECK THE CENTER DIFFERENTIAL CONTROL DIAL.</p> <p>1)Remove the center differential control dial. 2)Measure the resistance between center differential control dial connectors.</p> <p>Terminals No. 1 — No. 3:</p>	<p>Is the resistance 7.5 — 12.5 kΩ?</p>	Go to step 4.	Replace the driver's control dial.
<p>4</p> <p>CHECK THE CENTER DIFFERENTIAL CONTROL DIAL.</p> <p>Measure the resistance between center differential control dial connectors.</p> <p>Terminals No. 1 — No. 2:</p>	<p>Does the resistance change smoothly when setting the dial from differential lock to differential free?</p>	Go to step 5.	Replace the center differential control dial.
<p>5</p> <p>CHECK THE OUTPUT POWER SUPPLY OF DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE.</p> <p>1)Connect all the harness connectors. 2)Turn the ignition switch to ON. (engine OFF) 3)Set the manual mode switch to manual mode. 4)Measure the voltage between driver's control center differential control module harness connector and chassis ground.</p> <p>Connector & terminal (B289) No. 13 (+) — (B289) No. 34 (-):</p>	<p>Is the voltage approx. 5 V?</p>	Go to step 6.	Replace the driver's control center differential control module.
<p>6</p> <p>CHECK POOR CONTACT IN HARNESS CONNECTORS.</p>	<p>Is there any poor contact in harness connector of center differential control dial circuit?</p>	Repair the poor contact of harness connector.	Replace the driver's control center differential control module.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

K: DTC 31 MANUAL MODE SWITCH

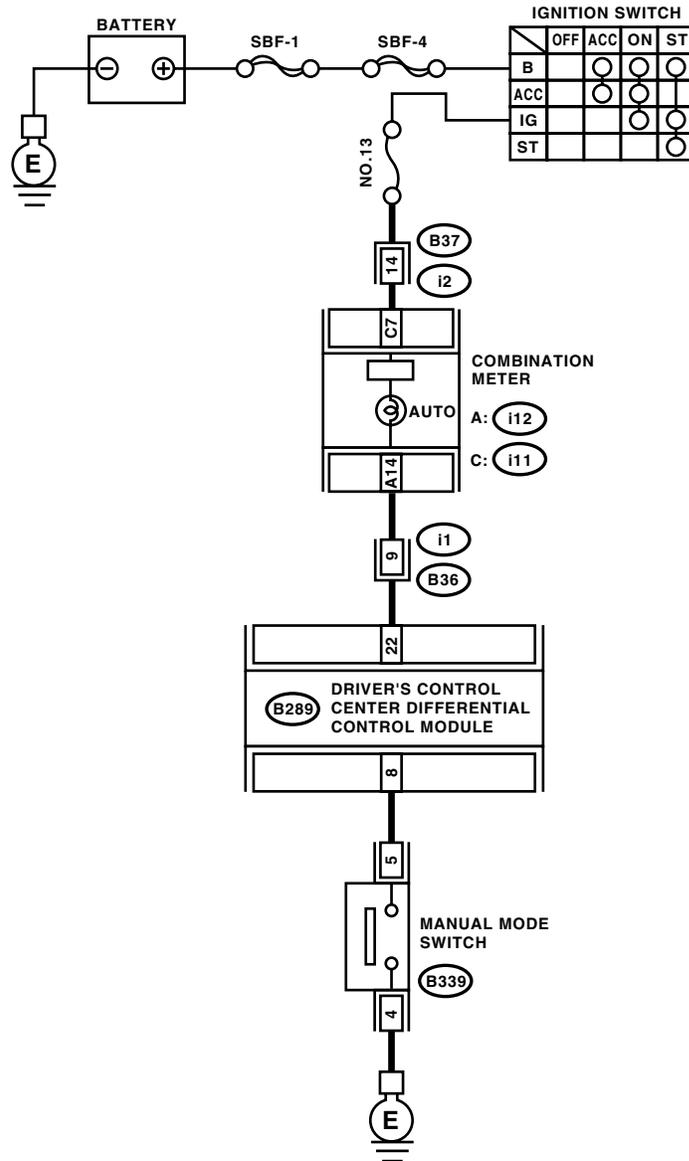
DIAGNOSIS:

Input signal circuit of manual mode switch circuit is open or shorted.

TROUBLE SYMPTOM:

- Driver's control center differential can not be manual mode. Or can not be auto mode.
- AUTO indicator does not illuminate, or does not go off.

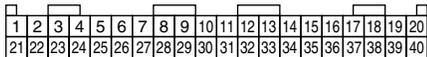
WIRING DIAGRAM:



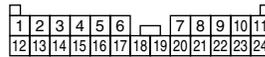
B339



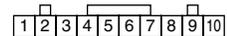
B289



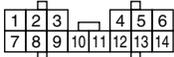
i1



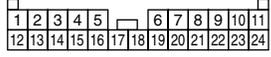
c: i11



A: i12



i2



DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK OPERATION OF MANUAL MODE SWITCH. Set the manual mode switch to auto mode.	Does the AUTO indicator light in combination meter illuminate?	Go to step 8.	Go to step 2.
2 CHECK AUTO INDICATOR LIGHT. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of driver's control center differential control module. 3) Turn the ignition switch to ON. (Engine OFF) 4) Short between the driver's control center differential control module and chassis ground. Connector & terminal (B289) No. 22 — Chassis ground:	Does the AUTO indicator light in combination meter illuminate?	Go to step 8.	Go to step 3.
3 CHECK POWER SUPPLY OF COMBINATION METER. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of combination meter. 3) Turn the ignition switch to ON. (Engine OFF) 4) Measure the voltage between combination meter harness connector and chassis ground. Connector & terminal (i11) No. 7 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 4.	Check and repair the open and short of harness between battery and combination meter, and poor contact of harness connector.
4 CHECK THE HARNESS BETWEEN COMBINATION METER AND DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of combination meter. 3) Measure the resistance between combination meter harness connector and driver's control center differential control module harness connector. Connector & terminal (i12) No. 14 — (B289) No. 22:	Is the resistance less than 1 Ω ?	Go to step 5.	Repair the open circuit of harness between combination meter harness connector and driver's control center differential control module harness connector, and poor contact of harness connector.
5 CHECK THE HARNESS BETWEEN COMBINATION METER AND DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE. Measure the resistance between driver's control center differential control module harness connector and chassis ground. Connector & terminal (B289) No. 22 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 6.	Repair the short circuit of harness between combination meter harness connector and driver's control center differential control module harness connector.
6 CHECK HARNESS CONNECTOR POOR CONTACT.	Is there any poor contact in the circuit between combination meter and driver's control module?	Repair the poor contact.	Go to step 7.
7 CHECK AUTO INDICATOR LIGHT. 1) Connect the harness connector of combination meter. 2) Short between the driver's control center differential control module harness connector and chassis ground. Connector & terminal (B289) No. 22 — Chassis ground:	Does the AUTO indicator light light up?	Replace the driver's control center differential control module.	Replace the combination meter.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
<p>8 CHECK GROUND CIRCUIT OF MANUAL MODE SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the manual mode switch connector. 3) Measure the resistance between manual mode switch harness connector and chassis ground.</p> <p>Connector & terminal (B339) No. 4 — Chassis ground:</p>	Is the resistance more than 1 MΩ?	Repair the open circuit of harness between manual mode switch harness connector and chassis ground.	Go to step 9.
<p>9 CHECK THE HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND MANUAL MODE SWITCH. 1) Disconnect the driver's control center differential control module harness connector. 2) Measure the resistance of harness between driver's control center differential control module and manual mode switch.</p> <p>Connector & terminal (B289) No. 8 — (B339) No. 5:</p>	Is the resistance less than 1 Ω?	Go to step 10.	Repair the open circuit of harness between driver's control center differential control module and manual mode switch.
<p>10 CHECK THE HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND MANUAL MODE SWITCH. Measure the resistance of harness between driver's control center differential control module and chassis ground.</p> <p>Connector & terminal (B289) No. 8 — Chassis ground:</p>	Is the resistance more than 1 MΩ?	Go to step 11.	Repair the short circuit of harness between driver's control center differential control module and manual mode switch.
<p>11 CHECK THE MANUAL MODE SWITCH. 1) Remove the manual mode switch. 2) Measure the resistance of between manual mode switch connectors.</p> <p>Terminals No. 4 — No. 5:</p>	Is the resistance more than 1 MΩ?	Go to step 12.	Replace the manual mode switch.
<p>12 CHECK THE MANUAL MODE SWITCH. 1) Keep depressing the manual mode switch. 2) Measure the resistance of between manual mode switch connectors.</p> <p>Terminals No. 4 — No. 5:</p>	Is the resistance less than 1 Ω?	Go to step 13.	Replace the manual mode switch.
<p>13 CHECK THE INPUT SIGNAL OF DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE. 1) Install the manual mode switch. 2) Connect the harness connector of driver's control center differential control module. 3) Turn the ignition switch to ON. (engine OFF) 4) Measure the voltage between driver's control center differential control module and chassis ground.</p> <p>Connector & terminal (B289) No. 8 (+) — Chassis ground (-):</p>	Is the voltage more than 4.3 V?	Go to step 14.	Replace the driver's control center differential control module.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
14 CHECK THE INPUT SIGNAL OF DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE. 1)Keep depressing the manual mode switch. 2)Measure the voltage between driver's control center differential control module and chassis ground. Connector & terminal (B289) No. 8 (+) — Chassis ground (-):	Is the voltage less than 0.1 V?	Go to step 15 .	Replace the driver's control center differential control module.
15 CHECK POOR CONTACT IN HARNESS CONNECTOR.	Is there any poor contact in manual mode switch circuit?	Repair the poor contact.	Replace the driver's control center differential control module.

L: DTC 32 CHECK PARKING BRAKE SWITCH

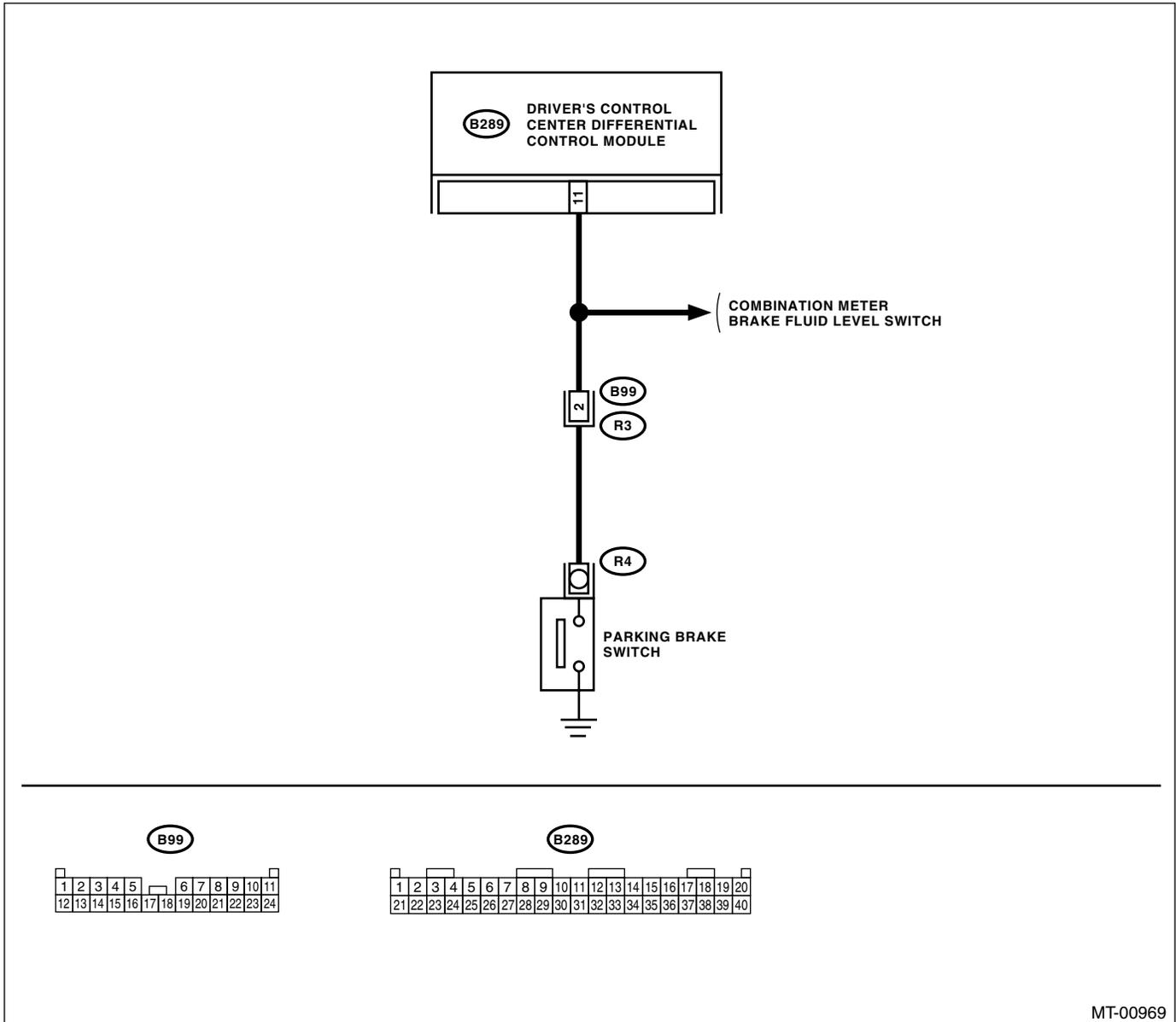
DIAGNOSIS:

Input signal circuit of parking brake switch is open or shorted.

TROUBLE SYMPTOM:

- Differential does not tend to be free though apply the parking brake.
- Differential stays free by releasing the parking brake.

WIRING DIAGRAM:



MT-00969

Step	Check	Yes	No
1 CHECK THE PARKING BRAKE SWITCH CIRCUIT. 1) Turn the ignition switch to ON. 2) Start the engine. 3) Apply the parking brake.	Does the parking brake warning light illuminate?	Go to step 2.	Check the parking pilot & brake fluid warning light circuit.
2 CHECK THE PARKING BRAKE SWITCH CIRCUIT. Release the parking brake.	Does the parking brake warning light turn OFF?	Go to step 3.	Check the brake fluid level and ABS circuit.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
<p>3 CHECK THE HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND PARKING BRAKE SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of driver's control center differential control module and parking brake switch. 3) Measure the resistance of harness between driver's control center differential control module and parking brake switch. Connector & terminal (B289) No. 11 — (R4) No. 1:</p>	<p>Is the resistance less than 1 Ω?</p>	<p>Go to step 4.</p>	<p>Repair the open circuit of harness and poor contact of connector.</p>
<p>4 CHECK THE HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND PARKING BRAKE SWITCH. Measure the resistance between driver's control center differential control module harness connector and chassis ground. Connector & terminal (B289) No. 11 — Chassis ground:</p>	<p>Is the resistance more than 1 $M\Omega$?</p>	<p>Go to step 5.</p>	<p>Repair the short circuit of harness.</p>
<p>5 CHECK THE INPUT SIGNAL OF DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE. 1) Connect all the harness connectors. 2) Disconnect the harness connector of combination meter. 3) Turn the ignition switch to ON. 4) Release the parking brake. 5) Measure the voltage between driver's control center differential control module harness connector and chassis ground. Connector & terminal (B289) No. 11 (+) — Chassis ground (-):</p>	<p>Is the voltage more than 8 V?</p>	<p>Go to step 6.</p>	<p>Replace the driver's control center differential control module.</p>
<p>6 CHECK THE INPUT SIGNAL OF DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE. 1) Apply the parking brake. 2) Measure the voltage between driver's control center differential control module harness connector and chassis ground. Connector & terminal (B289) No. 11 (+) — Chassis ground (-):</p>	<p>Is the voltage less than 0.4 V?</p>	<p>Go to step 7.</p>	<p>Replace the driver's control center differential control module.</p>
<p>7 CHECK POOR CONTACT IN HARNESS CONNECTOR.</p>	<p>Is there any poor contact in harness connector of parking brake circuit?</p>	<p>Repair the poor contact of harness connector.</p>	<p>Replace the driver's control center differential control module.</p>

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

M: DTC 33 STOP LIGHT SWITCH

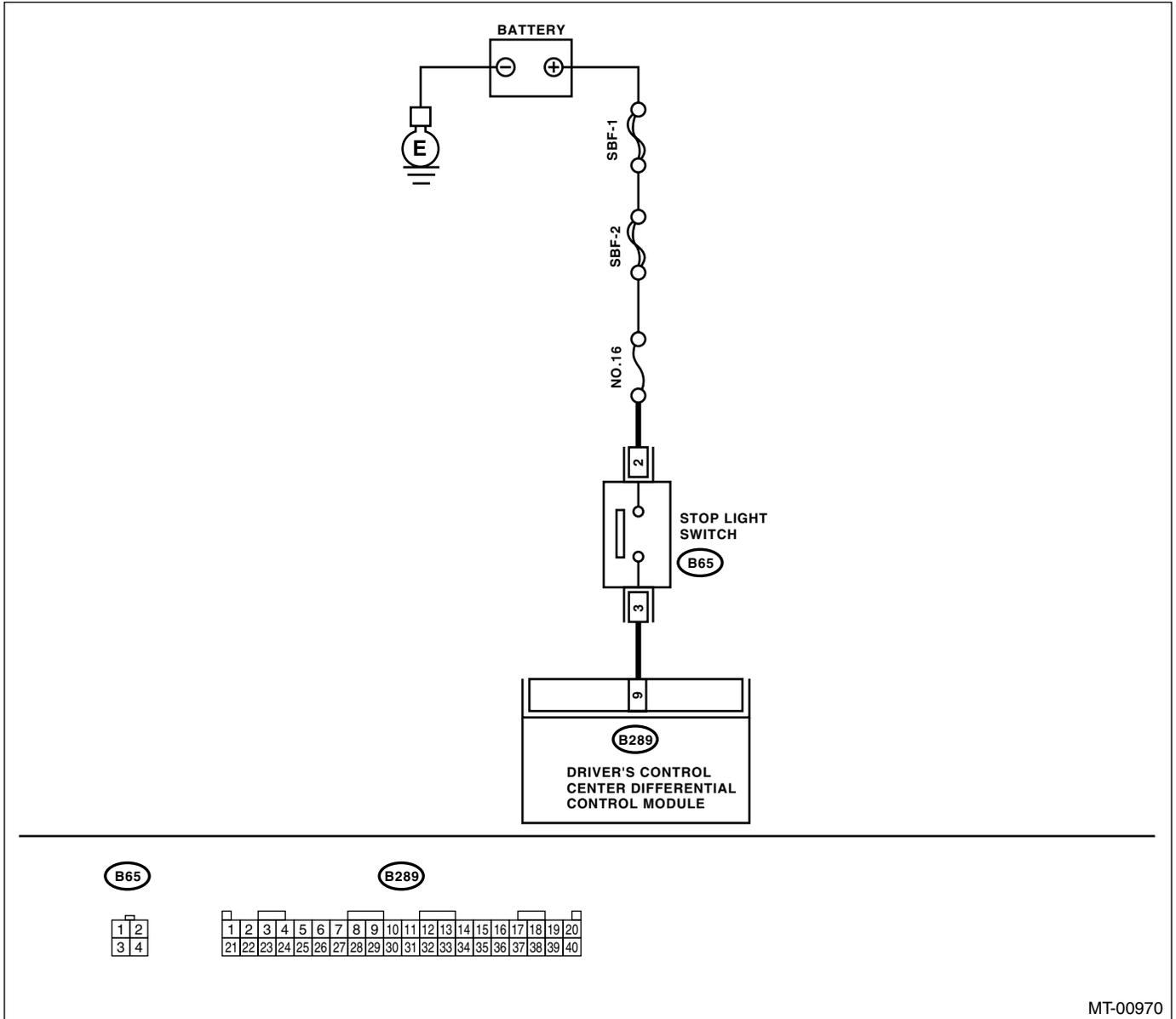
DIAGNOSIS:

Open or short circuit in stop light switch circuit.

TROUBLE SYMPTOM:

Wheels are locked while the ABS operates.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK DTC.	Is the stop light switch related DTC displayed during ABS self-diagnosis test mode?	Check according to ABS DTC.	Go to step 2.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
2 CHECK INPUT SIGNAL OF STOP LIGHT SWITCH AND DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE. 1) Turn the ignition switch to OFF. 2) Disconnect the connector of driver's control center differential control module. 3) Set the brake pedal depressed. 4) Measure the voltage between driver's control center differential control module and chassis ground. <i>Connector & terminal (B289) No. 9 (+) — Chassis ground (-):</i>	Is the voltage more than 8 V?	Go to step 3.	Repair the open or short circuit of harness between driver's control center differential control module and stop light switch.
3 CHECK POOR CONTACT.	Is there any poor contact?	Repair the poor contact.	Replace the driver's control center differential control module.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

N: DTC 34 ABS SWITCH SIGNAL

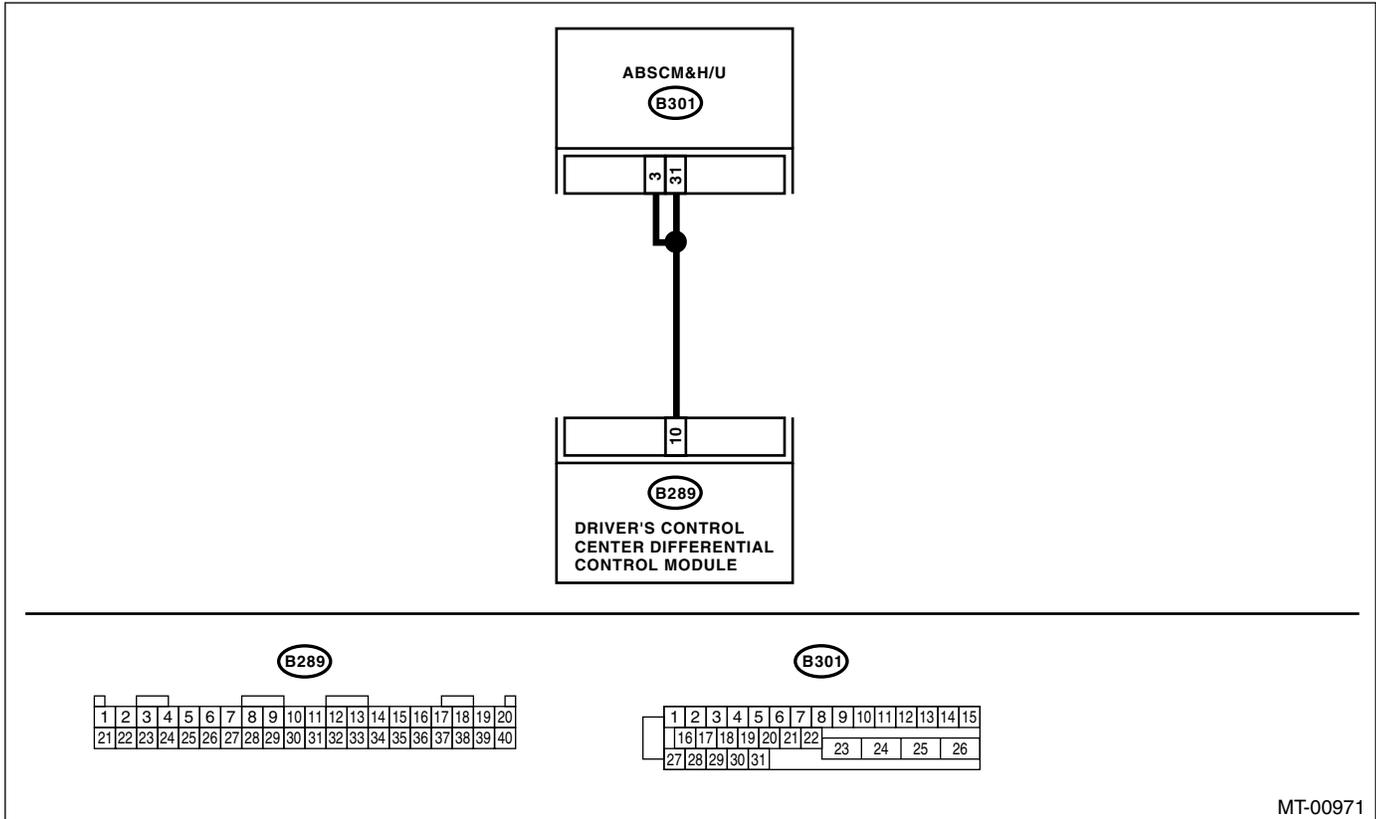
DIAGNOSIS:

Open or short in combination signal circuit of driver's control center differential control.

TROUBLE SYMPTOM:

- ABS warning light illuminates.
- Wheels are locked while the ABS operates.

WIRING DIAGRAM:



MT-00971

Step	Check	Yes	No
1	CHECK DTC.	Is DTC code displayed during ABS self-diagnosis test mode?	Check according to ABS DTC. Go to step 2.
2	CHECK HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ABSCM&H/U. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of driver's control center differential control module and ABSCM&H/U. 3) Measure the resistance of harness between driver's control center differential control module and ABSCM&H/U harness connector. Connector & terminal (B289) No. 10 — (B301) No. 31: (B289) No. 10 — (B301) No. 3:	Is the resistance less than 1 Ω?	Go to step 3. Repair the open circuit of harness connector between driver's control center differential control module and ABSCM&H/U, and poor contact of harness connector.
3	CHECK HARNESS BETWEEN DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE AND ABSCM&H/U. Measure the resistance between driver's control center differential control module and chassis ground. Connector & terminal (B289) No. 10 — Chassis ground:	Is the resistance more than 1 MΩ?	Go to step 4. Repair the short of harness between driver's control center differential control module and ABSCM&H/U.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Step	Check	Yes	No
4 CHECK THE DRIVER'S CONTROL CENTER DIFFERENTIAL CONTROL MODULE. 1)Connect driver's control center differential control module connector. 2)Turn the ignition switch to ON. 3)Measure the voltage between driver's control center differential control module harness connector and chassis ground. Connector & terminal (B289) No. 10 (+) — Chassis ground (-):	Is the voltage more than 8 V?	Go to step 5.	Replace the driver's control center differential control module.
5 CHECK POOR CONTACT IN HARNESS CONNECTOR.	Is there any poor contact in combination circuit of driver's control center differential control?	Repair the poor contact.	Check the ABSCM&H/U.

GENERAL DIAGNOSTIC TABLE
 MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

12. General Diagnostic Table

A: INSPECTION

Symptom	Abnormal units/parts
Tight cornering condition	<ul style="list-style-type: none"> • ABSCM&H/U • ABS wheel speed sensor • Accelerator position sensor • ECM • Center differential • Center differential control dial • Manual mode switch • Tire/Wheel • Driver's control center differential control module
Tendency to oversteer	<ul style="list-style-type: none"> • Accelerator position sensor • ECM • Center differential control dial • Manual mode switch • Tire/Wheel • Driver's control center differential control module • Center differential • Driver's control center differential relay • Rear differential oil temperature switch
Tendency to understeer at high speed cornering	<ul style="list-style-type: none"> • Lateral G sensor • Center differential
No change in the center differential torque character	<ul style="list-style-type: none"> • Center differential control dial • Driver's control center differential relay • Center differential • Driver's control center differential control module
Driver's control center differential indicator does not operate	<ul style="list-style-type: none"> • Combination meter • Driver's control center differential control module
Driver's control center differential indicator does not operate though setting the center differential control dial	<ul style="list-style-type: none"> • Center differential control dial • Combination meter • Driver's control center differential control module
No change to AUTO or MANUAL	<ul style="list-style-type: none"> • Manual mode switch • Combination meter • Driver's control center differential control module
AUTO indicator light does not illuminate	<ul style="list-style-type: none"> • Manual mode switch • Combination meter • Driver's control center differential control module
Differential does not become free, or stays free	<ul style="list-style-type: none"> • Parking brake switch • Center differential • Manual mode switch • Center differential control dial • Rear differential • Tire/Wheel • Driver's control center differential relay • Rear differential oil temperature switch • Driver's control center differential control module

GENERAL DIAGNOSTIC TABLE

MANUAL TRANSMISSION AND DIFFERENTIAL (DIAGNOSTICS)

Symptom	Abnormal units/parts
Wheel lock at ABS operation	<ul style="list-style-type: none">• ABSCM&H/U• Stop light switch• Driver's control center differential control module
Differential does not become lock, or stays lock	<ul style="list-style-type: none">• ABSCM&H/U• ABS wheel speed sensor• Accelerator position sensor• ECM• Center differential• Center differential control dial• Manual mode switch• Tire/Wheel• Driver's control center differential control module• Driver's control center differential relay