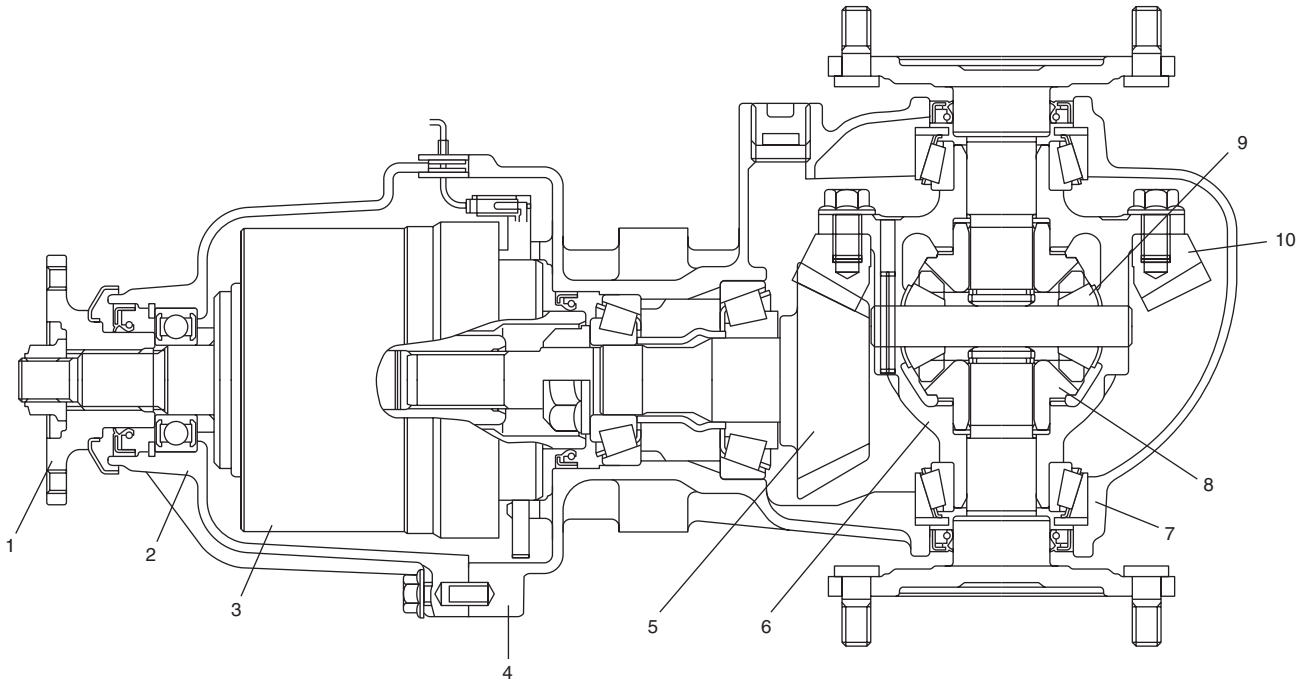
General Description

Rear Differential Description

S6RW0C3201001

The differential assembly uses a hypoid bevel pinion and gear.
The differential assembly is decisive in that the drive power is concentrated there. Therefore, use of genuine parts and specified torque is compulsory. Further, because of sliding tooth meshing with high pressure between hypoid bevel pinion and gear, it is mandatory to lubricate them by hypoid gear oil.



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1. Companion flange	5. Drive bevel pinion (hypoid gear)	9. Differential pinion
2. Coupling case	6. Differential case	10. Drive bevel gear (hypoid gear)
3. Coupling assembly	7. Differential cover	
4. Differential carrier	8. Differential side gear	

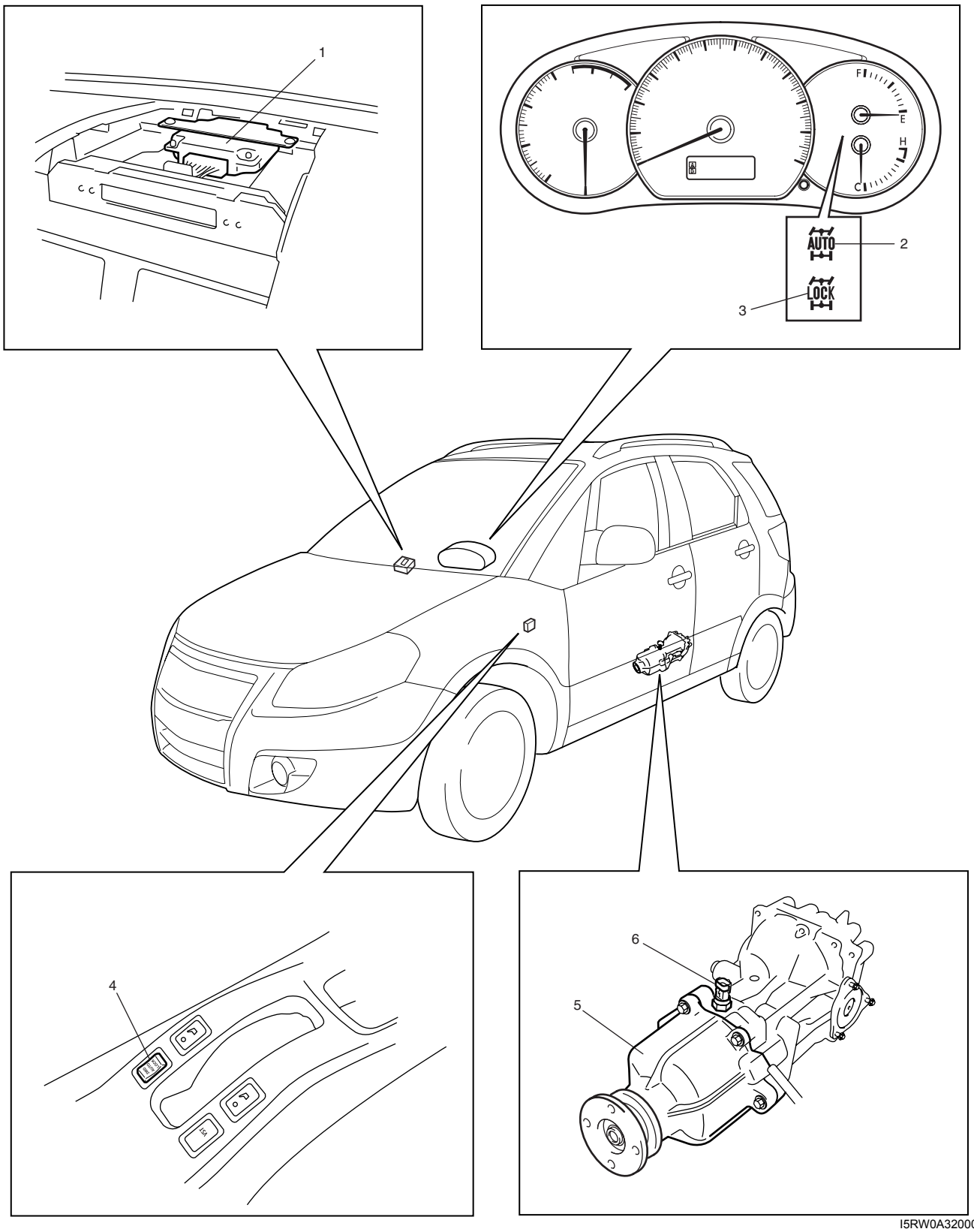
Coupling Description

S6RW0C3201002

Coupling is installed in the forward of rear differential. The road situation and driving are judged with 4WD control module based on information from sensor and each control module, and the distribution of driving force of the front and rear wheel has been changed by controlling the current to coupling. Coupling air temperature sensor is installed in coupling case and measures the temperature in coupling.
4WD system has three driving mode (2WD, 4WD-auto, 4WD-lock). The mode corresponding to the running situation can be selected by 2WD/4WD switch.

4WD Control System Components

S6RW0C3201003



I5RW0A320002-04

1. 4WD control module	3. 4WD LOCK indicator	5. Coupling assembly
2. 4WD AUTO indicator	4. 2WD/4WD switch	6. Coupling air temperature sensor

4WD Control System Description

S6RW0C3201004

4WD Shift Control

The 4WD control module operates the coupling assembly according to the 2WD/4WD switch operation to obtain the selected position (2WD, 4WD-auto or 4WD-lock). Also, the 4WD control system has 4WD AUTO indicator and 4WD LOCK indicator in order to inform the 4WD control system condition.

Indicator Operation

The 4WD control module outputs operation signal of the 4WD AUTO indicator and the 4WD LOCK indicator. Indicators as follows in order to inform what state the 4WD control system is.

Operation Indicator		Condition (when any one of the following conditions is satisfied)
4WD AUTO indicator	OFF	• Ignition switch is OFF. • Vehicle is at “2WD” position or “4WD-lock” position.
	ON	• Within 2 seconds after ignition switch is turn ON (checking indicator operation). • Vehicle is at “4WD-auto” position. • 4WD control module detects DTC of 4WD control system.
	Blinking at intervals of 2 seconds continuously	• 4WD control module detects the rotation difference of front wheel and rear wheel and/or temperature of transfer more than specified temperature.
4WD LOCK indicator	OFF	• Ignition switch is OFF. • Vehicle is at “2WD” position or “4WD-auto” position.
	ON	• Within 2 seconds after ignition switch is turn ON (checking indicator operation). • Vehicle is at “4WD-lock” position. • 4WD control module detects DTC of 4WD control system.

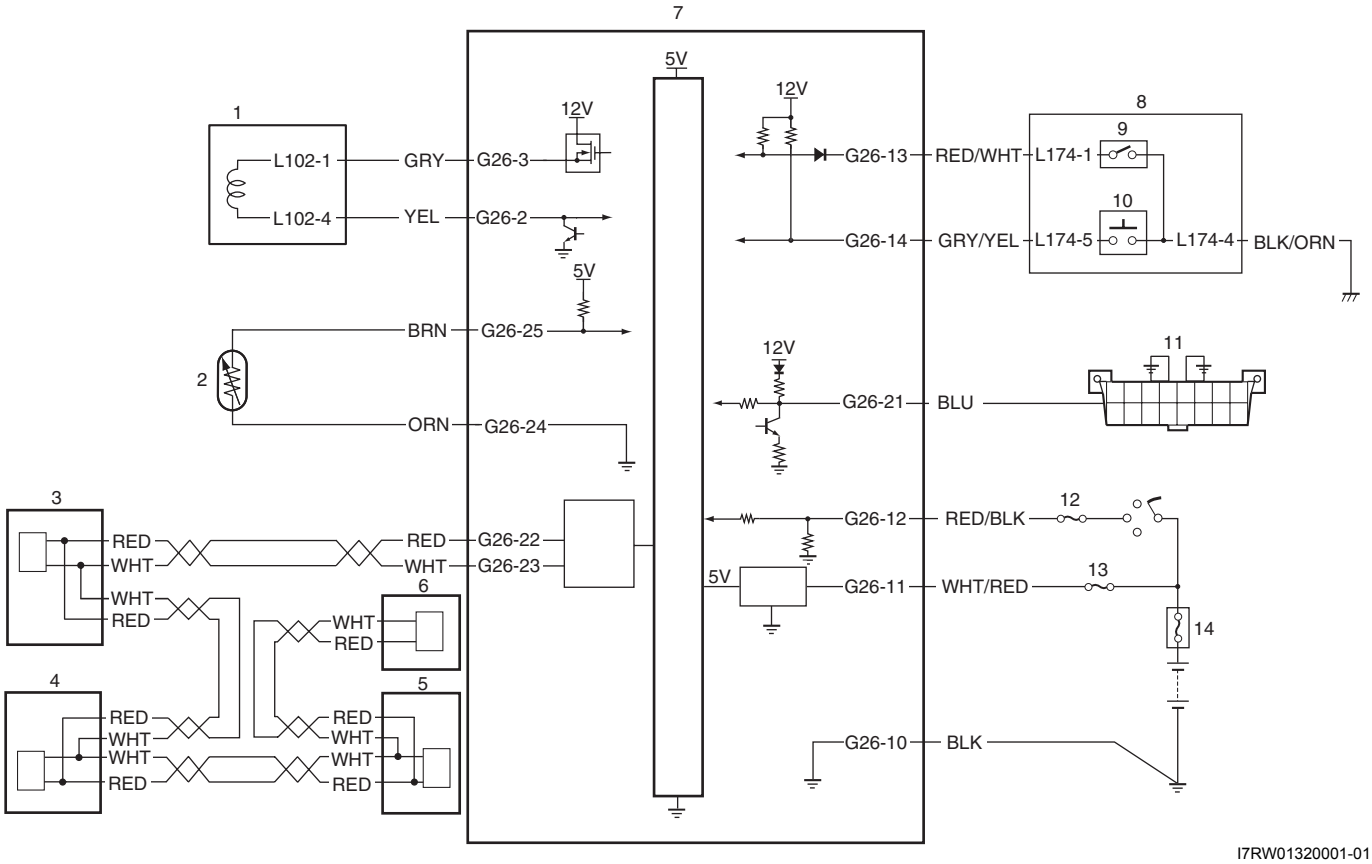
Function of 4WD Control System Component

S6RW0C3201005

Part Name	Function
2WD/4WD switch	Output ON and OFF signal of 2WD/4WD switch to 4WD control module.
4WD AUTO indicator	Indicates vehicle is at 4WD-auto mode or not.
4WD LOCK indicator	Indicates vehicle is at 4WD-lock mode or not.
4WD control module	• Controlled of current to coupling assembly and vehicle switching to each position. • Diagnosis 4WD control system components. • Output operation signal of indicator to BCM.
Coupling assembly	The driving force of corresponding to the signal from 4WD control module transmitted to the rear wheel.

4WD Control System Wiring Circuit Diagram

S6RW0C3201006



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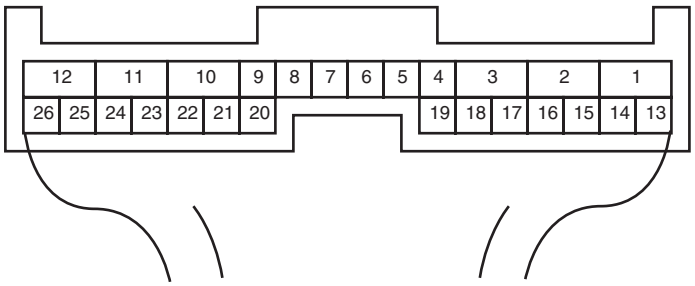
1. Coupling assembly	6. ECM	11. Data link connector (DLC)
2. Coupling air temperature sensor	7. 4WD control module	12. “IG COIL” fuse
3. Combination meter	8. 2WD/4WD switch	13. “4WD” fuse
4. BCM	9. “4WD” switch	14. Main fuse box
5. ABS / ESP® control module	10. “4WD lock” switch	

Terminal Arrangement of 4WD Control Module

S6RW0C3201007

[A]



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[A]: Connector “G26” viewed from harness side

Terminal	Circuit	Terminal	Circuit
G26-2	Coupling assembly (power)	G26-14	“4WD lock” switch
G26-3	Coupling assembly (ground)	G26-21	Data link connector (DLC)
G26-10	Ground	G26-22	CAN communication line (high)
G26-11	Power source for internal memory	G26-23	CAN communication line (low)
G26-12	Power source	G26-24	Coupling air temperature sensor (ground)
G26-13	4WD switch	G26-25	Coupling air temperature sensor (power)

Input / Output Signal Table of 4WD Control Module

S6RW0C3201008

4WD control module outputs the following signals to coupling assembly, indicators, according to the 2WD/4WD switch operation.

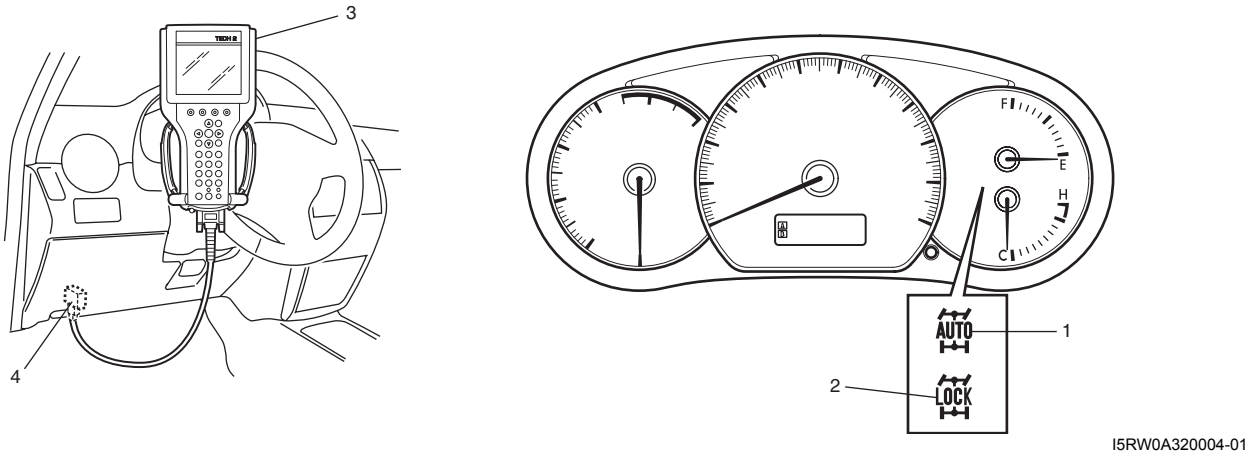
		Output signal (to each component parts)		
		Coupling assembly	4WD AUTO indicator	4WD LOCK indicator
Input signal	2WD/4WD switch	○	○	○
	Coupling air temperature sensor		○	
	ECM	○		
	ABS / ESP® control module	○	○	○

On-Board Diagnostic System Description

S6RW0C3201009

For 4WD control system, 4WD control module has the following functions.

- When ignition switch is turned ON with engine at stop, 4WD AUTO indicator (1) and 4WD LOCK indicator (2) turn on at the same time for 2 seconds in order to check operation of these indicators.
- When 4WD control module detects any malfunction in the following area, 4WD AUTO indicator (1) and 4WD LOCK indicator (2) flash continuously or turn on and 4WD control module comes into fail-safe mode. For details of fail safe mode, refer to “Fail-Safe Table”.
  - 2WD/4WD switch
  - Coupling air temperature sensor
  - Coupling assembly
- DTC can be checked by using SUZUKI scan tool (3) connected to DLC (4).
- When 4WD control module detects any malfunction, 4WD control module will switch off the current to coupling assembly and vehicle is changed to 2WD position.



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DLC (Data Link Connector)

Refer to “Data Link Connector (DLC)” under “On-Board Diagnostic System Description in Section 1A”.

CAN Communication System Description

S6RW0C3201010

Refer to “CAN Communication System Description in Section 1A” for CAN communication system description.
When 4WD control module receive the signal of abnormal as following information, vehicle is not changed to 4WD-auto and 4WD-lock mode.

4WD Control Module Transmission Data

				ECM	Combination Meter	ESP® hydraulic unit / control module (if equipped)
4WD control module	Transmit	DATA	4WD mode status	○		
			4WD auto mode indication status		○	
			4WD lock mode indication status		○	
			4WD diagnostic trouble codes		○	
			4WD clutch control request impossibility			○
			4WD clutch engagement percent			○

I7RW01320013-01

4WD Control Module Reception Data

					ECM	ABS hydraulic unit /control module (if equipped)	ESP® hydraulic unit /control module (if equipped)
4WD control module	Receive	DATA	Accelerator position		○		
			Engine speed		○		
			Brake pedal switch signal		○		
			Engine type signal		○		
			Engine torque signal		○		
			Wheel speed signal (front right)			○	○
			Wheel speed signal (front left)			○	○
			Wheel speed signal (rear right)			○	○
			Wheel speed signal (rear lef)			○	○
			ABS active			○	○
			ESP® status signal				○
			Clutch control request for 4WD active				○
			Clutch control request percent				○

I7RW01320002-03

Diagnostic Information and Procedures

4WD Control System Check

S6RW0C3204001

Refer to the following items for the details of each step.

Step	Action	Yes	No
1	☞ **Customer complaint analysis** 1) Perform customer complaint analysis. *Was customer complaint analysis performed?*	Go to Step 2.	Perform customer complaint analysis.
2	☞ **DTC check, record and clearance** 1) Check for DTC. *Is there any DTC(s)?*	Print DTC or write them down and clear them by referring to “DTC Clearance”. Go to Step 3.	Go to Step 4.
3	☞ **Visual inspection** 1) Perform visual inspection. *Is there any faulty condition?*	Repair or replace malfunction part. Go to Step 11.	Go to Step 5.
4	☞ **Visual inspection** 1) Perform visual inspection. *Is there any faulty condition?*	Repair or replace malfunction part. Go to Step 11.	Go to Step 8.
5	☞ **Trouble symptom confirmation** 1) Select 2WD/4WD switch to “2WD”, “4WD-auto” and “4WD-lock” positions referring to “4WD Control System Operation Inspection”. 2) Confirm trouble symptom. *Is trouble symptom identified?*	Go to Step 6.	Go to Step 7.
6	☞ **Rechecking and record of DTC** 1) Recheck for DTC referring to “DTC Check”. *Is there any DTC(s)?*	Go to Step 9.	Go to Step 8.
7	☞ **Rechecking and record of DTC** 1) Recheck for DTC referring to “DTC Check”. *Is there any DTC(s)?*	Go to Step 9.	Go to Step 10.
8	☞ **4WD control symptom diagnosis** 1) Check and repair according to “4WD Control Symptom Diagnosis”. *Are check and repair complete?*	Go to Step 11.	Check and repair malfunction part(s). Go to Step 11.
9	☞ **Troubleshooting for DTC** 1) Check and repair according to applicable DTC flow. *Are check and repair complete?*	Go to Step 11.	Check and repair malfunction part(s). Go to Step 11.
10	☞ **Check for intermittent problems** 1) Check for intermittent problems referring to “Intermittent and Poor Connection Inspection in Section 00”. *Is there any faulty condition?*	Repair or replace malfunction part(s). Go to Step 11.	Go to Step 11.
11	☞ **Final confirmation test** 1) Clear DTC if any. 2) Perform final confirmation test. *Is there any problem symptom, DTC or abnormal condition?*	Go to Step 6.	END.

Detail of 4WD Control System Check

Step 1. Customer complaint analysis

Record details of the problem (failure, complaint) and how it occurred as described by the customer.
For this purpose, use of such a questionnaire form as shown in the following will facilitate collecting information to the point required for proper analysis and diagnosis.

Customer questionnaire (Example)

Customer's name:	Model:	VIN:	
Date of issue:	Date of Reg:	Date of problem:	Mileage:

Problem Symptoms	• 4WD position indicator abnormal: fails to turn on / fails to turn off / flashes • Abnormal noise while vehicle running: from coupling assembly other _____ • No changed to "2WD" mode • No changed to "4WD-lock" mode • No changed to "4WD-auto" mode
Frequency of Occurrence	• Continuous / Intermittent (times a day, a month) / other _____
Conditions for Occurrence of Problem	• When starting: at initial start only / at every start / other _____ • Vehicle speed: while accelerating / while decelerating / at stop / while turning / while running at constant speed / other _____ • Road surface condition: Paved road / rough road / snow-covered road / other _____
Environmental Condition	• Wheather: fine / cloudy / rain / snow / other • Temperature: °F (°C)
Diagnostic Trouble Code	• First check: Normal code / malfunction code ( ) • Second check after test drive: Normal code / malfunction code ( )

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NOTE

The form is a standard sample. It should be modified according to conditions characteristic of each market.

Step 2. DTC check, record and clearance

First, referring to "DTC Check", check DTC and pending DTC. If DTC exists, print or write down DTC and then clear malfunction DTC(s) by referring to "DTC Clearance". Malfunction DTC indicates malfunction in the system but it is not possible to know from it whether the malfunction is occurring now or it occurred in the past and normal condition has been restored. In order to know that, check symptom in question according to Step 5 and then recheck DTC according to Step 6.

Diagnosing a trouble based on the DTC in this step only or failure to clear the DTC in this step may result in an faulty diagnosis, trouble diagnosis of a normal circuit or difficulty in troubleshooting which is otherwise unnecessary.

Step 3 and 4. Visual inspection

As a preliminary step, be sure to perform visual check of the items that support proper function of the 4WD control system referring to "Visual Inspection".

Step 5. Trouble symptom confirmation
Check trouble symptoms based on information obtained in “Step 1. Customer complaint analysis: ” and “Step 2. DTC check, record and clearance: ”.
Also, reconfirm DTC according to “DTC Confirmation Procedure” described in each DTC flow.

Step 6 and 7. Rechecking and record of DTC
Refer to “DTC Check” for checking procedure.

Step 8. 4WD control symptom diagnosis
Check the parts of the system suspected as a possible cause referring to “4WD Control Symptom Diagnosis”.

Step 9. Troubleshooting for DTC
Based on the DTC indicated in Step 6 / 7 and referring to “applicable DTC flow”, locate the cause of the trouble, namely in a sensor, switch, wire harness, connector, coupling assembly, 4WD control module or other part and repair or replace faulty parts.

Step 10. Check for intermittent problem
Check parts where an intermittent trouble is easy to occur (e.g. wire harness, connector, etc.), referring to “Intermittent and Poor Connection Inspection in Section 00” and related circuit of DTC recorded in Step 2.

Step 11. Final confirmation test
Confirm that the problem symptom has gone and the vehicle is free from any abnormal conditions. If what has been repaired is related to the malfunction DTC, clear the DTC once and check to ensure that no malfunction DTC is indicated.

4WD Position Indicator Operation Check

S6RW0C3204002

1) Turn ignition switch to OFF position.
2) Check that 4WD position indicators turn on for about 2 seconds and then turns off.
   If any faulty condition is found, proceed to “4WD Position Indicator Does Not Come ON at Ignition Switch ON but Engine Stops” or “4WD Position Indicator Remains ON Steady at Ignition Switch ON”.

4WD Control System Operation Inspection

S6RW0C3204003

NOTE

- **It automatically changes into “4WD-auto” position, when the vehicle speed becomes specified speed or more at “4WD-lock” position. It is “4WD-auto” position until switch will be selected to “4WD-lock” position at next time.**
- **When ABS operates while changed of each position, it is discontinued of change. End of the ABS operation, and then returned to the position of before.**

1) Inspect switch operation from “4WD-auto” to “2WD” as follows.
   a) Start engine.
   b) Push 2WD/4WD switch to “2WD” position.
   c) Check that 4WD AUTO indicator and 4WD LOCK indicator not come ON.
2) Inspect switch operation from “2WD” to “4WD-auto” as follows.
   a) Start engine.
   b) Push 2WD/4WD switch to “AUTO” position.
   c) Check that 4WD AUTO indicator comes ON steady and 4WD LOCK indicator not come ON.
3) Inspect switch operation from “4WD-auto” to “4WD-lock” as follows.
   a) Start engine.
   b) Push 2WD/4WD switch to “LOCK” position, and keep it for 3 seconds or more.
   c) Check that 4WD AUTO indicator not come ON and 4WD LOCK indicator comes ON steady.
4) Inspect switch operation from “4WD-lock” to “4WD-auto” as follows.
   a) Start engine.
   b) Push 2WD/4WD switch to “AUTO” position.
   c) Check that 4WD AUTO indicator comes ON steady and 4WD LOCK indicator not come ON.

Visual Inspection

S6RW0C3204004

Check the following parts and systems visually.

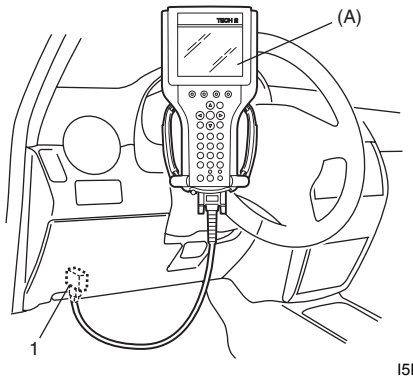
Inspection Item	Referring
• Rear differential oil ---- level, leakage	“Rear Differential Oil Change”
• Transfer gear oil ---- level, leakage	“Transfer Oil Change in Section 3C”
• Manual transmission oil ---- level, leakage	“Manual Transaxle Oil Change in Section 5B”
• Rear differential mounting(s) ---- wear and looseness	
• Fuses ---- burning	
• Battery ---- fluid level, corrosion of terminal	“Battery Inspection in Section 1J”
• Connectors of electric wire harness ---- disconnection, friction	“Intermittent and Poor Connection Inspection in Section 00”
• Other parts that can be checked visually	

DTC Check

S6RW0C3204005

1) Turn ignition switch to OFF position.
2) Connect SUZUKI scan tool to data link connector (DLC) (1) located on underside of instrument panel.

Special tool
(A): SUZUKI scan tool



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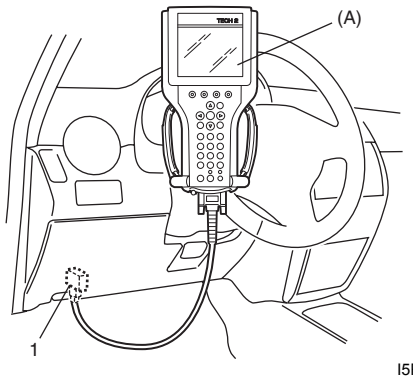
3) Turn ignition switch to ON position.
4) Read DTC according to instructions displayed on SUZUKI scan tool and print it or write it down. Refer to SUZUKI scan tool operator's manual for further details.
   If communication between SUZUKI scan tool and 4WD control module is not possible, check if SUZUKI scan tool is communicable by connecting it to 4WD control module in another vehicle. If communication is possible in this case, SUZUKI scan tool is in good condition. Then check data link connector and serial data line (circuit) in the vehicle with which communication was not possible.
5) After completing the check, turn ignition switch OFF and disconnect SUZUKI scan tool from data link connector (DLC).

DTC Clearance

S6RW0C3204006

1) Turn ignition switch to OFF position.
2) Connect SUZUKI scan tool to data link connector (DLC) (1) located on underside of instrument panel.

Special tool
(A): SUZUKI scan tool



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3) Turn ignition switch to ON position.
4) Erase DTC according to instructions displayed on SUZUKI scan tool. Refer to SUZUKI scan tool operator's manual for further details.
5) After completing clearance, turn ignition switch OFF and disconnect SUZUKI scan tool from data link connector (DLC).
6) Perform "DTC Check" and confirm that NO CODES is displayed.

NOTE

DTC stored in 4WD control module memory are also cleared in the following cases. Be careful not to clear them before keeping their record.

- **When power to 4WD control module is cut off (by disconnecting battery cable, removing fuse or disconnecting 4WD control module connectors).**
- **When the same malfunction (DTC) is not detected again during 40 engine warm-up cycles.**

DTC Table

S6RW0C3204007

DTC No.	Detecting item	Detecting condition (DTC will set when detecting)	4WD position Indicator
☞ C1240	4WD control module power supply circuit malfunction	Battery voltage is lower than lower limit voltage for 4WD control module diagnosis.	○
☞ C1243	Internal circuit malfunction of 4WD control module	Internal power supply malfunction of 4WD control module	○
☞ C1250	Coupling air temperature sensor open	Sensor output voltage too high	○
☞ C1251	Coupling air temperature sensor short	Sensor output voltage too low	○
☞ C1252	Coupling assembly open	2WD/4WD switch is changed of 4WD lock position, and then vehicle is not changed for more than 5 seconds.	○
☞ C1253	Coupling assembly short	2WD/4WD switch is changed of 4WD lock position, and then vehicle is not changed for more than 5 seconds.	○
☞ C1254	2WD/4WD switch malfunction	Different switch combination from specification is detected more than 5 seconds.	○
☞ U0073	Control module communication bus off	Transmitting and receiving error of 4WD control module for specified time continuously	○
☞ U0100	Lost communication with ECM	Receiving error of 4WD control module from ECM for specified time continuously	○
☞ U0121	Lost communication with ABS / ESP® control module	Receiving error of 4WD control module from ABS / ESP® control module for specified time continuously	○
☞ U0155	Lost communication with instrument panel cluster control module	Receiving error of 4WD control module from combination meter for specified time continuously	○

NOTE

“O” in transfer position indicator column of the above table means indicator lights up when DTC is detected.

Fail-Safe Table

S6RW0C3204008

This function is provided by the safe mechanism that assures safe driveability even when the coupling assembly, switch, sensor or its circuit fails. The following table shows the fail safe function for each fail condition of sensor, coupling assembly, switch, 4WD control module or its circuit.

DTC No.	Trouble Area	Fail-Safe Operation
☞ C1240	4WD control module power supply circuit malfunction	4WD control module controls the current and fixed the vehicle to 2WD mode.
☞ C1243	Internal circuit malfunction of 4WD control module	
☞ C1250	Coupling air temperature sensor open	
☞ C1251	Coupling air temperature sensor short	
☞ C1252	Coupling assembly open	
☞ C1253	Coupling assembly short	
☞ C1254	2WD/4WD switch malfunction	
☞ U0073	Control module communication bus off	
☞ U0100	Lost communication with ECM	
☞ U0121	Lost communication with ABS / ESP® control module	
☞ U0155	Lost communication with instrument panel cluster control module	

Scan Tool Data

S6RW0C3204009

Scan tool data	Vehicle condition		Normal condition / reference values
☞ Accel pedal Pos	Ignition switch ON after warmed up engine	Accelerator pedal released	0 – 5%
		Accelerator pedal depressed fully	90 – 100%
☞ Engine speed	At engine idle speed		Engine idle speed is display
☞ 4WD mode	2WD/4WD switch selected to 2WD position		2WD
	2WD/4WD switch selected to AUTO position		AUTO
	2WD/4WD switch selected to LOCK position		LOCK
	ABS operating		ABS mode
	Ignition switch ON and engine stop		Relay off
	Stability control operating		Yaw cont
	ESP® operating		ESP® mode
☞ 4WD current	Engine running		0 – 200 mA
☞ Battery voltage	At engine idle speed		10 – 14 V
☞ Coupling temp	Engine running		–40 °C – 100 °C (–40 °F – 212 °F)
☞ Wheel speed (F)	Vehicle stop		0 km/h, 0 MPH
☞ Wheel speed (R)	Vehicle stop		0 km/h, 0 MPH
☞ F-R Wheel speed Diff	Vehicle stop		0 rpm
☞ 4WD duty	Ignition switch ON and 2WD/4WD switch selected to 2WD position		0%

Scan Tool Data Definitions

Accel pedal Pos (Accelerator pedal position) (%)
Accelerator pedal opening ratio detected by signal on CAN communication line fed from ECM.

Engine Speed (RPM)
This parameter indicates engine revolution calculated by 4WD control module.

4WD mode (2WD / AUTO / LOCK / ABS mode / Yaw cont / ESP® req)
This parameter indicates 4WD mode according to 2WD/ 4WD switch signal status detected by 4WD control module.

4WD current (A)
This parameter indicates input current of coupling assembly.

Battery voltage (V)
This parameter indicates battery voltage detected by 4WD control module.

Coupling temp (°C, °F)
Coupling temperature detected by coupling air temperature sensor installed in coupling assembly.

Wheel speed (F), Wheel speed (R) (km/h, mph)
Wheel speed is an ABS / ESP® control module internal parameter. It is computed by reference pulses from the wheel speed sensor.

F-R Wheel speed diff (Front-rear wheel speed differential) (rpm)
This parameter indicates rotation difference between front wheel and rear wheel detected by 4WD control module.

4WD duty (%)
This parameter indicates operation rate of coupling assembly.

Rear Differential Symptom Diagnosis

S6RW0C3204010

Condition	Possible cause	Correction / Reference Item
Gear noise	Deteriorated or water mixed lubricant	*Repair and replenish referring to "Rear Differential Oil Change".*
	Inadequate or insufficient lubricant	*Repair and replenish referring to "Rear Differential Oil Change".*
	Maladjusted backlash between drive bevel pinion and gear	*Adjust as prescribed referring to "Rear Differential Disassembly and Reassembly".*
	Improper tooth contact in the mesh between drive bevel pinion and gear	*Adjust or replace referring to "Rear Differential Disassembly and Reassembly".*
	Loose drive bevel gear securing bolts	*Replace or retighten referring to "Rear Differential Disassembly and Reassembly".*
	Damaged differential gear(s) or differential pinion(s)	*Replace referring to "Rear Differential Inspection".*
Bearing noise	(Constant noise) Deteriorated or water mixed lubricant	*Repair and replenish referring to "Rear Differential Oil Change".*
	(Constant noise) Inadequate or insufficient lubricant	*Repair and replenish referring to "Rear Differential Oil Change".*
	(Noise while coasting) Damaged bearing(s) of drive bevel pinion	*Replace referring to "Rear Differential Inspection".*
	(Noise while turning) Damaged differential side bearing(s) or axle bearing(s)	*Replace referring to "Rear Differential Inspection".*
Oil leakage	Clogged breather plug	*Clean.*
	Worn or damaged oil seal	*Replace.*
	Excessive oil	*Adjust oil level referring to "Rear Differential Oil Change".*
	Loose differential carrier bolts	*Replace or retighten.*

4WD Control Symptom Diagnosis

S6RW0C3204011

Diagnose 4WD system after performing the following inspections.

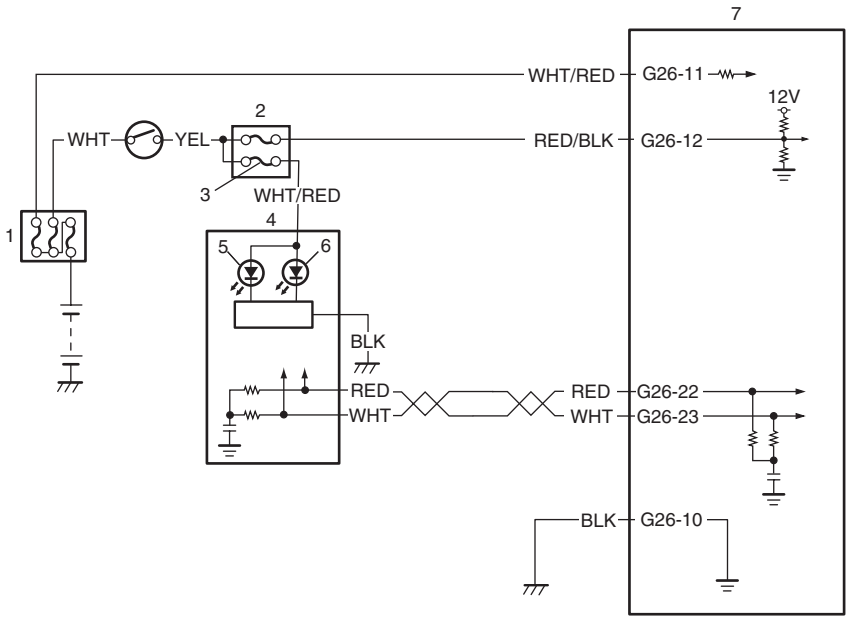
- Perform 4WD control system check referring to "4WD Control System Check".

Condition	Possible cause	Correction / Reference Item
4WD system does not operate	2WD/4WD switch faulty	*Check switch referring to "2WD/4WD Switch Inspection".*
	Coupling air temperature sensor faulty	*Check coupling air temperature sensor referring to "Coupling Air Temperature Sensor Inspection".*
	Coupling assembly faulty	*Check coupling assembly referring to "Coupling Assembly Inspection".*
	Wiring or grounding faulty	*Repair as necessary.*
	4WD control module faulty	*Check 4WD control module referring to "Inspection of 4WD Control Module and Its Circuits".*
	MAF sensor faulty	*Check MAF sensor and its circuit.*
	Accelerator pedal position (APP) sensor faulty	*Check accelerator pedal position (APP) sensor and its circuit.*
	CKP sensor faulty	*Check CKP sensor and its circuit.*
	Front and/or rear wheel speed sensor faulty	*Check front and/or rear wheel speed sensor and its circuit.*
	Steering angle sensor faulty	*Check steering angle sensor and its circuit.*
	ABS / ESP® control module faulty	*Check ABS / ESP® control module and its circuit.*
	ECM faulty	*Check ECM and its circuit.*
Noise	Damaged or worn bearing(s)	*Refer to "Rear Differential Inspection".*

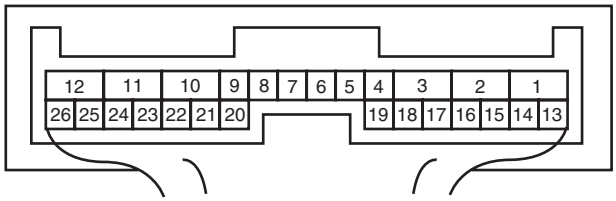
4WD Position Indicator Does Not Come ON at Ignition Switch ON but Engine Stops

S6RW0C3204012

Wiring Diagram



[A]



I7RW01320004-01

[A]: 4WD control module connector “G26” (viewed from harness side)	4. Combination meter
1. Main fuse box	5. 4WD AUTO indicator
2. Junction block assembly	6. 4WD LOCK indicator
3. “METER” fuse	7. 4WD control module

Circuit Description

4WD position indicator operates according to the signal from 4WD control module. If the 4WD control system is in good condition, 4WD position indicator light up for 2 seconds when ignition switch is turned to ON position, and then turned to OFF position. If an abnormality is detected in the system, 4WD position indicator remains lighting.

Troubleshooting

Step	Action	Yes	No
1	**4WD position indicator power supply check** 1) Turn ignition switch to ON position. *Do other indicators come ON?*	Go to Step 2.	Go to Step 3.
2	**Check DTC** 1) Connect scan tool to DLC with ignition switch OFF. 2) Turn ignition switch to ON position and check DTC. *Is there DTC(s) U0073, U0100, U0121 and/or U0155?*	Go to applicable DTC diag. flow.	Substitute a known-good combination meter and recheck. If 4WD position indicator still remains off, substitute a known-good 4WD control module and recheck.

Step	Action	Yes	No
3	**CAN communication circuit check** 1) Check CAN communication circuit between combination meter and 4WD control module referring to “DTC U0073: Control Module Communication Bus Off”. *Is CAN communication circuit in good condition?*	Go to Step 4.	Repair or replace.
4	**“METER” fuse check** 1) Turn ignition switch to OFF position. 2) Check for fuse blown to “METER” fuse in junction block assembly. *Is “METER” fuse in good condition?*	Go to Step 5.	Replace “METER” fuse and check for short.
5	**Combination meter power supply check** 1) Remove combination meter referring to “Combination Meter Removal and Installation in Section 9C”. 2) Check proper connection to “WHT/RED” and “BLK” wire terminal of combination meter connector. 3) If OK, then turn ignition switch to ON position and measure voltage between “WHT/RED” wire terminal of combination meter connector and vehicle body ground. *Is it 10 – 14 V?*	Go to Step 6.	“WHT/RED” wire is open circuit.
6	**Combination meter ground circuit check** 1) Turn ignition switch to OFF position. 2) Measure resistance between “BLK” wire terminal of combination meter connector and vehicle body ground. *Is resistance 1 Ω or less?*	Substitute a known-good combination meter and recheck. If 4WD position indicator still remains OFF, substitute a known-good 4WD control module and recheck.	“BLK” wire is open or high resistance circuit.

4WD Position Indicator Remains ON Steady at Ignition Switch ON

S6RW0C3204013

Wiring Diagram

Refer to “4WD Position Indicator Does Not Come ON at Ignition Switch ON but Engine Stops”.

Circuit Description

Transfer position indicator operates according to the signal from 4WD control module. If the 4WD control system is in good condition, 4WD position indicator light up for 2 seconds when ignition switch is turned to ON position, and then turned to OFF position. If an abnormality is detected in the system, 4WD position indicator remains lighting.

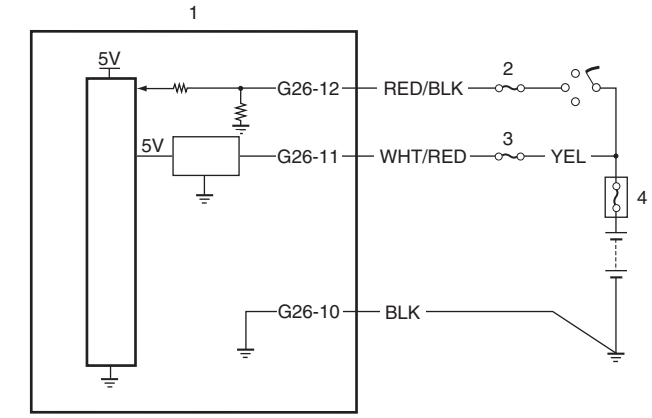
Troubleshooting

Step	Action	Yes	No
1	**Check DTC** 1) Check DTC referring to “DTC Check”. *Is there any DTC(s)?*	Perform DTC flow to repair and retry.	Go to Step 2.
2	**CAN communication circuit check** 1) Check CAN communication circuit between combination meter and 4WD control module referring to “DTC U0073: Control Module Communication Bus Off”. *Is CAN communication circuit in good condition?*	Substitute a known-good combination meter and recheck. If 4WD position indicator still remains off, substitute a known-good 4WD control module and recheck.	Repair or replace.

DTC C1240: 4WD Control Module Power Supply Circuit Malfunction

S6RW0C3204014

Wiring Diagram



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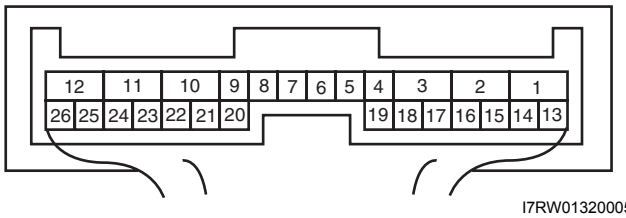


I7RW01320005-01

[A]: 4WD control module connector “G26” (viewed from harness side)	3. “4WD” fuse
1. 4WD control module	4. Main fuse box
2. “IG COIL” fuse	

DTC Detecting Condition and Trouble Area

DTC detecting condition	Trouble area
4WD control module power supply voltage is out of specification.	• 4WD control module power supply circuit

DTC Confirmation Procedure

1) Clear DTC using scan tool.
2) Turn ignition switch to ON position for 10 seconds.
3) Check DTC.

Troubleshooting

Step	Action	Yes	No
1	*Was “4WD control system check” performed?*	Go to Step 2.	Go to “4WD Control System Check”.
2	**4WD control module power circuit check** 1) Disconnect 4WD control module connector with ignition switch OFF. 2) Check for proper connection to “G26” terminal of 4WD control module connector. 3) If connection is OK, measure voltage between “G26-11” terminal of 4WD control module connector and vehicle body ground with ignition switch ON. *Is it 10 – 14 V?*	Go to Step 3.	“4WD” fuse blown, “WHT/RED” or “YEL” wire is circuit open or circuit short.

Step	Action	Yes	No
3	**Ground circuit check** 1) Turn ignition switch to OFF position. 2) Check for proper connection to “G26-10” terminal of 4WD control module connector. 3) If OK, measure resistance between “G26-10” terminal of 4WD control module connector and vehicle body ground. *If resistance 1 Ω or less?*	Substitute a known-good 4WD control module and recheck.	Repair ground circuit.

DTC C1243: Internal Circuit Malfunction of 4WD Control Module

S6RW0C3204015

DTC Detecting Condition and Trouble Area

DTC detecting condition	Trouble area
Internal power supply malfunction of 4WD control module	• 4WD control module

DTC Confirmation Procedure

1) Clear DTC using scan tool.
2) Start engine and run it for 10 seconds. or more.
3) Stop vehicle and check DTC.

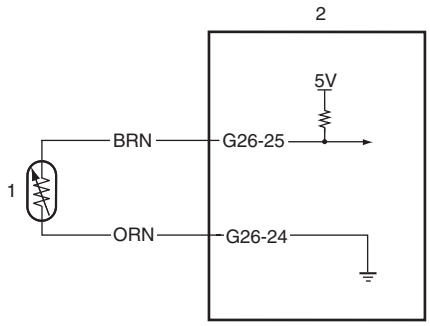
Troubleshooting

Substitute a known-good 4WD control module and recheck.

DTC C1250: Coupling Air Temperature Sensor Circuit Open

S6RW0C3204016

Wiring Diagram



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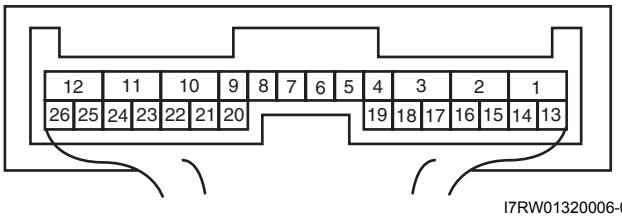


I7RW01320006-01

[A]: 4WD control module connector “G26” (viewed from harness side)	2. 4WD control module
1. Coupling air temperature sensor	

DTC Detecting Condition and Trouble Area

DTC detecting condition	Trouble area
Input signal from coupling air temperature sensor is higher than specified value.	• Coupling air temperature sensor • Coupling air temperature sensor circuit • 4WD control module

DTC Confirmation Procedure

1) Clear DTC using scan tool.
2) Turn ignition switch to ON position for 10 seconds.
3) Check DTC.

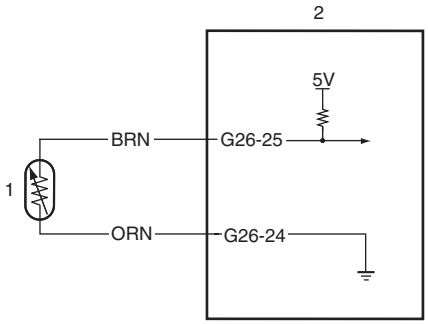
Troubleshooting

Step	Action	Yes	No
1	*Was "4WD control system check" performed?*	Go to Step 2.	Go to "4WD Control System Check".
2	**Coupling air temperature sensor circuit check** 1) Disconnect connector from coupling air temperature sensor with ignition switch turned OFF. 2) Check for proper connection to "BRN" and "ORN" terminals of coupling air temperature sensor connector. 3) If connection is OK, measure voltage between "BRN" terminal of coupling air temperature sensor connector and vehicle body ground with ignition switch turned ON. *Is it 4 – 6 V?*	Go to Step 3.	Go to Step 5.
3	**Coupling assembly ground circuit check** 1) Disconnect connector from 4WD control module with ignition switch turned OFF. 2) Measure resistance between "ORN" terminal of coupling air temperature sensor connector and "G26-24" terminal of 4WD control module connector with ignition switch turned OFF. *Is resistance below 5 Ω?*	Go to Step 4.	"ORN" wire is open or high resistance.
4	**Coupling air temperature sensor check** 1) Check coupling air temperature sensor referring to "Coupling Air Temperature Sensor Inspection". *Is it in good condition?*	Substitute a known-good 4WD control module and recheck.	Replace coupling air temperature sensor.
5	**Coupling assembly circuit check** 1) Disconnect connector from 4WD control module with ignition switch turned OFF. 2) Check for proper connection to "G26-25" and "G26-24" terminals of 4WD control module connector. 3) If connection is OK, measure resistance between "G26-25" terminal of 4WD control module connector and vehicle body ground. *Is resistance below 5 Ω?*	"BRN" wire is open or high resistance circuit.	Substitute a known-good 4WD control module and recheck.

DTC C1251: Coupling Air Temperature Sensor Circuit Short

S6RW0C3204017

Wiring Diagram



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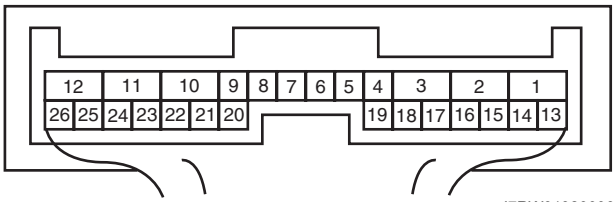


I7RW01320006-01

[A]: 4WD control module connector “G26” (viewed from harness side)	2. 4WD control module
1. Coupling air temperature sensor	

DTC Detecting Condition and Trouble Area

DTC detecting condition	Trouble area
Input signal from coupling air temperature sensor is lower than specified value.	• Coupling air temperature sensor • Coupling air temperature sensor circuit • 4WD control module

DTC Confirmation Procedure

1) Clear DTC using scan tool.
2) Turn ignition switch to ON position for 10 seconds.
3) Check DTC.

Troubleshooting

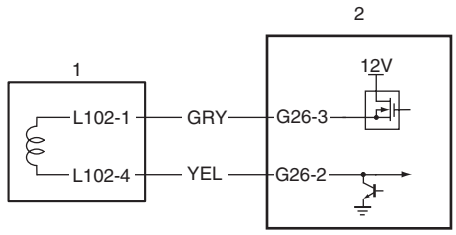
Step	Action	Yes	No
1	*Was “4WD control system check” performed?*	Go to Step 2.	Go to “4WD Control System Check”.
2	**Coupling air temperature sensor circuit check** 1) Disconnect connector from coupling air temperature sensor with ignition switch turned OFF. 2) Check for proper connection to “BRN” and “ORN” terminals of coupling air temperature sensor connector. 3) If connection is OK, measure voltage between “BRN” terminal of coupling air temperature sensor connector and vehicle body ground with ignition switch turned ON. *Is it 4 – 6 V?*	Go to Step 3.	Go to Step 5.

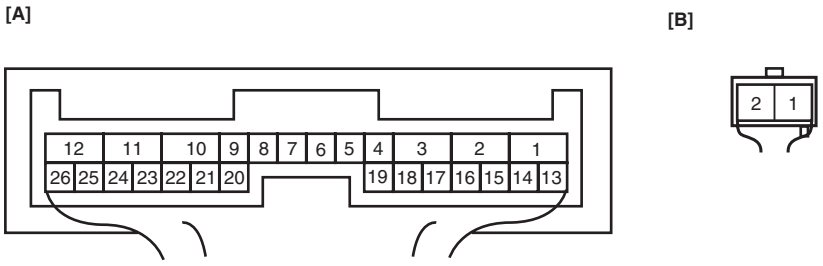
Step	Action	Yes	No
3	**Coupling assembly ground circuit check** 1) Disconnect connector from 4WD control module with ignition switch turned OFF. 2) Measure resistance between “ORN” terminal of coupling air temperature sensor connector and “G26-24” terminal of 4WD control module connector with ignition switch turned OFF. *Is resistance above 1 MΩ?*	Go to Step 4.	“ORN” wire is shorted to ground circuit.
4	**Coupling air temperature sensor check** 1) Check coupling air temperature sensor referring to “Coupling Air Temperature Sensor Inspection”. *Is it in good condition?*	Substitute a known-good 4WD control module and recheck.	Replace coupling air temperature sensor.
5	**Coupling assembly circuit check** 1) Disconnect connector from 4WD control module with ignition switch turned OFF. 2) Check for proper connection to “G26-25” and “G26-24” terminals of 4WD control module connector. 3) If connection is OK, measure resistance between “G26-25” terminal of 4WD control module connector and vehicle body ground. *Is resistance above 1 MΩ?*	“BRN” wire is shorted to ground circuit.	Substitute a known-good 4WD control module and recheck.

DTC C1252: Coupling Assembly Circuit Open

S6RW0C3204018

Wiring Diagram





I7RW01320007-01

[A]: 4WD control module connector “G26” (viewed from harness side)	1. Coupling assembly
[B]: Coupling assembly connector “L102” (viewed from harness side)	2. 4WD control module

DTC Detecting Condition and Trouble Area

DTC detecting condition	Trouble area
2WD/4WD switch is changed of 4WD lock position, and then vehicle is not changed for more than 5 seconds.	• Coupling assembly • Coupling assembly circuit • 4WD control module

DTC Confirmation Procedure

1) Clear DTC using scan tool.
2) Start engine and select 2WD/4WD switch to “LOCK” position.
3) Keep engine running at 2000 rpm for 10 seconds. or more.
4) Stop engine and check DTC.

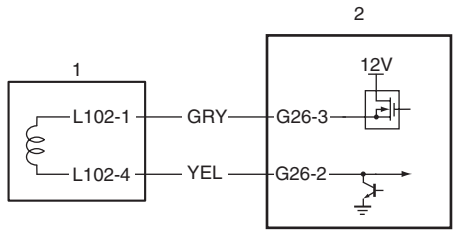
Troubleshooting

Step	Action	Yes	No
1	*Was “4WD control system check” performed?*	Go to Step 2.	Go to “4WD Control System Check”.
2	**Coupling assembly circuit check** 1) Disconnect coupling assembly connector “L102” with ignition switch turned OFF. 2) Check for proper connection to “L102-1” and “L102-4” terminals of coupling assembly connector. 3) If connection is OK, measure voltage between “L102-1” terminal of coupling assembly connector and vehicle body ground. *Is it 10 – 14 V?*	Go to Step 3.	Go to Step 6.
3	**Coupling assembly ground circuit check** 1) Measure resistance between “L102-4” terminal of coupling assembly connector and vehicle body ground with ignition switch turned OFF. *Is resistance below 5 Ω?*	Go to Step 4.	Go to Step 5.
4	**Coupling assembly check** 1) Check coupling assembly referring to “Coupling Assembly Inspection”. *Is it in good condition?*	Substitute a known-good 4WD control module and recheck.	Replace coupling assembly.
5	**Coupling assembly circuit check** 1) Disconnect connector from 4WD control module connector “G26” with ignition switch turned OFF. 2) Check for proper connection to “G26-2” and “G26-3” terminals of 4WD control module connector. 3) If connection is OK, measure resistance between “G26-2” terminal of 4WD control module connector and vehicle body ground. *Is resistance below 5 Ω?*	“YEL” wire is open or high resistance circuit.	Substitute a known-good 4WD control module and recheck.
6	**Coupling assembly circuit check** 1) Disconnect connector from 4WD control module connector “G26” with ignition switch turned OFF. 2) Check for proper connection to “G26-3” terminal of 4WD control module connector. 3) If connection is OK, measure resistance between “G26-3” terminal of 4WD control module connector and “L102-1” terminal of coupling assembly connector. *Is resistance below 5 Ω?*	Substitute a known-good 4WD control module and recheck.	“GRY” wire is open or high resistance circuit.

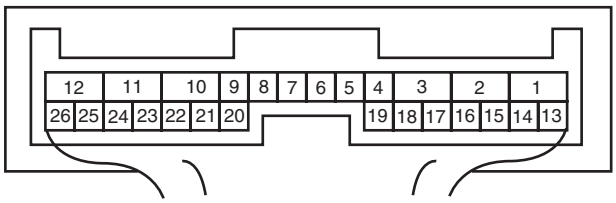
DTC C1253: Coupling Assembly Circuit Short

S6RW0C3204019

Wiring Diagram



[A]



[B]

I7RW01320007-01

[A]: 4WD control module connector "G26" (viewed from harness side)	1. Coupling assembly
[B]: Coupling assembly connector "L102" (viewed from harness side)	2. 4WD control module

DTC Detecting Condition and Trouble Area

DTC detecting condition	Trouble area
2WD/4WD switch is changed of 4WD lock position, and then vehicle is not changed for more than 5 seconds.	• Coupling assembly • Coupling assembly circuit • 4WD control module

DTC Confirmation Procedure

1) Clear DTC using scan tool.
2) Start engine and select 2WD/4WD switch to "LOCK" position.
3) Keep engine running at 2000 rpm for 10 seconds. or more.
4) Stop engine and check DTC.

Troubleshooting

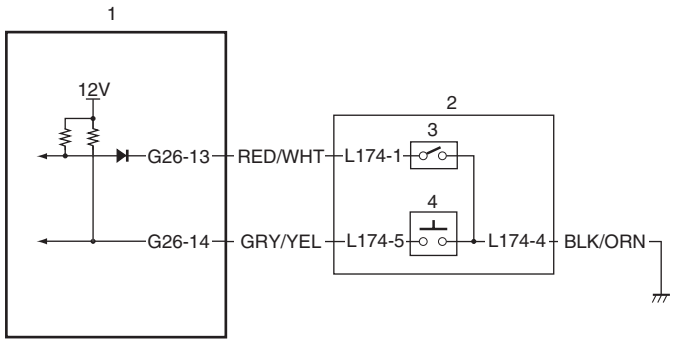
Step	Action	Yes	No
1	*Was "4WD control system check" performed?*	Go to Step 2.	Go to "4WD Control System Check".
2	**Coupling assembly circuit check** 1) Disconnect coupling assembly connector "L102" with ignition switch turned OFF. 2) Check for proper connection to "L102-1" and "L102-4" terminals of coupling assembly connector. 3) If connection is OK, measure voltage between "L102-1" terminal of coupling assembly connector and vehicle body ground. *Is it 10 – 14 V?*	Go to Step 3.	Go to Step 6.
3	**Coupling assembly ground circuit check** 1) Measure resistance between "L102-4" terminal of coupling assembly connector and vehicle body ground with ignition switch turned OFF. *Is resistance below 5 Ω?*	Go to Step 4.	Go to Step 5.

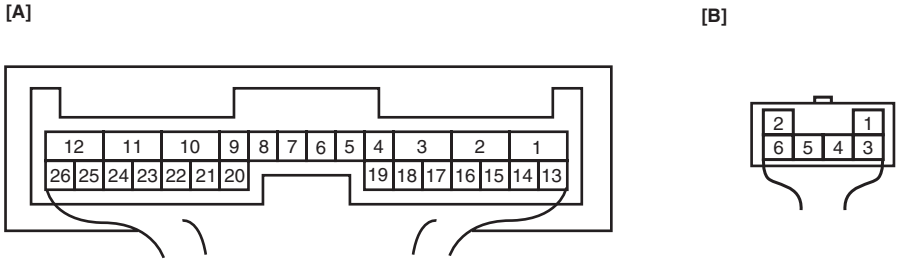
Step	Action	Yes	No
4	**Coupling assembly check** 1) Check coupling assembly referring to “Coupling Assembly Inspection”. *Is it in good condition?*	Substitute a known-good 4WD control module and recheck.	Replace coupling assembly.
5	**Coupling assembly circuit check** 1) Disconnect connector from 4WD control module connector “G26” with ignition switch turned OFF. 2) Check for proper connection to “G26-2” and “G26-3” terminals of 4WD control module connector. 3) If connection is OK, measure resistance between “G26-2” terminal of 4WD control module connector and vehicle body ground. *Is resistance above 1 MΩ?*	“YEL” wire is shorted to ground circuit.	Substitute a known-good 4WD control module and recheck.
6	**Coupling assembly circuit check** 1) Disconnect connector from 4WD control module connector “G26” with ignition switch turned OFF. 2) Check for proper connection to “G26-3” terminal of 4WD control module connector. 3) If connection is OK, measure resistance between “G26-3” terminal of 4WD control module connector and “L102-1” terminal of coupling assembly connector. *Is resistance above 1 MΩ?*	Substitute a known-good 4WD control module and recheck.	“GRY” wire is shorted to ground circuit.

DTC C1254: 2WD/4WD Switch Malfunction

S6RW0C3204020

Wiring Diagram





I7RW01320008-01

[A]: 4WD control module connector “G26” (viewed from harness side)	2. 2WD/4WD switch
[B]: 2WD/4WD switch connect “L174” (viewed from harness side)	3. “4WD” switch
1. 4WD control module	4. “4WD-lock” switch

DTC Detecting Condition and Trouble Area

DTC detecting condition	Trouble area
2WD/4WD switch combination different from specification is detected for more than 5 seconds.	• 2WD/4WD switch • 2WD/4WD switch circuit • 4WD control module

DTC Confirmation Procedure

1) Clear DTC using scan tool.
2) Select 2WD/4WD switch to “2WD” position and keep its position for 10 seconds. Similarly select 2WD/4WD switch to “AUTO” and “LOCK” position.
3) Check DTC.

Troubleshooting

Step	Action	Yes	No
1	*Was “4WD control system check” performed?*	Go to Step 2.	Go to “4WD Control System Check”.
2	**2WD/4WD switch circuit check** 1) Disconnect 2WD/4WD switch connector “L174” with ignition switch turned OFF. 2) Check for proper connection to “L174-1” and “L174-5” terminals of 2WD/4WD switch connector. 3) If connection is OK, measure voltage between “L174-1” terminal or “L174-5” terminal of 2WD/4WD switch connector and vehicle body ground. *Is it 10 – 14 V?*	Go to Step 3.	Go to Step 5.
3	**2WD/4WD switch ground circuit check** 1) Measure resistance between “L174-4” terminal of 2WD/4WD switch connector and vehicle body ground with ignition switch turned OFF. *Is resistance below 5 Ω?*	Go to Step 4.	“BLK/ORN” wire is shorted to ground.
4	**2WD/4WD switch check** 1) Check 2WD/4WD switch referring to “2WD/4WD Switch Inspection”. *Is it in good condition?*	Substitute a known-good 4WD control module and recheck.	Replace 2WD/4WD switch.
5	**2WD/4WD switch circuit check** 1) Disconnect connector from 4WD control module connector “G26” with ignition switch turned OFF. 2) Check for shorted to ground in related circuits. • Between “G26-13” terminal of 4WD control module connector and “L174-1” terminal of 2WD/4WD switch connector. • Between “G26-14” terminal of 4WD control module connector and “L174-5” terminal of 2WD/4WD switch connector. *Are they in good condition?*	Substitute a known-good 4WD control module and recheck.	Repair circuit.

DTC U0073: Control Module Communication Bus Off

S6RW0C3204021

Refer to “Troubleshooting for CAN-DTC in Section 1A”.

DTC U0100: Lost Communication with ECM

S6RW0C3204022

Refer to “Troubleshooting for CAN-DTC in Section 1A”.

DTC U0121: Lost Communication with ABS / ESP® Control Module

S6RW0C3204023

Refer to “Troubleshooting for CAN-DTC in Section 1A”.

DTC U0155: Lost Communication with Instrument Panel Cluster (IPC) Control Module

S6RW0C3204024

Refer to “Troubleshooting for CAN-DTC in Section 1A”.

Inspection of 4WD Control Module and Its Circuits

S6RW0C3204025

4WD control module and its circuits can be checked at coupler connected to 4WD control module by measuring voltage, pulse signal.

⚠ CAUTION

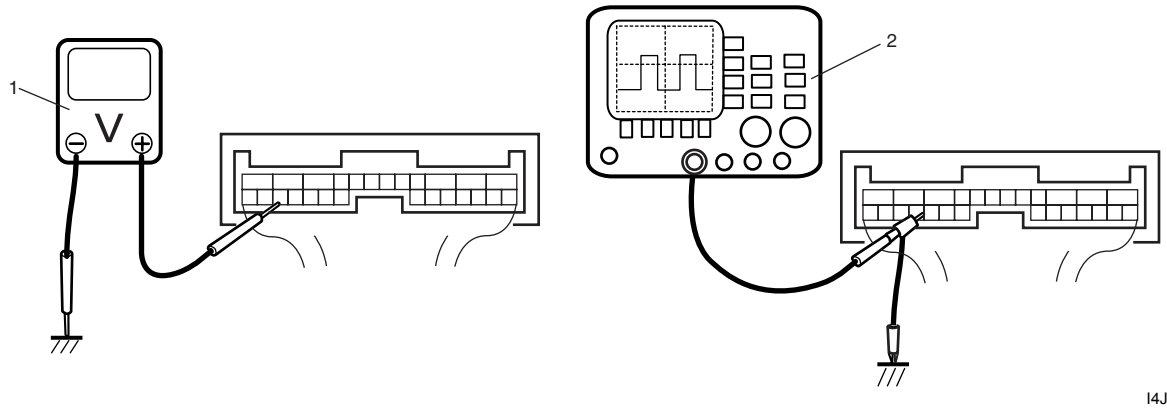
4WD control module cannot be checked by itself. It is strictly prohibited to connect voltmeter or ohmmeter to 4WD control module with couplers disconnected from it.

Voltage and Signal Check

1) Check voltage using voltmeter (1) connected to each terminal of couplers.
2) Check signal using oscilloscope (2) connected to each terminal of couplers.

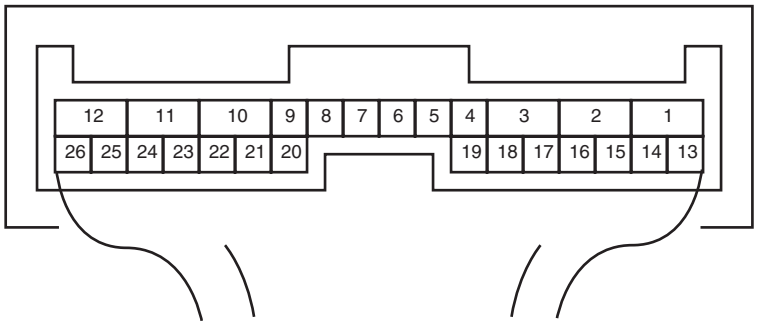
NOTE

- **As each terminal voltage is affected by the battery voltage, confirm that it is 11 V or more when ignition switch is turned ON.**
- **Pulse signal cannot be measured by voltmeter. It can be measured by oscilloscope.**
- **Item with asterisk (*) in normal voltage column can be read only by oscilloscope.**



I4JA01332053-01

Terminal arrangement of 4WD control module connector (Viewed from harness side)



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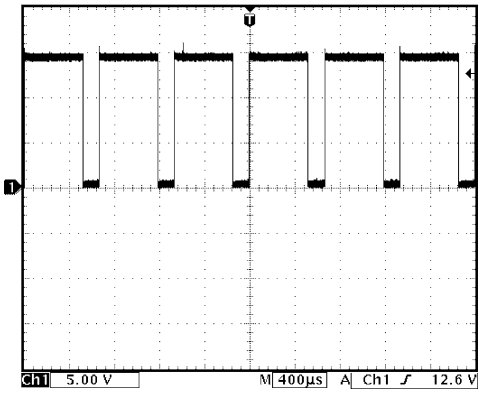
Terminal Number	Wire Color	Circuit	Normal Voltage	Condition
G26-1	—	—	—	—
G26-2	GRN	Coupling assembly (ground)	About 5 V	Ignition switch turned ON position
G26-3	YEL	Coupling assembly (power)	10 – 12 V	• Run engine at idle speed and 2WD/4WD switch at 4WD lock position • Selector lever at “P” or “N” range (A/T model)
			*0 – 12 V (“Reference waveform No.1: ”)	• Run engine at idle speed and 2WD/4WD switch at 4WD lock position • Selector lever at other than “P” or “N” range (A/T model) or depress accelerator pedal (M/T model)
			About 5 V	Above-mentioned condition
G26-4	—	—	—	—
G26-5	—	—	—	—
G26-6	—	—	—	—
G26-7	—	—	—	—
G26-8	—	—	—	—
G26-9	—	—	—	—
G26-10	BLK	Ground	0 – 1 V	—
G26-11	WHT/RED	Power source for internal memory	10 – 14 V	—
G26-12	RED/BLK	Power source	10 – 14 V	Ignition switch turned ON position
G26-13	RED/WHT	4WD switch	0 – 1 V	Ignition switch turned ON position and 2WD/4WD switch at 4WD auto or 4WD lock position
			10 – 14 V	Ignition switch turned ON position and 2WD/4WD switch at 2WD position
G26-14	GRN/YEL	4WD lock switch	0 – 1 V	Ignition switch turned ON position and 2WD/4WD switch kept pushing at 4WD lock position
			10 – 14 V	Ignition switch turned ON position and 2WD/4WD switch released at 4WD lock position
G26-15	—	—	—	—
G26-16	—	—	—	—
G26-17	—	—	—	—
G26-18	—	—	—	—
G26-19	—	—	—	—
G26-20	—	—	—	—
G26-21	BLU	Data link connector (DLC)	10 – 14 V	Ignition switch turned ON position
G26-22	RED	CAN communication line (High)	*2.5 – 3.6 V (“Reference waveform No.2: ”)	Ignition switch turned ON position
G26-23	WHT	CAN communication line (Low)	*1.6 – 2.5 V (“Reference waveform No.2: ”)	Ignition switch turned ON position

Terminal Number	Wire Color	Circuit	Normal Voltage	Condition
G26-24	ORN	Coupling air temperature sensor (ground)	About 2.5 V	Ignition switch turned ON position
G26-25	BRN	Coupling air temperature sensor (power)	About 2.5 V	Ignition switch turned ON position
G26-26	—	—	—	—

Reference waveform No.1

Coupling assembly signal

Measurement terminal	CH1: “G26-3” to “G26-2”
Oscilloscope setting	CH1: 5 V / DIV TIME: 400 μs / DIV
Measurement condition	• Run engine at idle speed and 2WD/4WD switch at 4WD lock position • Selector lever at other than “P” or “N” range (A/T model) • Depress accelerator pedal (M/T model)

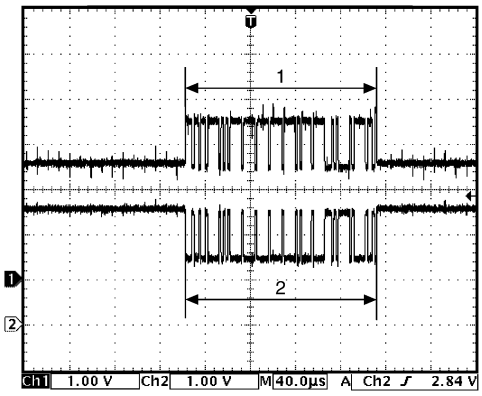


I7RW01320011-01

Reference waveform No.2

CAN communication signal

Measurement terminal	CH1: “G26-22” to “G26-10” CH2: “G26-23” to “G26-10”
Oscilloscope setting	CH1: 1 V / DIV, CH2: 1 V / DIV TIME: 400 μs / DIV
Measurement condition	Ignition switch ON position



I7RW01320012-01

1. CAN communication line signal (high)
2. CAN communication line signal (low)

Repair Instructions

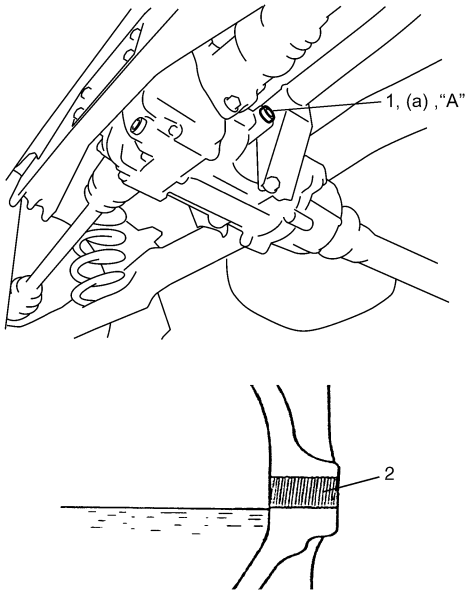
Rear Differential Oil Level Check

S6RW0C3206001

1) Lift up vehicle and check oil leakage. Repair leaky point, if any.
2) Remove oil level / filler plug (1) and check oil contamination and oil level is lower end of oil level / filler plug hole (2).
   If oil is excessive dirty or insufficient, replace oil or pour specified oil up to plug hole.
3) Apply sealant to thread of level / filler plug, and then tighten it to specified torque.

   "A": Sealant 99000–31260 (SUZUKI Bond No.1217G)

   Tightening torque
   Differential oil level / filler plug (a): 23 N·m (2.3 kgf-m, 17.0 lb-ft)



I5RW0A320015-01

Rear Differential Oil Change

S6RW0C3206002

1) Before changing oil, be sure to stop engine and lift vehicle horizontally.
2) With vehicle lifted up, check leakage.
   If leakage exists, correct it.

   NOTE

   Whenever vehicle is hoisted for any other service work than oil change, also be sure to check for oil leakage.

3) Remove oil filler plug (2).
4) Remove drain plug (1), and drain old oil.
5) Apply sealant to thread of drain plug (1), and tighten it to specified torque.

   "A": Sealant 99000–31260 (SUZUKI Bond No.1217G)

   Tightening torque
   Differential oil drain plug (a): 23 N·m (2.3 kgf-m, 17.0 lb-ft)

6) Pour new specified oil until oil level reaches bottom of oil filler plug hole (3) as shown in figure.

   NOTE

   - **Hypoid gear oil must be used for differential.**
   - **It is highly recommended to use API GL-5 80W-90 gear oil.**

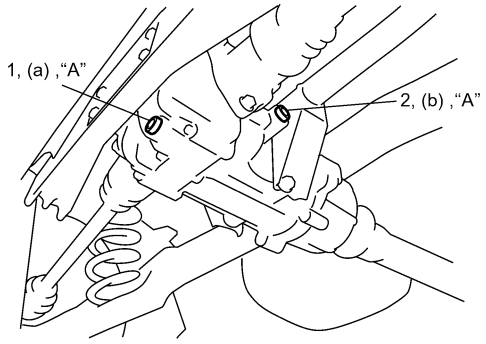
   Differential oil specification
   : API GL-5 (For SAE classification, refer to viscosity chart [A] in figure.)

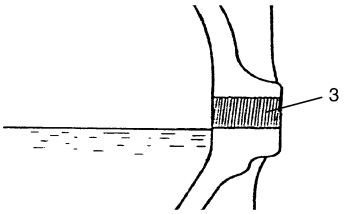
   Rear differential oil capacity
   Reference: 0.7 – 0.9 liters (1.5/1.2 – 1.9/1.6 US/ Imp. pt.)

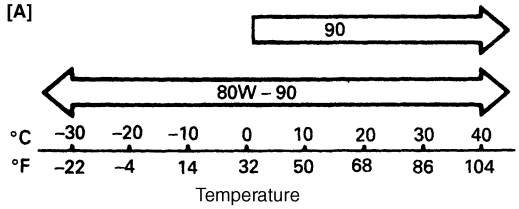
7) Apply sealant to thread of level / filler plug, and then tighten it to specified torque.

   "A": Sealant 99000–31260 (SUZUKI Bond No.1217G)

   Tightening torque
   Differential oil level / filler plug (b): 23 N·m (2.3 kgf-m, 17.0 lb-ft)







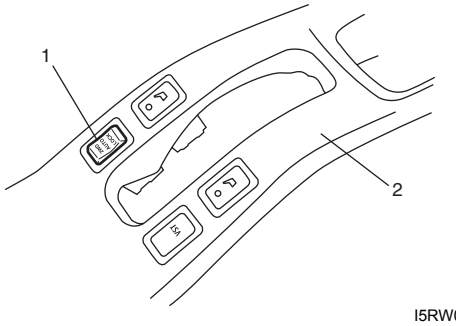
I5RW0A320016-02

2WD/4WD Switch Removal and Installation

S6RW0C3206003

Removal

1) Disconnect negative cable at battery.
2) Remove console box (2).
3) Remove 2WD/4WD switch (1) from console box.



I5RW0A320017-02

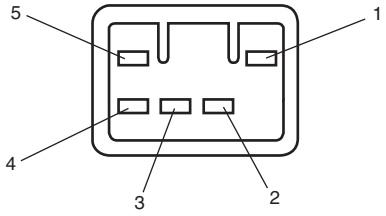
Installation

Reverse removal procedure for installation.

2WD/4WD Switch Inspection

S6RW0C3206004

Check 2WD/4WD switch for continuity between terminals at each switch position.
If check result is not as specified, replace switch.



Terminal / Switch position	1	2	3	4	5
2WD				○	○
AUTO		○	○	○	○
LOCK	○	○	○	○	○

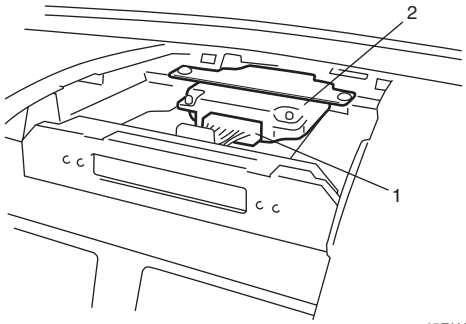
I5RW0A320018-02

4WD Control Module Removal and Installation

S6RW0C3206005

Removal

1) Disconnect negative cable at battery.
2) Remove center ventilation louver referring to “Center Ventilation Louver Removal and Installation in Section 7A”.
3) Disconnect connector (1) from 4WD control module.
4) Remove 4WD control module (2).



I5RW0A320019-01

Installation

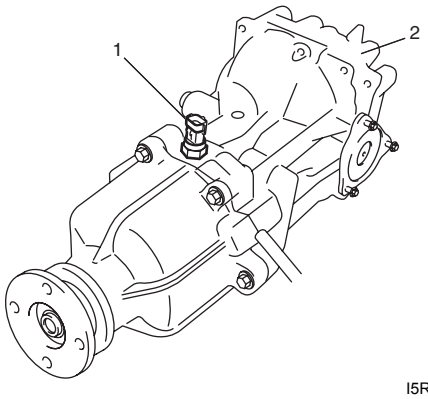
Reverse removal procedure for installation.

Coupling Air Temperature Sensor Removal and Installation

S6RW0C3206006

Removal

1) Dismount rear differential referring to “Rear Differential Dismounting and Remounting”.
2) Remove coupling air temperature sensor (1) from rear differential (2).



I5RW0A320020-02

Installation

Reverse removal procedure for installation, noting the following point.

- Tighten coupling air temperature sensor to specified torque.

Tightening torque
Coupling air temperature sensor: 18 N·m (1.8 kgf-m, 13.0 lb-ft)

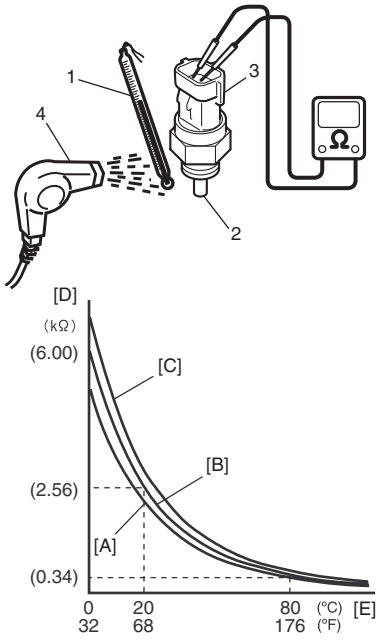
Coupling Air Temperature Sensor Inspection

S6RW0C3206007

⚠ CAUTION

Do not heat up coupling air temperature sensor more than 100 °C (212 °F). Otherwise, coupling air temperature sensor will be damaged.

- Blow hot air to temperature sensing part (2) of coupling air temperature sensor (3) using hot air drier (4) and measure resistance between sensor terminals while heating air gradually.
  If measured resistance does not show such characteristic as shown, replace air temperature sensor.



I5RW0A320021-01

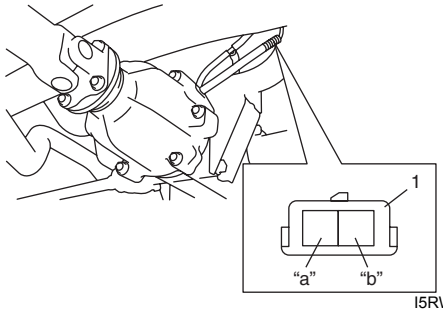
[A]: Lower limit	[D]: Resistance
[B]: Normal	[E]: Temperature
[C]: Upper limit	1. Temperature gauge

Coupling Assembly Inspection

S6RW0C3206008

- Check coupling assembly for oil leakage. If leakage exists, replace it.
- Measure resistance between “a” terminal and “b” terminal of coupling connector (1).
  If measured resistance is out of specification, check harness for open or short.
  If OK, replace coupling assembly.

Coupling assembly resistance
: 2 – 3 Ω



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