

POWER REAR GATE SYSTEM

PRG

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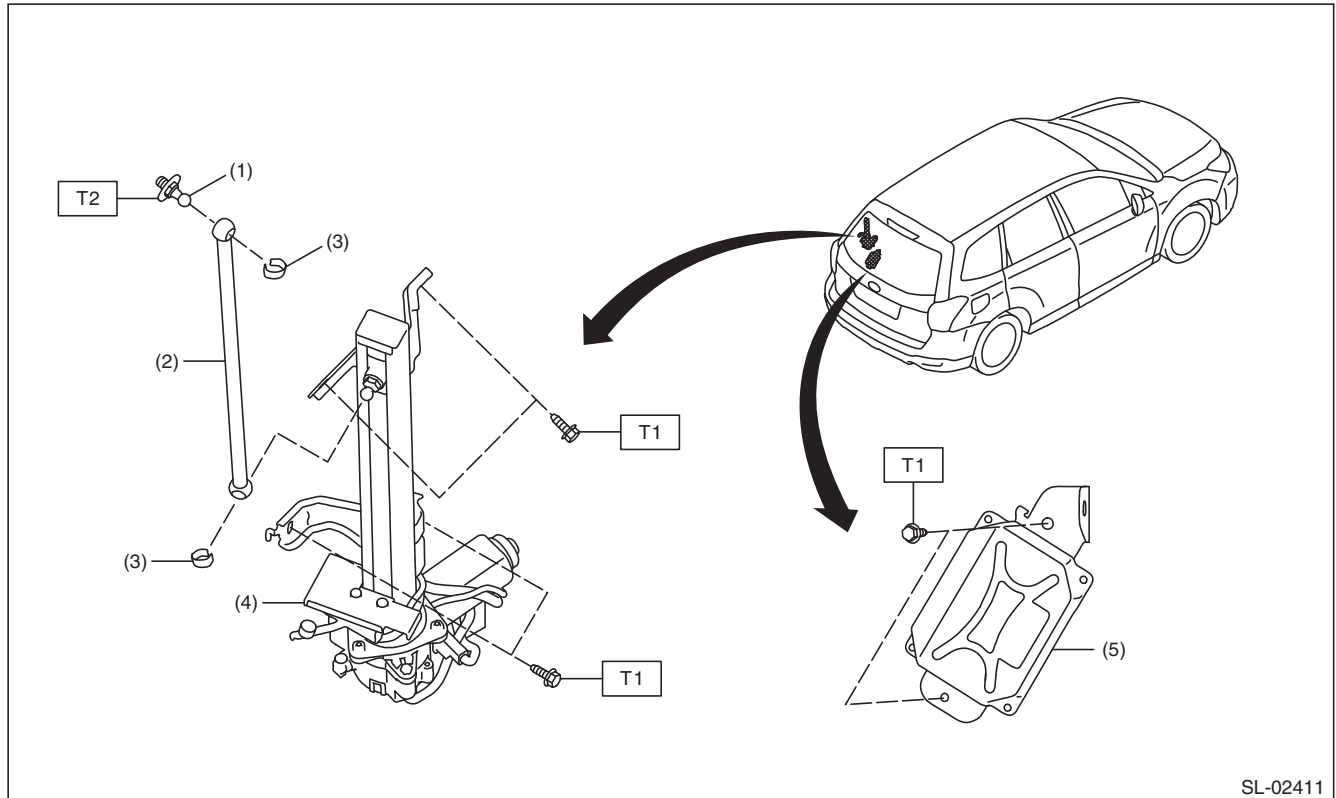
General Description

POWER REAR GATE SYSTEM

1. General Description

A: COMPONENT

1. UNIT AND REAR GATE



SL-02411

- | | |
|---------------------------|---|
| (1) Ball stud bolt | (4) Power rear gate drive unit (PRG D/U) |
| (2) Rod - power rear gate | (5) Power rear gate control module (PRG CM) |
| (3) Stop ring | |

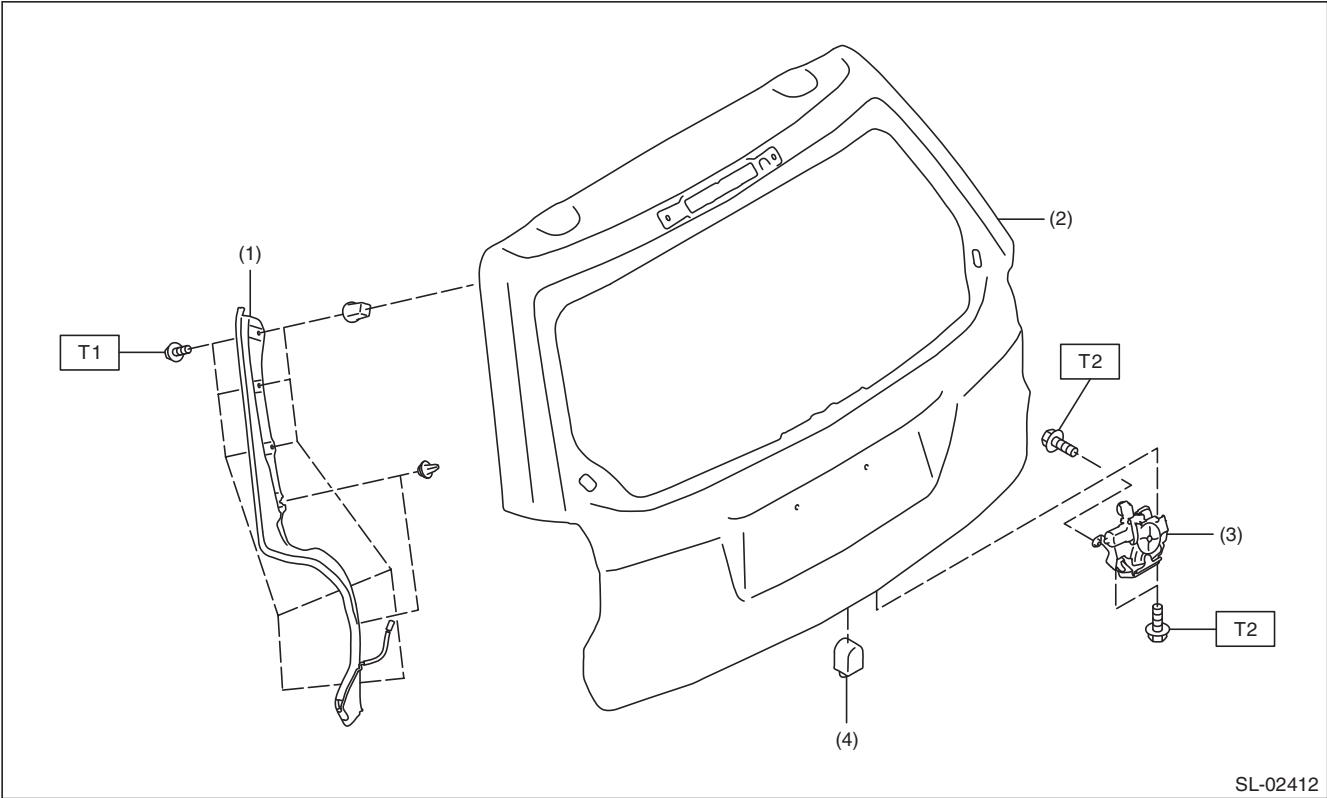
Tightening torque: N-m (kgf-m, ft-lb)

T1: 10 (1.02, 7.4)

T2: 20 (2.04, 14.8)

General Description

POWER REAR GATE SYSTEM



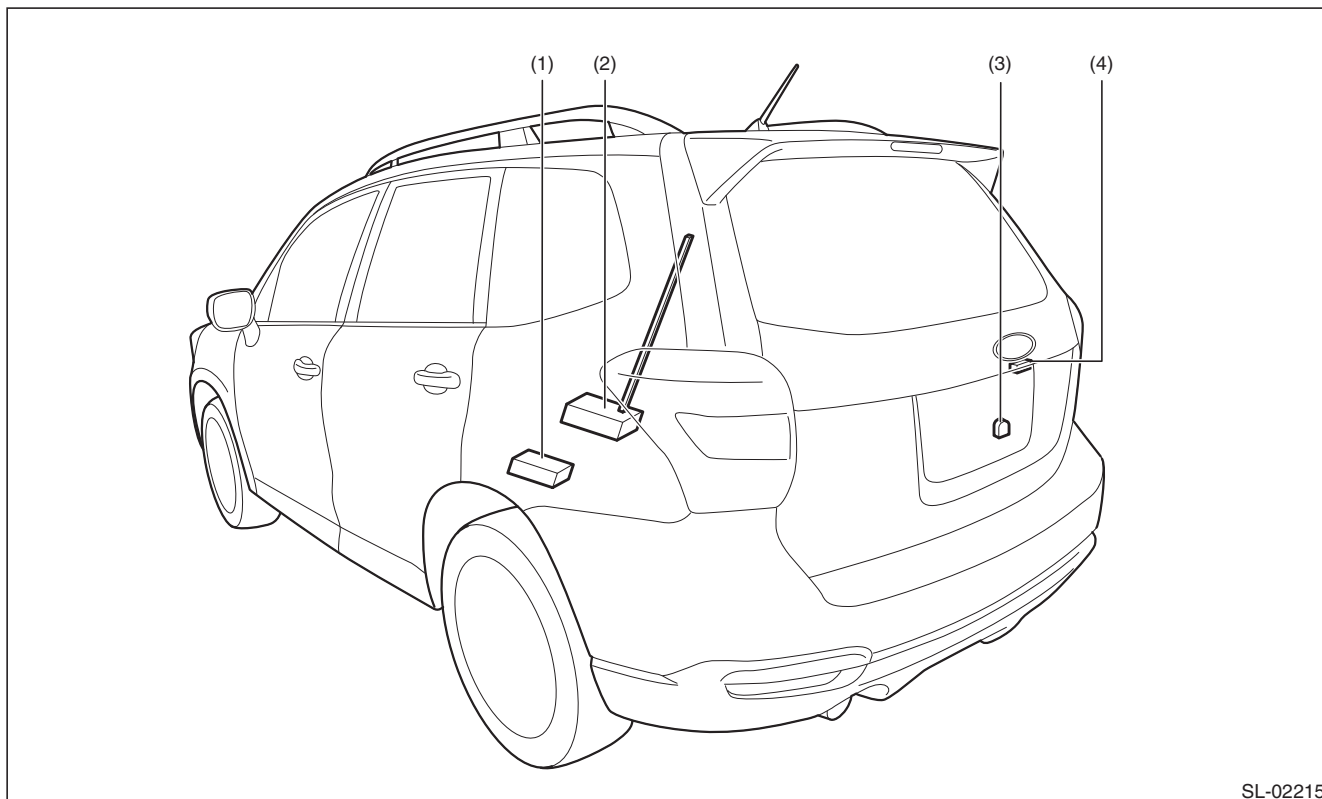
- | | |
|----------------------------------|---------------------------------|
| (1) Power rear gate touch sensor | (3) Power rear gate auto closer |
| (2) Rear gate | (4) Power rear gate buzzer |

Tightening torque: N·m (kgf-m, ft-lb)
T1: 1.5 (0.15, 1.1)
T2: 25 (2.55, 18.4)

General Description

POWER REAR GATE SYSTEM

2. POWER REAR GATE SYSTEM



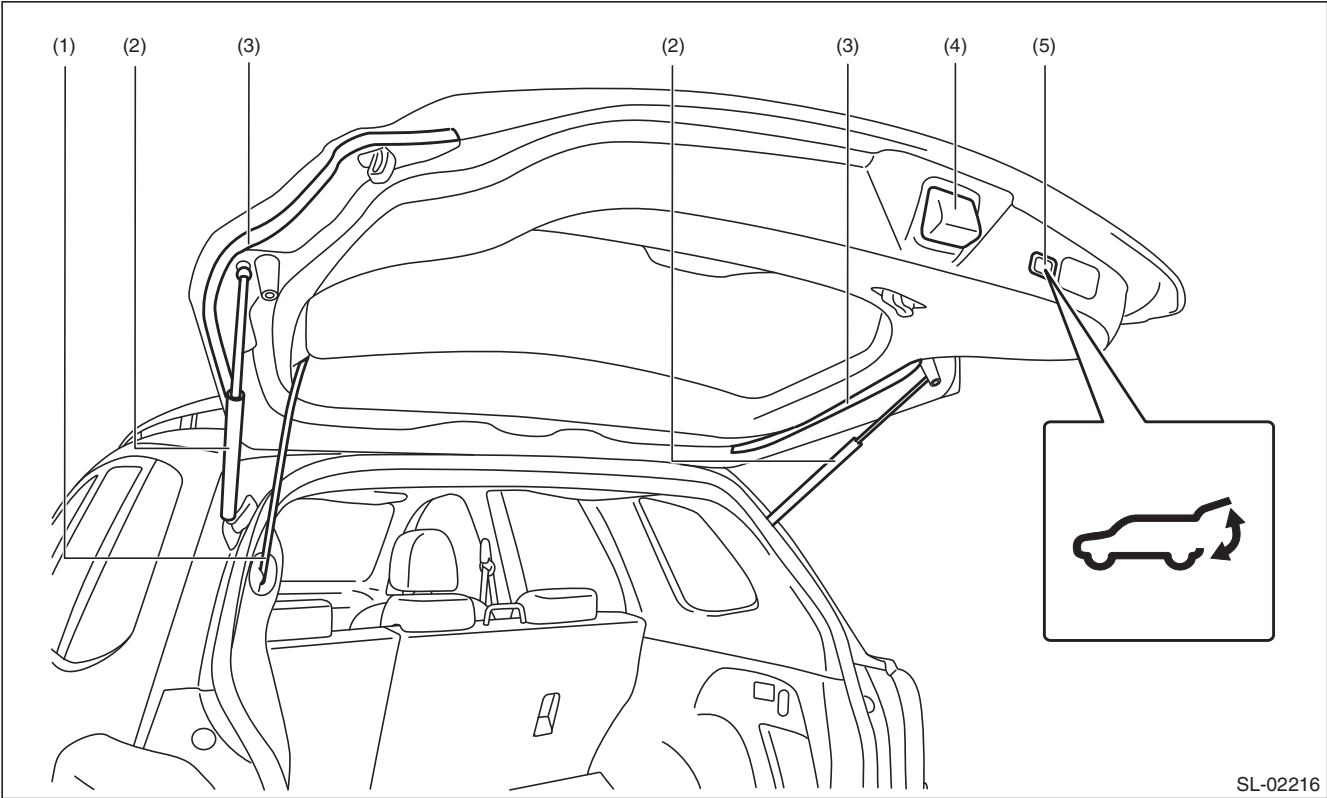
- (1) Power rear gate control module (PRG CM)
- (2) Power rear gate drive unit (PRG D/U)

- (3) Power rear gate buzzer

- (4) Rear gate opener button (PRG)

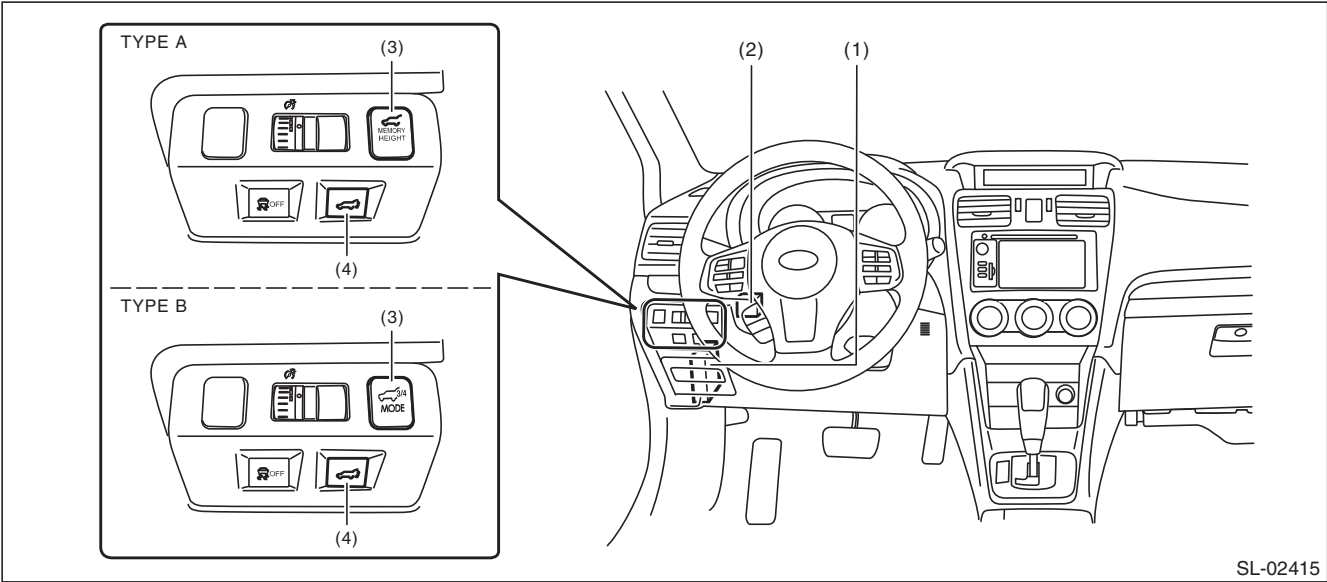
General Description

POWER REAR GATE SYSTEM



SL-02216

- | | | |
|---------------------------|----------------------------------|----------------------------------|
| (1) Rod - power rear gate | (3) Power rear gate touch sensor | (5) Power rear gate inner switch |
| (2) Gas damper | (4) Power rear gate auto closer | |



SL-02415

- | | | |
|---------------------------------|--------------------------|-------------------------------------|
| (1) Body integrated unit | (3) Memory height switch | (4) Power rear gate driver's switch |
| (2) Turn signal and hazard unit | | |

General Description

POWER REAR GATE SYSTEM

B: CAUTION

- Before disassembling or reassembling parts, always disconnect the battery ground cable from battery. When replacing the audio, control module and other parts provided with memory functions, record the memory contents before disconnecting the battery ground cable. Otherwise, the memory is cleared.
- Reassemble the parts in the reverse order of disassembly procedure unless otherwise indicated.
- Adjust parts to the given specifications.
- Connect the connectors securely during reassembly.
- After reassembly, close the rear gate and then connect the battery ground cable. Initialization of the power rear gate auto closer is necessary, when connection is performed with the rear gate open. <Ref. to PRG-8, INITIALIZATION, PROCEDURE, Power Rear Gate System.>
- After reassembly, make sure that the each component operates normally.

C: PREPARATION TOOL

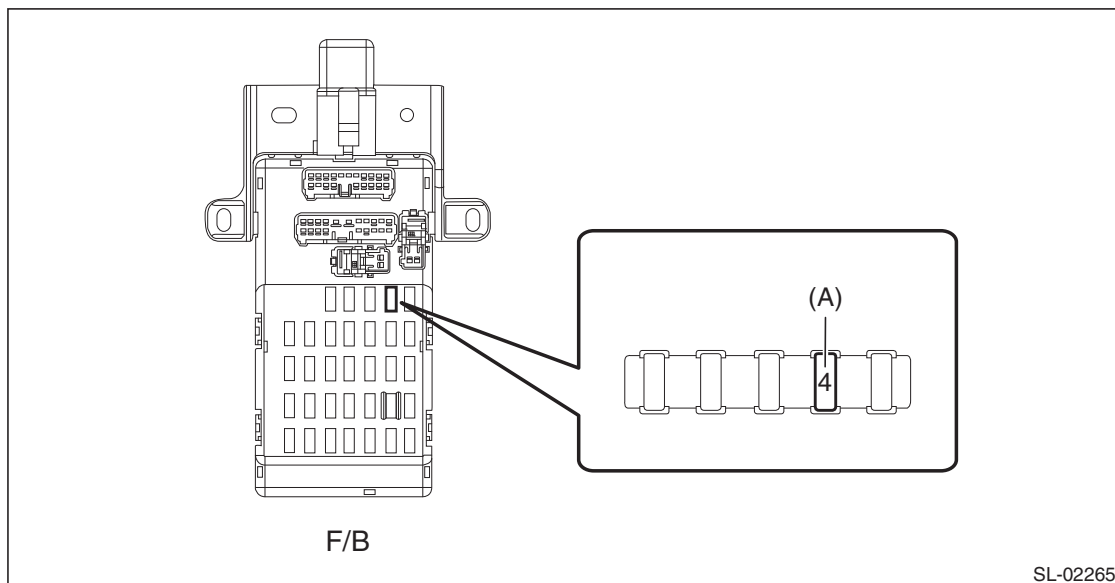
TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.

Relay and Fuse

POWER REAR GATE SYSTEM

2. Relay and Fuse

A: LOCATION



Relay & fuse box	Fuse 10 A (power rear gate control module)	(A)
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NOTE:

For other related fuses, refer to the wiring diagram. <Ref. to WI-24, Power Supply Circuit.>

B: INSPECTION

1. CHECK FUSE

- 1) Remove the fuse and inspect visually.
- 2) If the fuse is blown out, replace the fuse.

NOTE:

If the fuse is blown again, check the system wiring harness.

Power Rear Gate System

POWER REAR GATE SYSTEM

3. Power Rear Gate System

A: WIRING DIAGRAM

Refer to "Power Rear Gate System" in the wiring diagram. <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>

B: INSPECTION

Refer to "Basic Diagnostic Procedure" of "POWER REAR GATE SYSTEM (DIAGNOSTICS)". <Ref. to PRG(diag)-2, Basic Diagnostic Procedure.>

C: PROCEDURE

1. INITIALIZATION

NOTE:

Perform the initialization of the power rear gate auto closer, when the battery ground cable is connected with the rear gate open. The initialization is not necessary in other cases.

- 1) Slowly close the rear gate until it is half-shut (not fully latched).
- 2) Make sure that the power rear gate auto closer operates and the rear gate is pulled to the full-lock position.
- 3) Make sure that the power rear gate system operates normally.

D: NOTE

For procedure of each component in the power rear gate system, refer to the respective section.

- Power rear gate control module (PRG CM): <Ref. to PRG-9, Power Rear Gate Control Module.>
- Power rear gate drive unit (PRG D/U): <Ref. to PRG-10, Power Rear Gate Drive Unit.>
- Rod - power rear gate: <Ref. to PRG-13, Power Rear Gate Rod.>
- Power rear gate auto closer: <Ref. to PRG-15, Power Rear Gate Auto Closer.>
- Power rear gate touch sensor: <Ref. to PRG-19, Power Rear Gate Touch Sensor.>
- Power rear gate buzzer: <Ref. to PRG-20, Power Rear Gate Buzzer.>
- Power rear gate inner switch: <Ref. to PRG-21, Power Rear Gate Inner Switch.>
- Power rear gate driver's switch: <Ref. to PRG-22, Power Rear Gate Driver's Switch.>
- Memory height switch: <Ref. to PRG-23, Memory Height Switch.>
- Power rear gate opener button (PRG): <Ref. to PRG-25, Rear Gate Opener Button.>



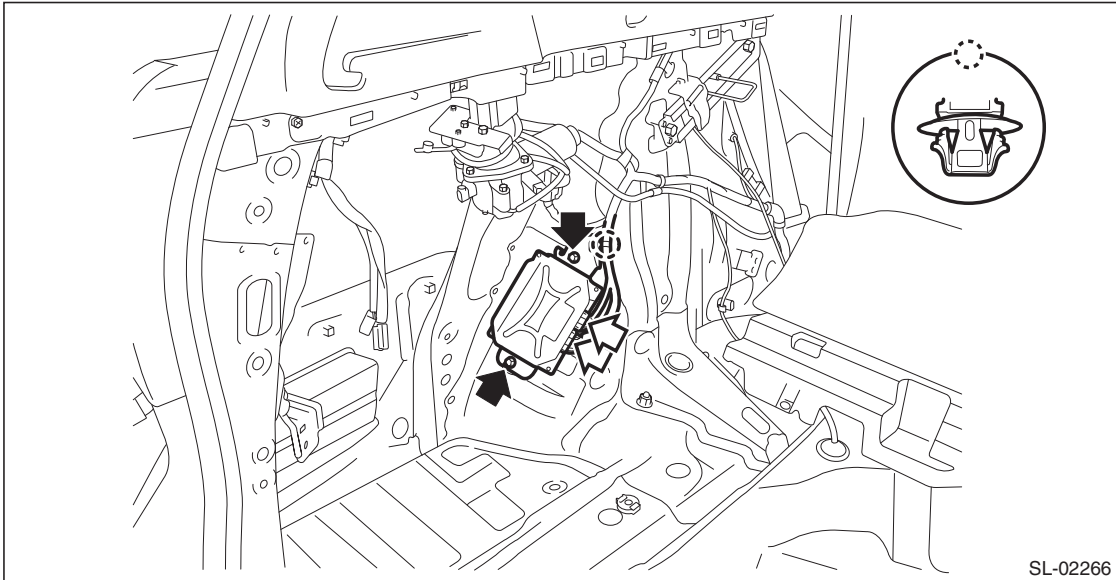
Power Rear Gate Control Module

POWER REAR GATE SYSTEM

4. Power Rear Gate Control Module

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the trim panel - rear apron. <Ref. to EI-102, REMOVAL, Rear Quarter Trim.>
- 3) Remove the power rear gate control module (PRG CM).
 - (1) Disconnect the connector.
 - (2) Remove the bolts and harness clips and remove the power rear gate control module (PRG CM).



B: INSTALLATION

Install each part in the reverse order of removal.

Tightening torque:

Power rear gate control module (PRG CM): 10 N·m (1.02 kgf-m, 7.4 ft-lb)

Power Rear Gate Drive Unit

POWER REAR GATE SYSTEM

5. Power Rear Gate Drive Unit

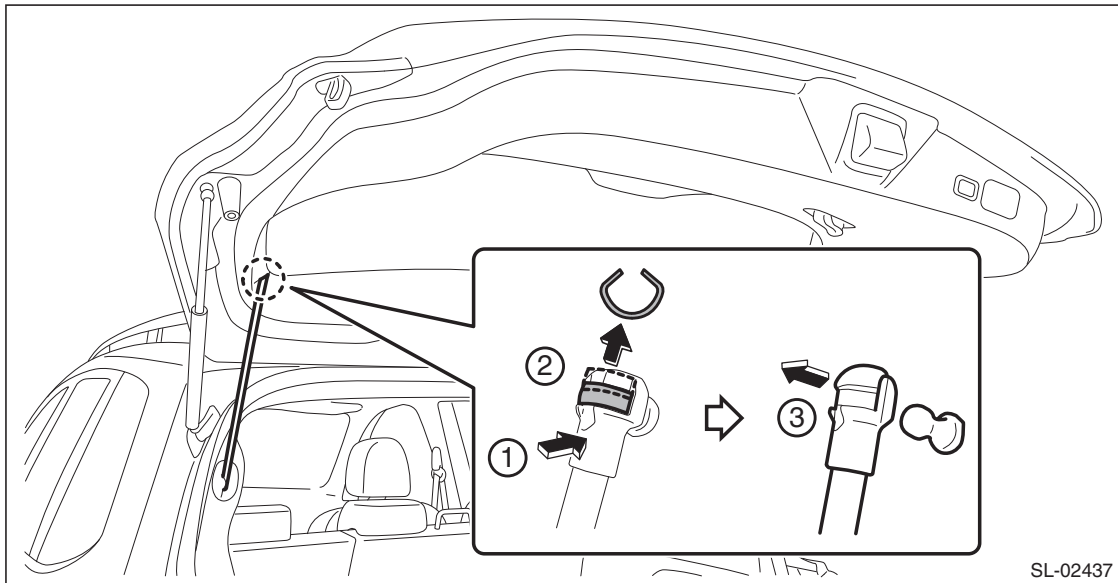
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the rod - power rear gate.
 - (1) Disconnect the upper part of the rod - power rear gate from the rear gate.

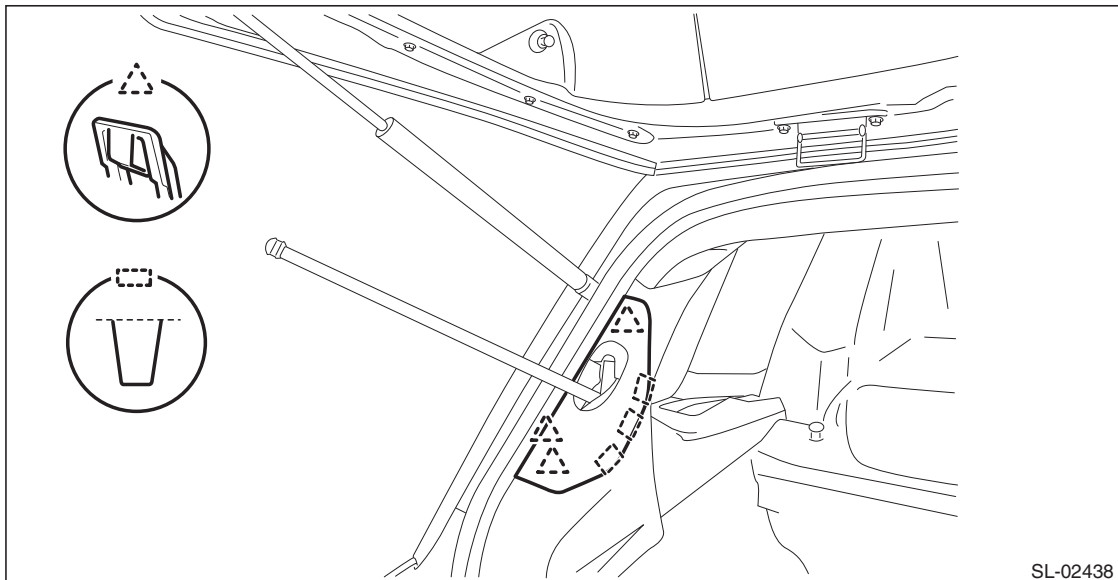
CAUTION:

Using a small flat tip screwdriver wrapped with protective tape, remove the part by gradually applying force. Forcibly removing the part may deform the stop ring.

1. Press the rod against the ball stud bolt.
2. With the rod pressed, remove the stop ring while sliding along the ball housing groove.
3. Disconnect the rod from ball stud bolt.



- (2) Release the claws and then remove the cap - rear quarter pillar UPR.



- (3) Disconnect the lower part of the rod - power rear gate from the power rear gate drive unit (PRG D/U), and then remove the rod - power rear gate.

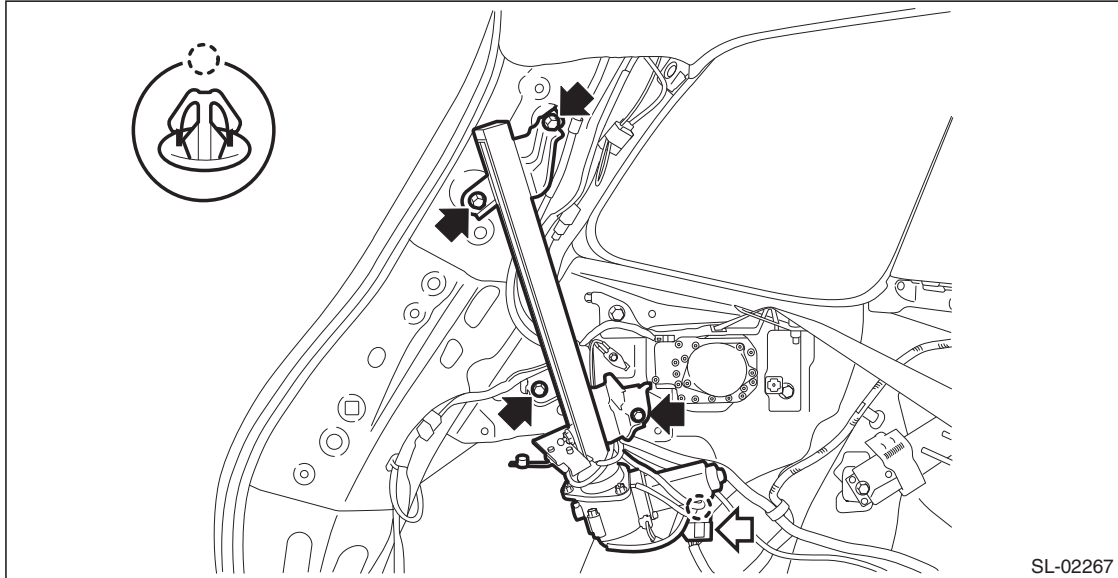
NOTE:

Perform the same procedures as for the upper part of rod - power rear gate.

Power Rear Gate Drive Unit

POWER REAR GATE SYSTEM

- 3) Remove the trim panel - rear apron and the trim panel - rear quarter pillar UPR. <Ref. to EI-102, REMOV-AL, Rear Quarter Trim.>
- 4) Remove the power rear gate drive unit (PRG D/U).
 - (1) Release the claws, and disconnect the connector.
 - (2) Remove the bolts, release the claw, and then remove the power rear gate drive unit (PRG D/U).



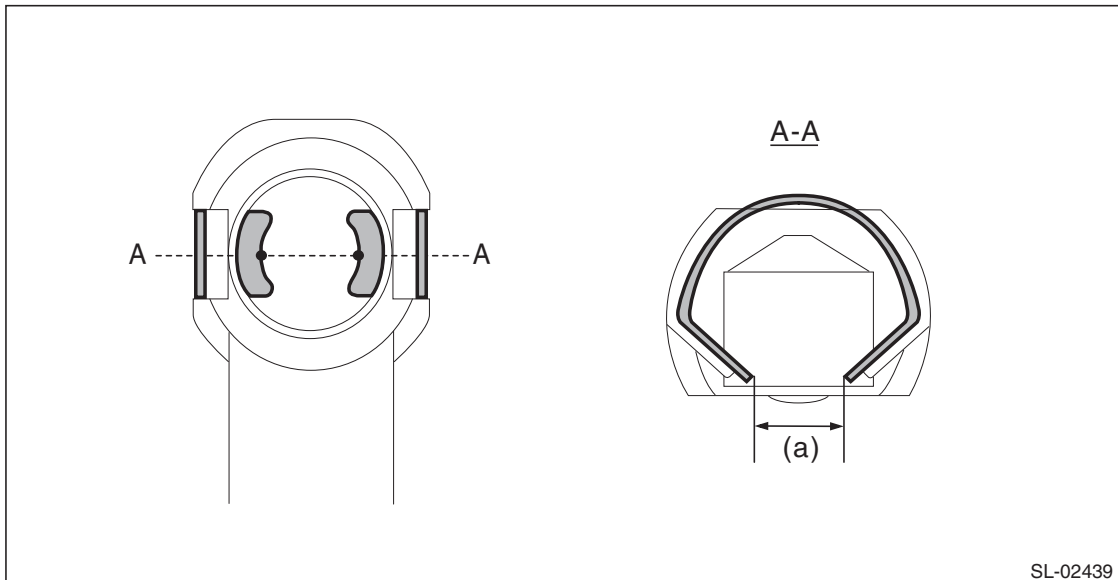
B: INSTALLATION

- 1) Install the stop ring to the rod - power rear gate.

CAUTION:

Align the stop ring to the ball housing groove, and attach the ring by gradually applying force, while paying attention not to deform it.

- 2) With the stop ring installed, check the clearance (a) of the stop ring.



Specification:

6.4 — 7.2 mm (0.25 — 0.28 in)

Replace the stop ring if the inspection result is not within the standard value.

Power Rear Gate Drive Unit

POWER REAR GATE SYSTEM

3) Install each part in the reverse order of removal.

CAUTION:

- After installing the power rear gate drive unit (PRG D/U), check that the temporary stop lock mechanism is unlocked, and then move the ball stud bolt to the top position.
- When installing the rod, check that the stop ring and ball stud bolt are vertically placed, and then slowly press in the rod.

Tightening torque:

Power rear gate drive unit (PRG D/U): 10 N·m (1.02 kgf·m, 7.4 ft·lb)

C: INSPECTION

1. RAIL AND SLIDER

Pull the emergency lever to check that the temporary stop lock mechanism operates properly. Move the ball stud bolt along the rail to check for play or stuck. Replace the power rear gate drive unit (PRG D/U), if it is found defective.

2. ACTUATOR

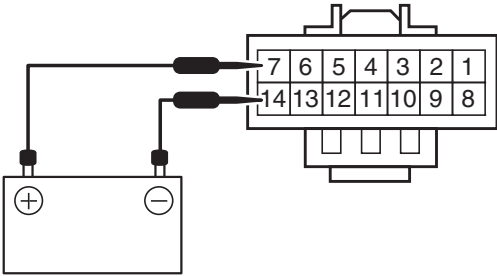
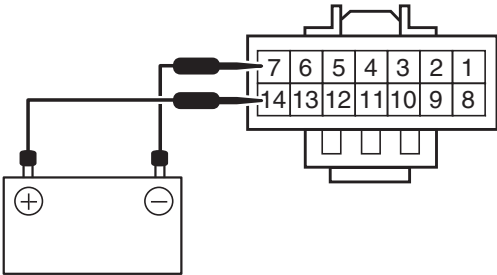
UNIT INSPECTION

Preparation tool:

Circuit tester

1) Check motor operation

Check the motor operation when battery voltage is applied between the terminals of motor.

Terminal No.	Inspection conditions	Specification	Connection diagram
7 (+) — 14 (–)	Connect battery to the terminals	OPEN rotation	 SL-02435
14 (+) — 7 (–)		CLOSE rotation	 SL-02436

2) Replace the power rear gate drive unit (PRG D/U), if it is found defective.

6. Power Rear Gate Rod

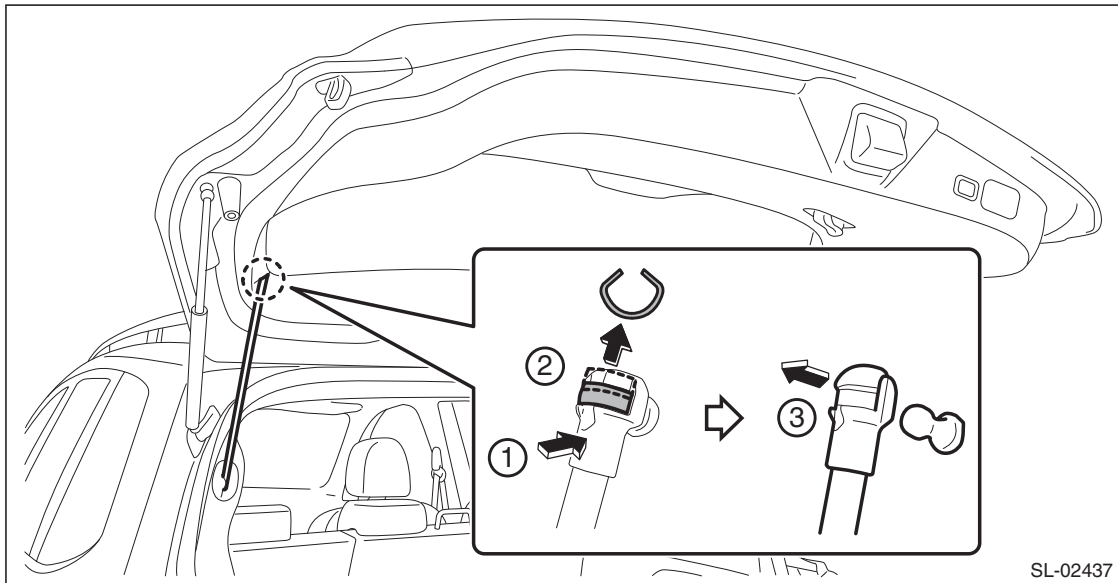
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the rod - power rear gate.
 - (1) Disconnect the upper part of the rod - power rear gate from the rear gate.

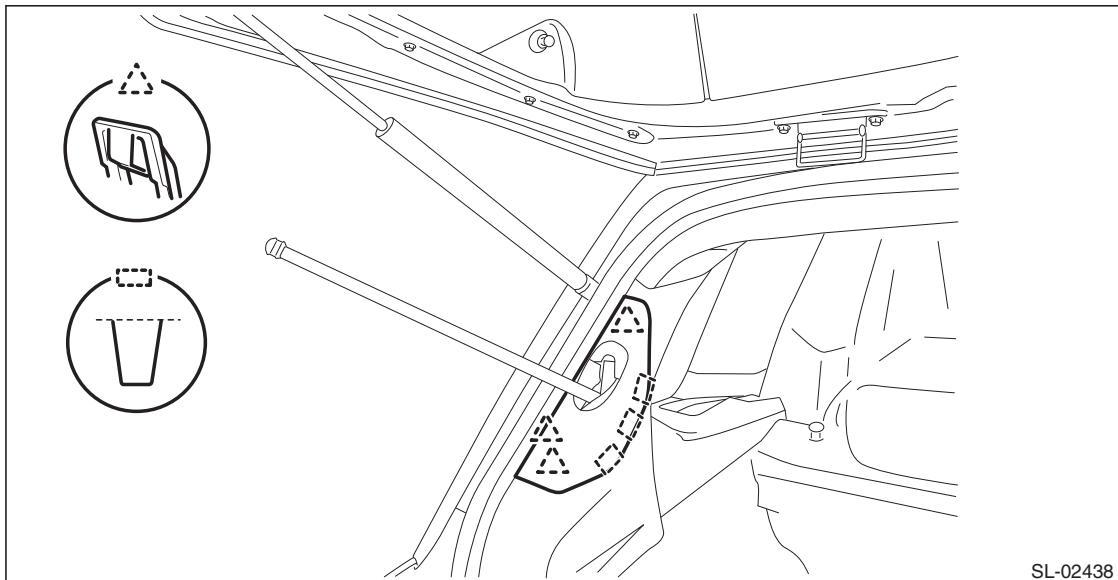
CAUTION:

Using a small flat tip screwdriver wrapped with protective tape, remove the part by gradually applying force. Forcibly removing the part may deform the stop ring.

1. Press the rod against the ball stud bolt.
2. With the rod pressed, remove the stop ring while sliding along the ball housing groove.
3. Disconnect the rod from ball stud bolt.



- (2) Release the claws and then remove the cap - rear quarter pillar UPR.



- (3) Disconnect the lower part of the rod - power rear gate from the power rear gate drive unit (PRG D/U), and then remove the rod - power rear gate.

NOTE:

Perform the same procedures as for the upper part of rod - power rear gate.

Power Rear Gate Rod

POWER REAR GATE SYSTEM

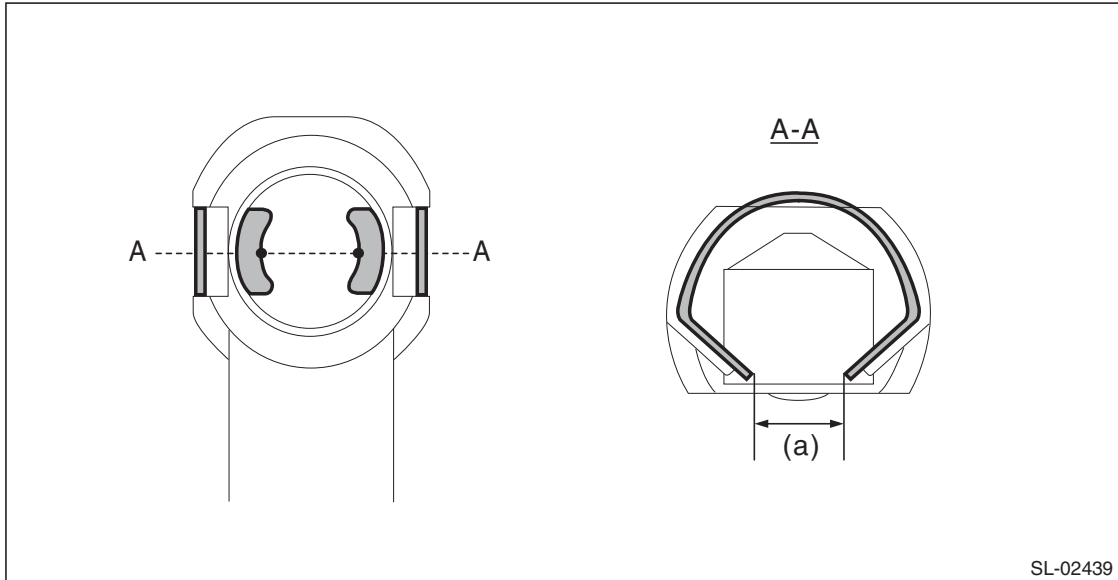
B: INSTALLATION

1) Install the stop ring to the rod - power rear gate.

CAUTION:

Align the stop ring to the ball housing groove, and attach the ring by gradually applying force, while paying attention not to deform it.

2) With the stop ring installed, check the clearance (a) of the stop ring.



Specification:

6.4 — 7.2 mm (0.25 — 0.28 in)

Replace the stop ring if the inspection result is not within the standard value.

3) Install each part in the reverse order of removal.

CAUTION:

When installing the rod, check that the stop ring and ball stud bolt are vertically placed, and then slowly press in the rod.

C: INSPECTION

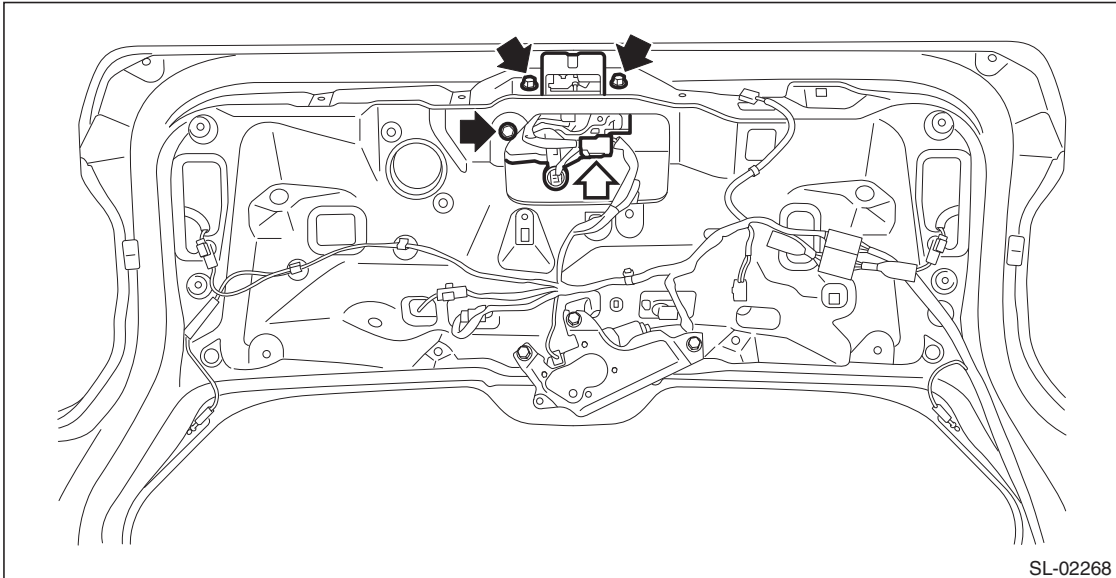
1) Check the ball housing and ball stud bolt of the rod - power rear gate for abnormal play, wear or bent.

2) Replace the rod - power rear gate if defective.

7. Power Rear Gate Auto Closer

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the trim panel - rear gate LWR. <Ref. to EI-122, REMOVAL, Rear Gate Trim.>
- 3) Remove the power rear gate auto closer.
 - (1) Disconnect the connector.
 - (2) Remove the bolts, and then remove the power rear gate auto closer.



B: INSTALLATION

Install each part in the reverse order of removal.

Tightening torque:

Power rear gate auto closer: 25 N·m (2.55 kgf-m, 18.4 ft-lb)

Power Rear Gate Auto Closer

POWER REAR GATE SYSTEM

C: INSPECTION

1. LATCH

Pull the emergency lever to check that the latch operates properly.

If latch deformation, abnormal wear, or unsmooth lock operation is observed, replace the power rear gate auto closer.

2. ACTUATOR

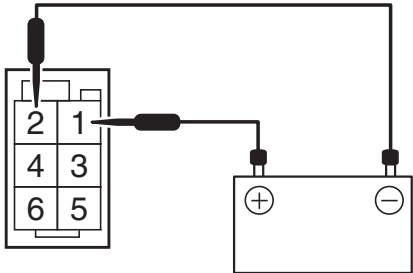
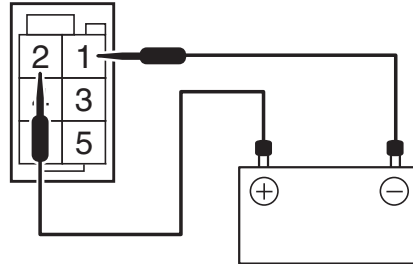
UNIT INSPECTION

Preparation tool:

Circuit tester

1) Check motor operation

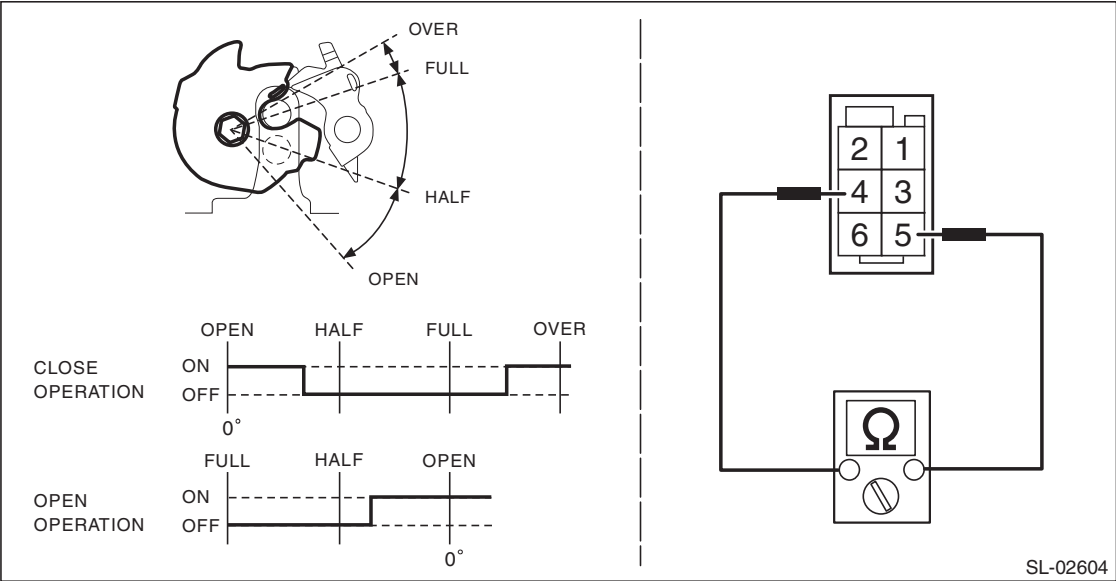
Check the motor operation when battery voltage is applied between the terminals of motor.

Terminal No.	Inspection conditions	Specification	Connection diagram
1 (+) — 2 (–)	Connect battery to the terminals	OPEN rotation	 SL-02432
2 (+) — 1 (–)		CLOSE rotation	 SL-02431

Power Rear Gate Auto Closer

POWER REAR GATE SYSTEM

- 2) Check switch
- Check the resistance between switch terminals.
- Latch switch



CLOSE operation

Terminal No.	Inspection conditions	Standard
5 — 4	OPEN	Less than 1 Ω
	OPEN → HALF	Less than 1 Ω → 10 kΩ or more
	HALF	10 kΩ or more
	FULL	10 kΩ or more
	OVER	10 kΩ or more → less than 1 Ω

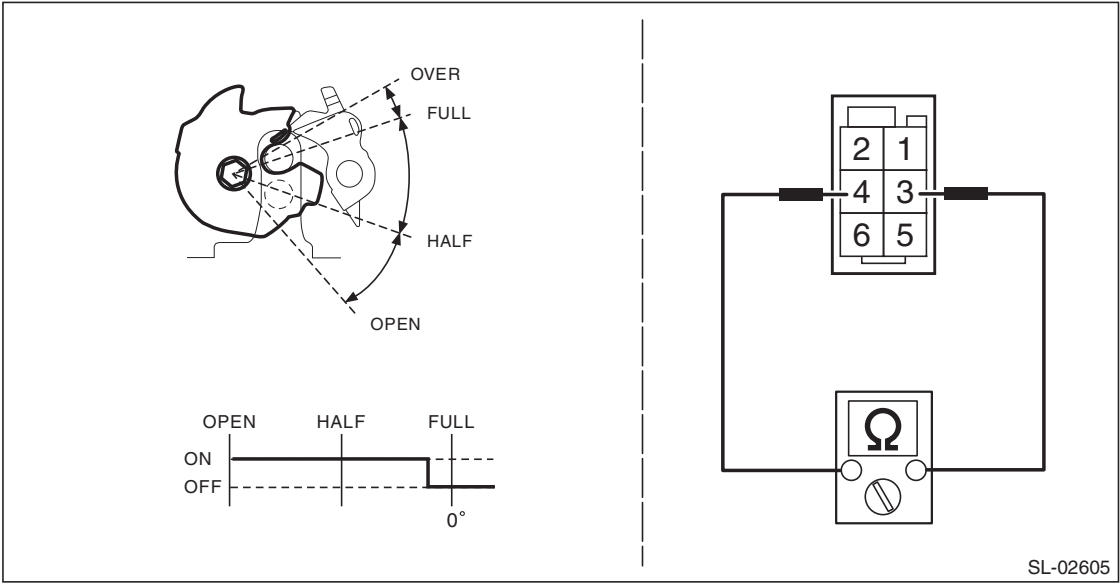
OPEN operation

Terminal No.	Inspection conditions	Standard
5 — 4	FULL	10 kΩ or more
	HALF	10 kΩ or more
	HALF → OPEN	10 kΩ or more → less than 1 Ω
	OPEN	Less than 1 Ω

Power Rear Gate Auto Closer

POWER REAR GATE SYSTEM

- Courtesy switch



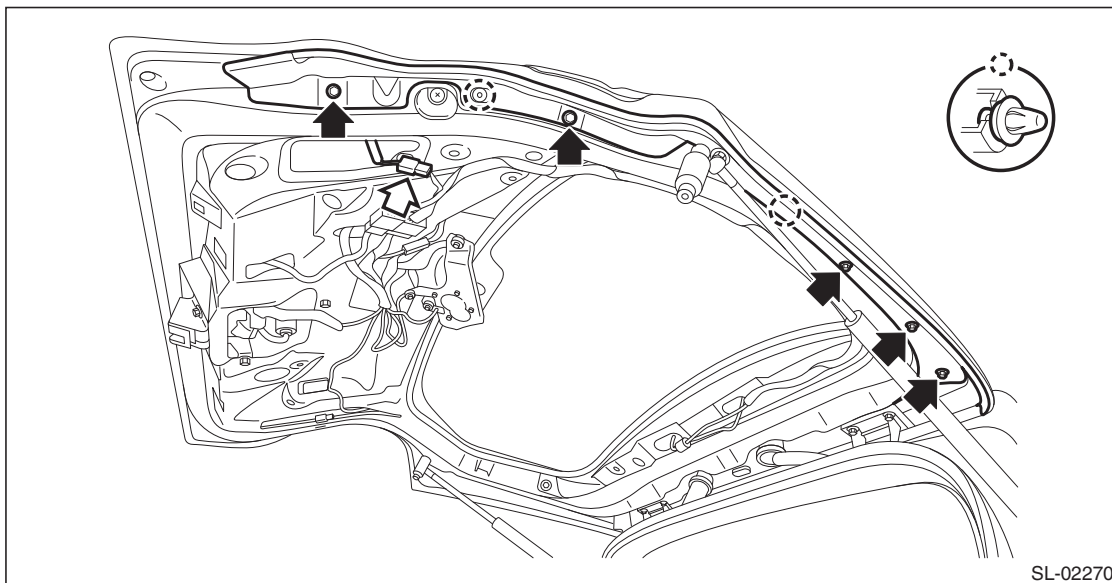
Terminal No.	Inspection conditions	Standard
3 — 4	OPEN	Less than 1 Ω
	OPEN → HALF	Less than 1 Ω → 10 kΩ or more
	HALF	10 kΩ or more
	FULL	10 kΩ or more
	OVER	10 kΩ or more → less than 1 Ω

3) Replace the power rear gate auto closer if it is found defective.

8. Power Rear Gate Touch Sensor

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the trim panel - rear gate LWR. <Ref. to EI-122, REMOVAL, Rear Gate Trim.>
- 3) Remove the power rear gate touch sensor.
 - (1) Disconnect the connector.
 - (2) Remove the bolts, release the clips, and then remove the power rear gate touch sensor.



B: INSTALLATION

Install each part in the reverse order of removal.

Tightening torque:

Power rear gate touch sensor: 1.5 N·m (0.15 kgf-m, 1.1 ft-lb)

C: INSPECTION

UNIT INSPECTION

Preparation tool:

Circuit tester

- 1) Visually check the touch sensor for cracks or damages, and replace as necessary.
- 2) Check the resistance between touch sensor terminals.

Terminal No.	Inspection conditions	Standard	Connection diagram
1 — 2	ON (with the switch pressed)	Less than 100 Ω	
	OFF (always)	1 kΩ	

SL-02430

- 3) Replace the power rear gate touch sensor if the inspection result is not within the standard value.

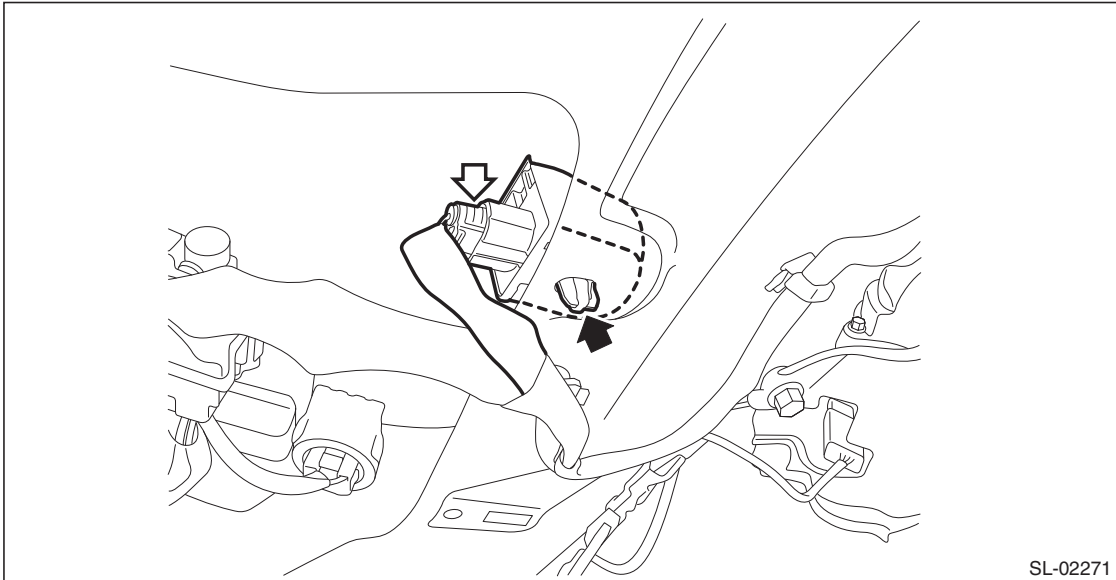
Power Rear Gate Buzzer

POWER REAR GATE SYSTEM

9. Power Rear Gate Buzzer

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the trim panel - rear gate LWR. <Ref. to EI-122, REMOVAL, Rear Gate Trim.>
- 3) Remove the power rear gate buzzer.
 - (1) Disconnect the connector.
 - (2) Release the claws, and then remove the power rear gate buzzer.



B: INSTALLATION

Install each part in the reverse order of removal.

C: INSPECTION

Connect the battery between the power rear gate buzzer terminals, and check whether the buzzer sounds. If the buzzer does not sound, replace the power rear gate buzzer.

Power Rear Gate Inner Switch

POWER REAR GATE SYSTEM

10. Power Rear Gate Inner Switch

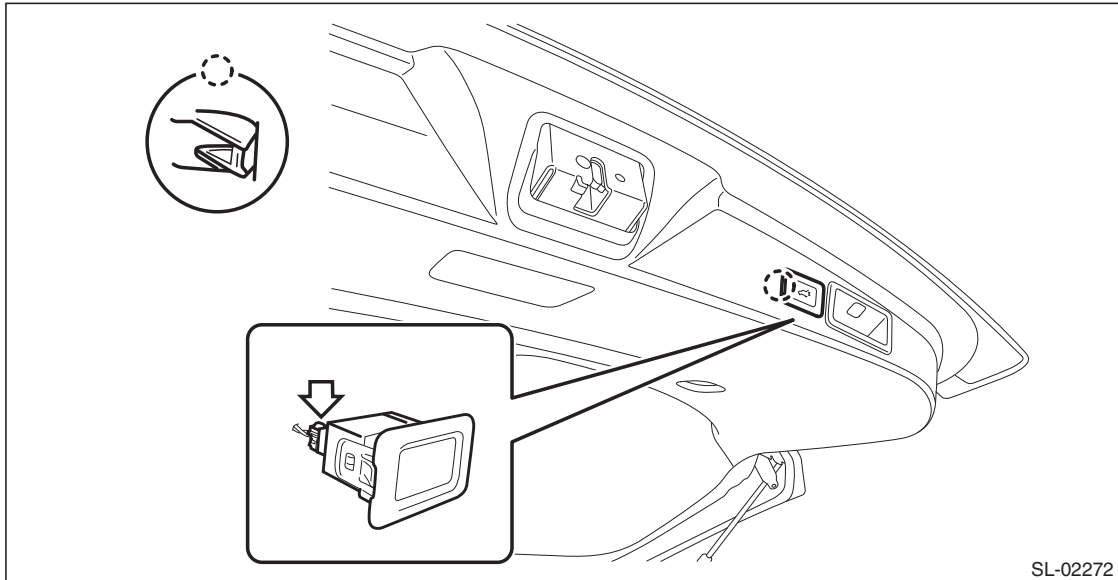
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the power rear gate inner switch.
 - (1) Release the claws and pull out the power rear gate inner switch rearward.

NOTE:

Insert a flat tip screwdriver wrapped with protective tape into the slit on the left.

- (2) Disconnect the connector and remove the power rear gate inner switch.



B: INSTALLATION

Install each part in the reverse order of removal.

C: INSPECTION

UNIT INSPECTION

Preparation tool:

Circuit tester

- 1) Check the resistance between switch terminals.

Terminal No.	Inspection conditions	Standard	Connection diagram
1 — 2	Switch OFF	1 M Ω or more	SL-02277
	Switch ON	Less than 1 Ω	

- 2) Replace the power rear gate inner switch, if the inspection result is not within the standard value.

Power Rear Gate Driver's Switch

POWER REAR GATE SYSTEM

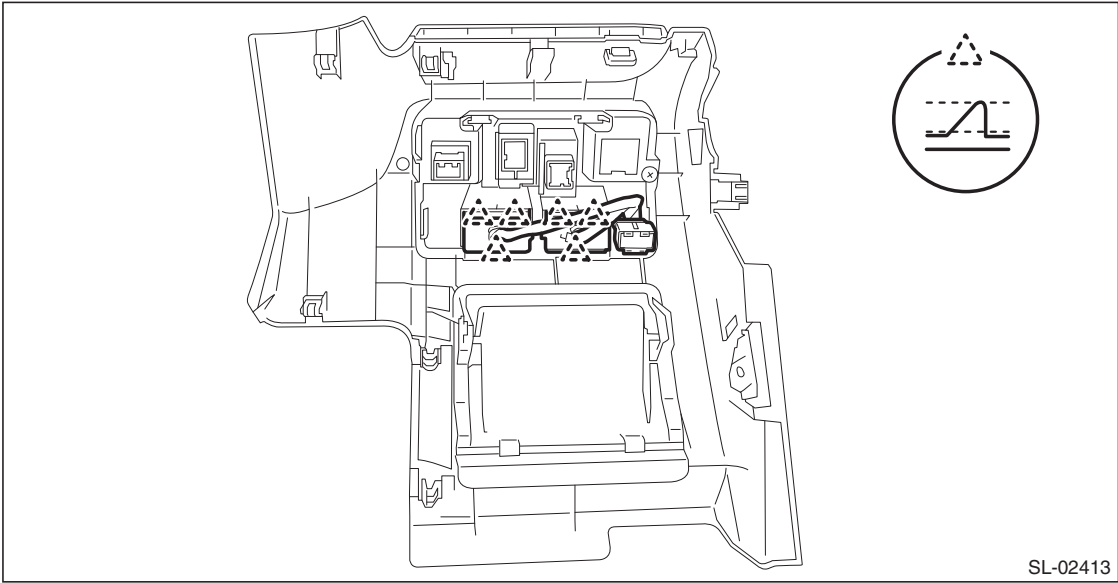
11.Power Rear Gate Driver's Switch

A: REMOVAL

NOTE:

The power rear gate driver's switch is integrated with the VDC OFF switch.

- 1) Disconnect the ground cable from battery.
- 2) Remove the cover assembly - instrument panel LWR driver. <Ref. to EI-59, REMOVAL, Instrument Panel Lower Cover.>
- 3) Remove the VDC OFF & power rear gate driver's switch.
 - (1) Release the claws and pull out each switch.
 - (2) Remove the connector from the panel - switch, and then remove the VDC OFF & power rear gate driver's switch.



B: INSTALLATION

Install each part in the reverse order of removal.

C: INSPECTION

UNIT INSPECTION

Preparation tool:

Circuit tester

- 1) Check the resistance between switch terminals.

Terminal No.	Inspection conditions	Standard	Connection diagram
1 — 2	Switch OFF	1 MΩ or more	
	Switch ON	Less than 1 Ω	

- 2) Replace the VDC OFF & power rear gate driver's switch, if the inspection result is not within the standard value.

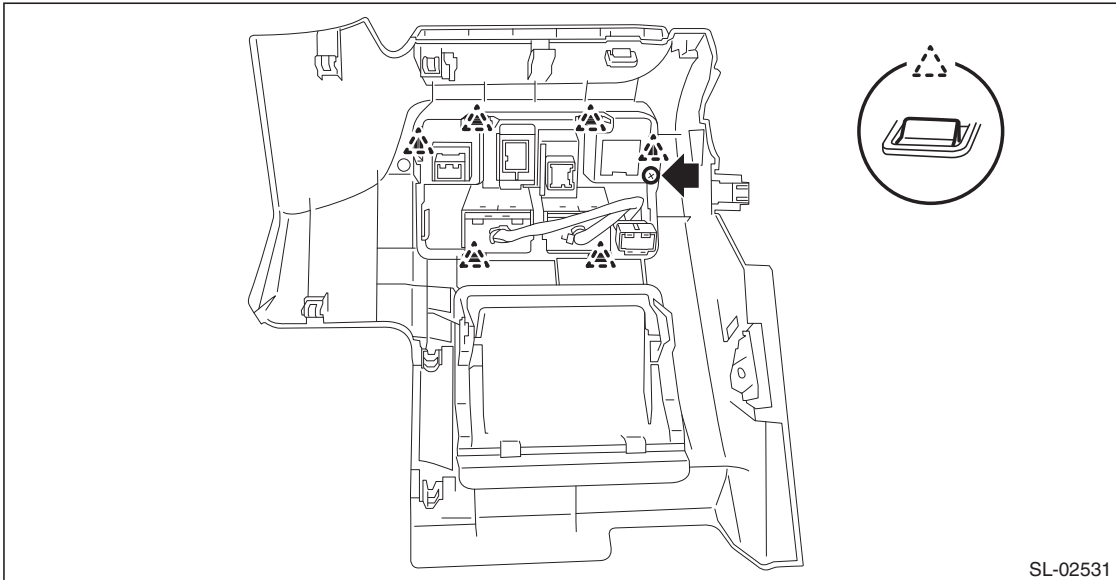
Memory Height Switch

POWER REAR GATE SYSTEM

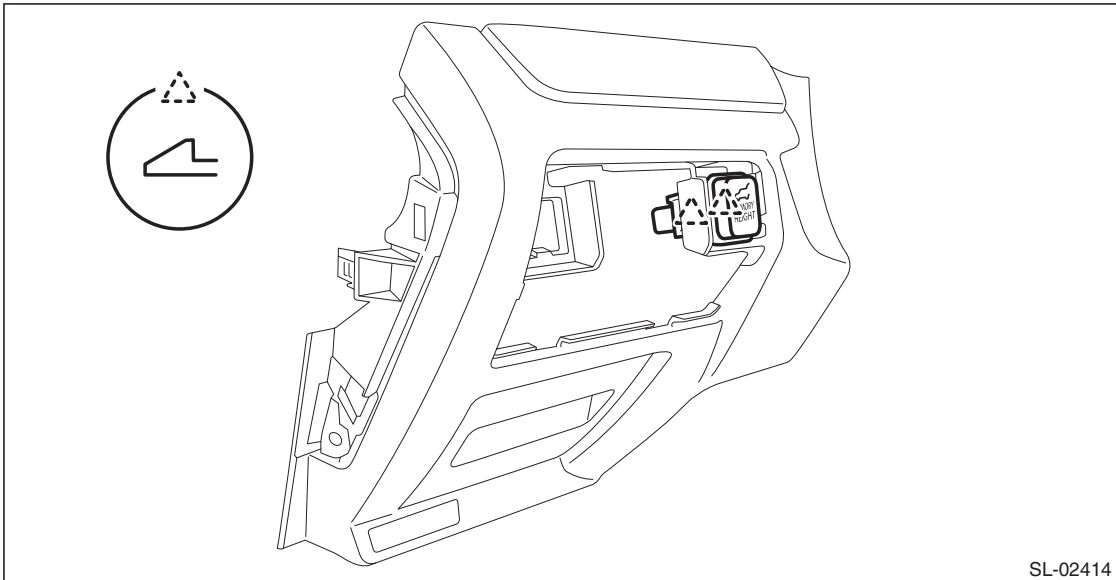
12.Memory Height Switch

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the cover assembly - instrument panel LWR driver. <Ref. to EI-59, REMOVAL, Instrument Panel Lower Cover.>
- 3) Remove the memory height switch.
 - (1) Remove the screw, release the claws, and then remove the panel - switch.



- (2) Release the claws and remove the memory height switch.



B: INSTALLATION

Install each part in the reverse order of removal.

Memory Height Switch

POWER REAR GATE SYSTEM

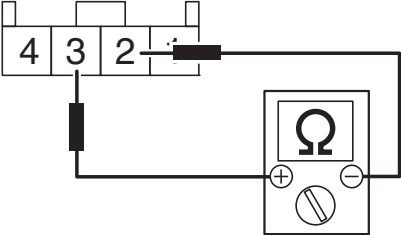
C: INSPECTION

UNIT INSPECTION

Preparation tool:

Circuit tester

1) Check the resistance between switch terminals.

Terminal No.	Inspection conditions	Standard	Connection diagram
2 — 3	Switch OFF	1 M Ω or more	
	Switch ON	Less than 1 Ω	

SL-02278

2) Replace the memory height switch, if the inspection result is not within the standard value.



13.Rear Gate Opener Button

A: NOTE

Refer to the "SECURITY AND LOCKS" section for rear gate opener button (PRG). <Ref. to SL-48, Rear Gate Opener Button.>

Body Integrated Unit

POWER REAR GATE SYSTEM

14. Body Integrated Unit

A: NOTE

Refer to the "SECURITY AND LOCKS" section for body integrated unit. <Ref. to SL-74, Body Integrated Unit.>

Turn Signal Light & Hazard Light Unit

POWER REAR GATE SYSTEM

15. Turn Signal Light & Hazard Light Unit

A: NOTE

Refer to the "LIGHTING SYSTEM" section for turn signal and hazard unit. <Ref. to LI-41, Turn Signal Light & Hazard Light Unit.>

Diagnostics with Phenomenon

POWER REAR GATE SYSTEM

16. Diagnostics with Phenomenon

A: INSPECTION

Refer to “Diagnostics with Phenomenon” in the “POWER REAR GATE SYSTEM (DIAGNOSTICS)” section.
<Ref. to PRG(diag)-55, Diagnostics with Phenomenon.>

POWER REAR GATE SYSTEM (DIAGNOSTICS)

PRG(diag)

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Basic Diagnostic Procedure

POWER REAR GATE SYSTEM (DIAGNOSTICS)

1. Basic Diagnostic Procedure

A: PROCEDURE

	Step	Check	Yes	No
1	PERFORM CUSTOMER INTERVIEW. Using the Check List for Interview, ask the customer the condition of how the trouble occurred. <Ref. to PRG(diag)-3, CHECK, Check List for Interview.>	Did you interview the customer?	Go to step 2.	Interview the customer. <Ref. to PRG(diag)-3, CHECK, Check List for Interview.>
2	INITIALIZATION OF PRG SYS. 1) Open the PRG manually. 2) Manually close PRG to the half-shut position, and operate the auto closer to fully close PRG. 3) Press any of the PRG operation switches to perform the automatic operation of PRG.	Is the initialization operation possible?	Go to step 4.	Go to step 3.
3	CHECK LAN SYSTEM. Inspect LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>	Is there any fault?	Perform the inspection according to the diagnosis for LAN system.	Go to step 4.
4	CHECK POWER REAR GATE SYSTEM. Using the Subaru Select Monitor, read DTC of power rear gate system. <Ref. to PRG(diag)-11, OPERATION, Read Diagnostic Trouble Code (DTC).> NOTE: If the communication function of the Subaru Select Monitor cannot be executed properly, check the communication circuit. <Ref. to PRG(diag)-10, COMMUNICATION FOR INITIALIZING IMPOSSIBLE, INSPECTION, Subaru Select Monitor.>	Is DTC displayed?	Record DTC and perform the diagnosis according to the DTC. <Ref. to PRG(diag)-15, LIST, List of Diagnostic Trouble Code (DTC).>	Go to step 5.
5	CHECK DIAGNOSTICS WITH PHENOMENON. Check “Diagnostics with Phenomenon”. <Ref. to PRG(diag)-55, Diagnostics with Phenomenon.>	Does the symptom apply?	Perform diagnosis according to the procedures in the diagnostics with phenomenon.	Go to step 6.
6	CHECK TROUBLE PHENOMENON. 1) Perform the basic inspection. <Ref. to PRG(diag)-4, INSPECTION, General Description.> 2) Check the power rear gate CM. <Ref. to PRG(diag)-8, Control Module I/O Signal.> 3) Perform check of current data. <Ref. to PRG(diag)-13, Read Current Data.> 4) Perform a unit check.	Was the trouble cause found?	Repair or replace the cause of trouble.	Currently, system is normal. A temporary poor contact may be a possible cause. Therefore, check the harness connector.

Check List for Interview

POWER REAR GATE SYSTEM (DIAGNOSTICS)

2. Check List for Interview

A: CHECK

- Inspect the following items regarding the vehicle's state.
- Print out this page for interviewing customers.

Power Rear Gate System Check List for Interview			
Date the Vehicle is Received	Year	Month	Day
Customer's name		Registration No.	Initial year of registration Year Month Date
		Vehicle model	Frame number
Interviewer	Inspector	Engine type	Odometer reading
Customer specified content • • •			
Date and time when the trouble occurred		Frequency of trouble occurrence	Always occurs Sometimes occurs (times per day, times per month)
Condition of trouble occurrence (How the trouble occurs)		Weather	Fine • Cloudy • Rainy • Snowy • Others ()
		Temperature	°C (°F) — °C (°F)
Road conditions		Occurrence location	
Accessory installation condition			
Confirmation of trouble condition	Power rear gate control module system		
	Drive unit system		
☐ Diagnostic code			

General Description

POWER REAR GATE SYSTEM (DIAGNOSTICS)

3. General Description

A: CAUTION

1. AIRBAG SYSTEM

CAUTION:

- Do not use the electrical test equipment on the airbag system wiring harnesses and connector circuits.
- Be careful not to damage the airbag system wiring harness.

B: INSPECTION

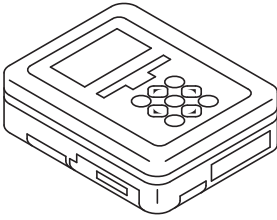
1. BASIC INSPECTION

Before performing diagnosis, check the following items which might affect power rear gate related problems.

- 1) Check the battery. <Ref. to SC(H4DO)-63, INSPECTION, Battery.>
- 2) Check the relay and fuse condition. <Ref. to PRG-7, Relay and Fuse.>
- 3) Check the connecting condition of harness and harness connector.

C: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for troubleshooting the electrical system.

2. GENERAL TOOL

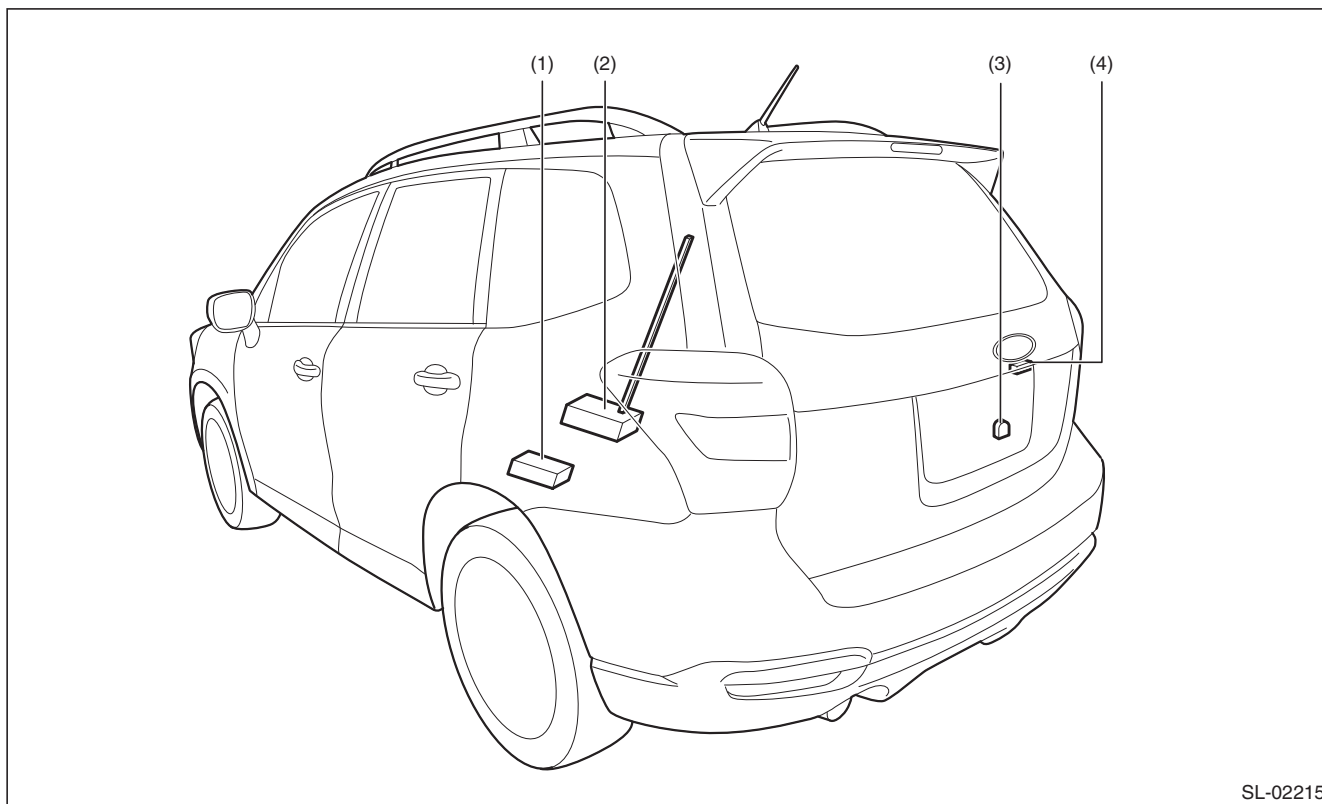
TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance, voltage and current.

Electrical Component Location

POWER REAR GATE SYSTEM (DIAGNOSTICS)

4. Electrical Component Location

A: LOCATION



(1) Power rear gate control module (PRG CM)

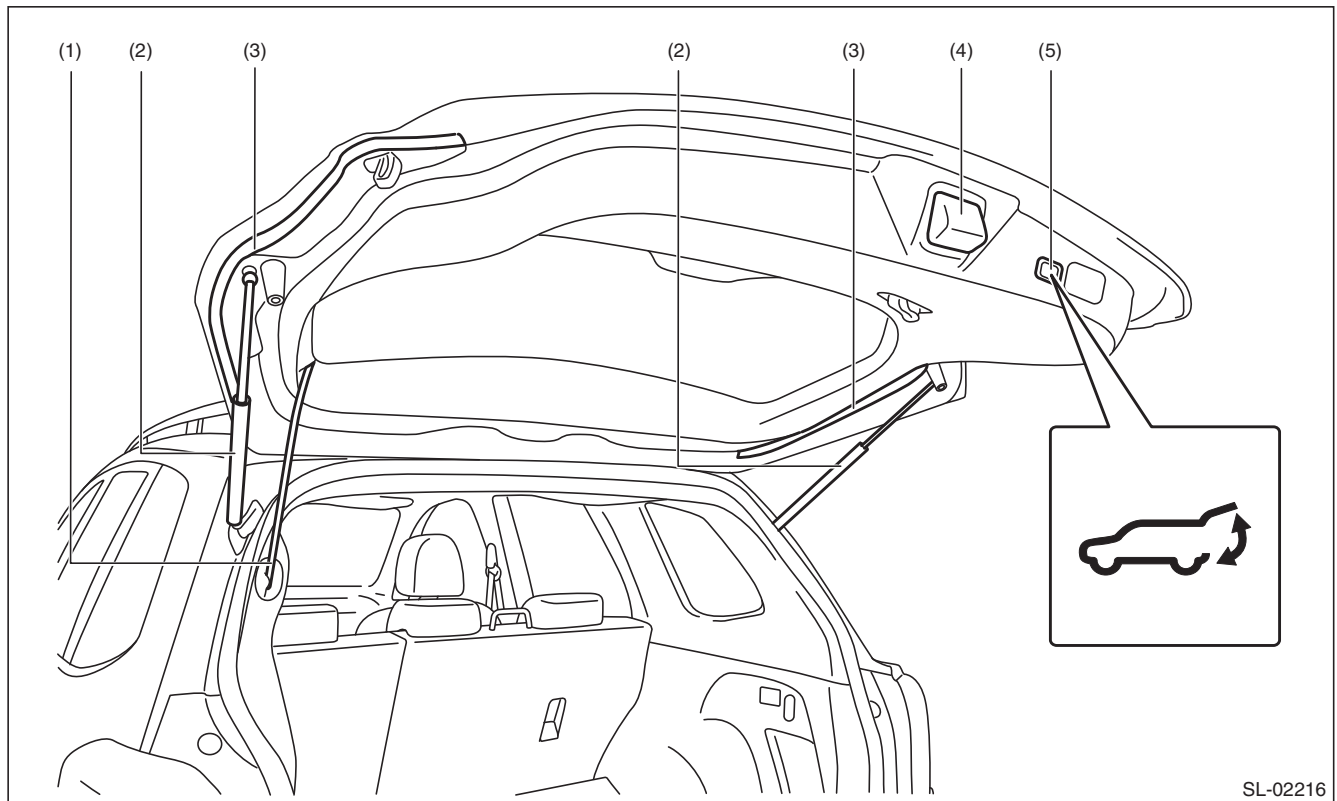
(2) Power rear gate drive unit (PRG DU)

(3) Power rear gate buzzer

(4) Rear gate opener button (PRG)

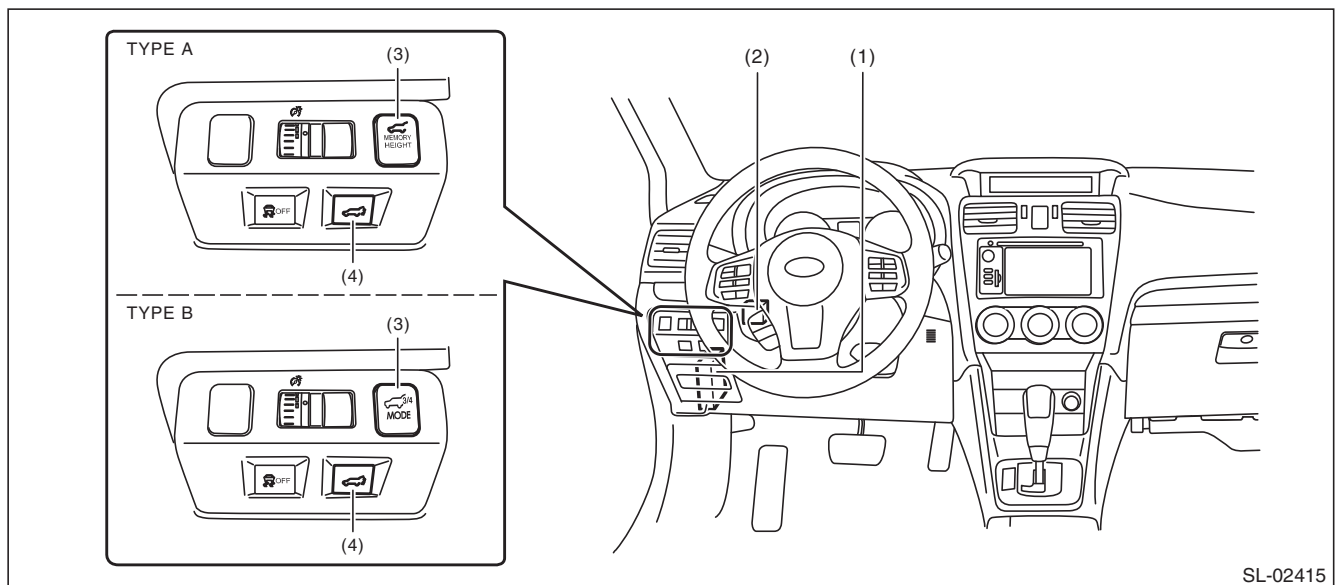
Electrical Component Location

POWER REAR GATE SYSTEM (DIAGNOSTICS)



SL-02216

- | | | |
|---------------------------|----------------------------------|----------------------------------|
| (1) Rod - power rear gate | (3) Power rear gate touch sensor | (5) Power rear gate inner switch |
| (2) Gas damper | (4) Power rear gate auto closer | |

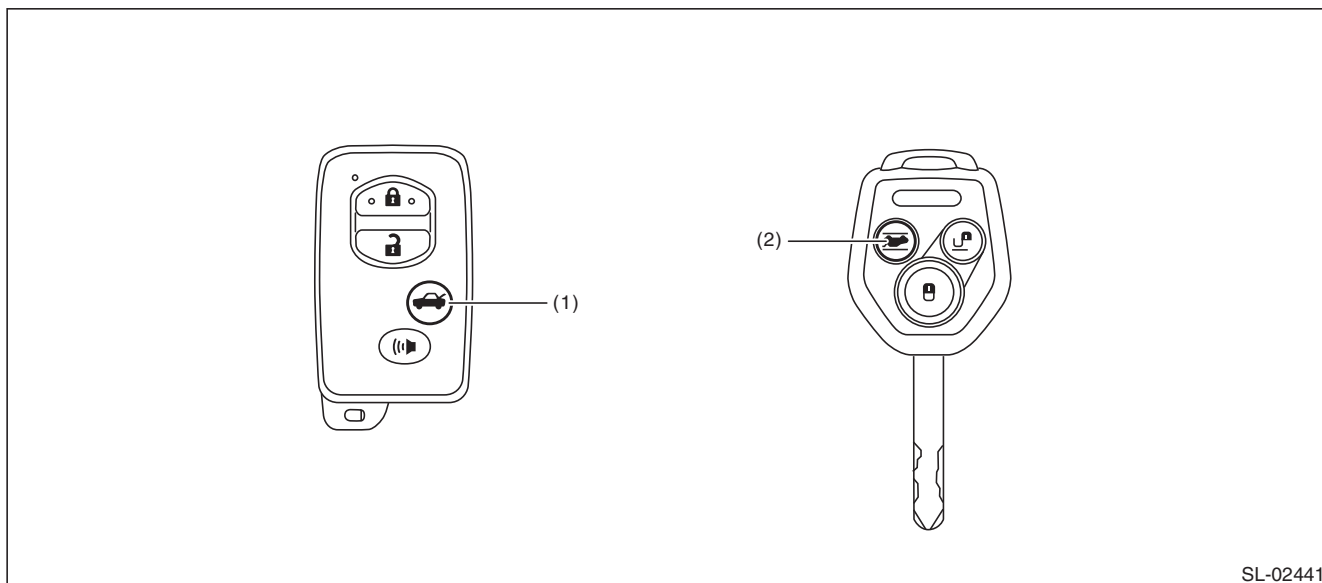


SL-02415

- | | | |
|--------------------------------|--------------------------|-------------------------------------|
| (1) Body integrated unit | (3) Memory height switch | (4) Power rear gate driver's switch |
| (2) Turn hazard control module | | |

Electrical Component Location

POWER REAR GATE SYSTEM (DIAGNOSTICS)



SL-02441

(1) Rear gate/trunk SW (access key)
(with keyless access)

(2) Rear gate/trunk SW (keyless
transmitter)
(without keyless access)



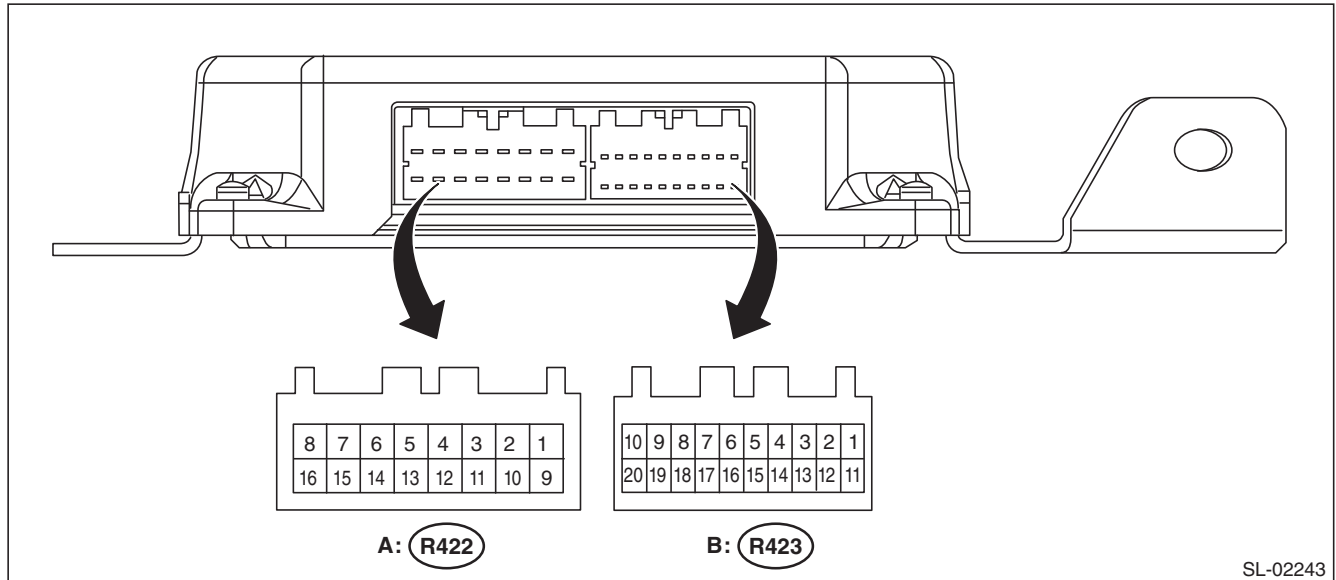
Control Module I/O Signal

POWER REAR GATE SYSTEM (DIAGNOSTICS)

5. Control Module I/O Signal

A: ELECTRICAL SPECIFICATION

1. POWER REAR GATE CONTROL MODULE



Terminal No. (terminal symbol)	Item	Measuring condition	Standard
(R422) No. 1 (+B) ↔ Chassis ground	Voltage	Always	10.5 — 16 V
(R422) No. 2 (SW-V) ↔ Chassis ground	Voltage	Always	10.5 — 16 V
(R422) No. 3 (CLUTCH (GND)) ↔ Chassis ground	Resistance	Always	Less than 1 Ω
(R422) No. 4 (SOL (-)) ↔ Chassis ground	Voltage	During solenoid cancellation output	Less than 1 V
(R422) No. 5 (CLOSER (OPEN)) ↔ Chassis ground	Voltage	When power rear gate auto closer cancellation is in operation	10.5 — 16 V
(R422) No. 6 (SOL (COMMON)) ↔ Chassis ground	Voltage	Always	10.5 — 16 V
(R422) No. 7 (MOTOR (CLOSE)) ↔ Chassis ground	Voltage	When auto-close is in operation	10.5 — 16 V
(R422) No. 8 (+POWER B) ↔ Chassis ground	Voltage	Always	10.5 — 16 V
(R422) No. 9 (SEN-V) ↔ Chassis ground	Voltage	Always	4 — 6 V
(R422) No. 10 (IGN) ↔ Chassis ground	Voltage	When ignition switch is ON	10.5 — 16 V
(R422) No. 11 (CLUTCH (+)) ↔ Chassis ground	Voltage	When auto-close is in operation	10.5 — 16 V
(R422) No. 12 (SOL (BUZZER)) ↔ Chassis ground	Resistance	When buzzer is OFF	Less than 1 Ω
(R422) No. 13 (CLOSER (CLOSE)) ↔ Chassis ground	Voltage	When power rear gate auto closer is in pull-in operation	10.5 — 16 V
(R422) No. 14 (P-GND) ↔ Chassis ground	Resistance	Always	Less than 1 Ω
(R422) No. 15 (MOTOR (OPEN)) ↔ Chassis ground	Voltage	When auto-open is in operation	10.5 — 16 V
(R422) No. 16 (SOL (+)) ↔ Chassis ground	Voltage	When solenoid lock is output	Less than 1 V
(R423) No. 1 (LIN) ↔ Chassis ground	—	Cannot be measured (LIN communication line)	—
(R423) No. 2 (HALF STOP SW) ↔ Chassis ground	Voltage	When memory height switch is ON	10.5 — 16 V

Control Module I/O Signal

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Terminal No. (terminal symbol)	Item	Measuring condition	Standard
(R423) No. 3 (SOL POS SW) ↔ Chassis ground	Voltage	Except for PRG at half-stop state	4 — 6 V
(R423) No. 4 (SECTOR SW) ↔ Chassis ground	Voltage	When PRG is fully closed	Less than 1 V
(R423) No. 5 (–) ↔ Chassis ground	—	—	—
(R423) No. 6 (GATE SW) ↔ Chassis ground	Voltage	When PRG inner SW is ON	10.5 — 16 V
(R423) No. 7 (–) ↔ Chassis ground	—	—	—
(R423) No. 8 (S-GND) ↔ Chassis ground	Resistance	Always	Less than 1 Ω
(R423) No. 9 (–) ↔ Chassis ground	—	—	—
(R423) No. 10 (SEN-A) ↔ Chassis ground	Voltage	When PRG is stopped	4 — 6 V
(R423) No. 11 (T-SEN R) ↔ Chassis ground	Voltage	When sensor is ON	Less than 1 V
(R423) No. 12 (T SEN L) ↔ Chassis ground	Voltage	When sensor is ON	Less than 1 V
(R423) No. 13 (LATCH SW) ↔ Chassis ground	Voltage	When PRG is fully closed	4 — 6 V
(R423) No. 14 (COURTESY SW) ↔ Chassis ground	Voltage	When PRG is fully closed	4 — 6 V
(R423) No. 15 (HAZARD) ↔ Chassis ground	Voltage	When hazard switch is OFF	Less than 1 V
(R423) No. 16 (D SW) ↔ Chassis ground	Voltage	When driver's switch is ON	10.5 — 16 V
(R423) No. 17 (–) ↔ Chassis ground	—	—	—
(R423) No. 18 (T-SEN GND) ↔ Chassis ground	Resistance	Always	Less than 1 Ω
(R423) No. 19 (SEN-GND) ↔ Chassis ground	Resistance	Always	Less than 1 Ω
(R423) No. 20 (SEN-B) ↔ Chassis ground	Voltage	When PRG is stopped	4 — 6 V

B: WIRING DIAGRAM

Refer to "Power Rear Gate System" in the wiring diagram. <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>

Subaru Select Monitor

POWER REAR GATE SYSTEM (DIAGNOSTICS)

6. Subaru Select Monitor

A: OPERATION

- For operation procedures, refer to the "PC application help for Subaru Select Monitor".
- When the power rear gate control module cannot communicate with Subaru Select Monitor, perform "COMMUNICATION FOR INITIALIZING IMPOSSIBLE". <Ref. to PRG(diag)-10, INSPECTION, Subaru Select Monitor.>

B: INSPECTION

1. COMMUNICATION FOR INITIALIZING IMPOSSIBLE

When communication with power rear gate control module is impossible

DETECTING CONDITION:

- Defective harness connector
- Power supply circuit malfunction
- Defective power rear gate control module
- Defective LIN communication circuit
- Defective Subaru Select Monitor

TROUBLE SYMPTOM:

Communication is impossible between the power rear gate control module and Subaru Select Monitor.

Step	Check	Yes	No
1 CHECK OTHER COMMUNICATION. Perform communication with the system other than the power rear gate control module using the Subaru Select Monitor.	Is the communication to other control module possible?	Go to step 2.	Perform the "Communication for Initializing Impossible" of LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>
2 CHECK LAN SYSTEM. Inspect LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>	Is DTC U1602 detected?	Perform the inspection according to the diagnosis for LAN system.	It is possible that temporary poor communication occurs.

Read Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

7. Read Diagnostic Trouble Code (DTC)

A: OPERATION

- For operation procedures, refer to the "PC application help for Subaru Select Monitor".
- For details concerning DTC, refer to the List of Diagnostic Trouble Codes (DTC). <Ref. to PRG(diag)-15, LIST, List of Diagnostic Trouble Code (DTC).>

Clear Memory Mode

POWER REAR GATE SYSTEM (DIAGNOSTICS)

8. Clear Memory Mode

A: OPERATION

For operation procedures, refer to the "PC application help for Subaru Select Monitor".

Read Current Data

POWER REAR GATE SYSTEM (DIAGNOSTICS)

9. Read Current Data

A: OPERATION

- For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.
- Communication with PRG CM and Subaru Select Monitor takes time. It takes time to show all the items, and the status cannot be reflected on the display. Therefore, select items only that need to be checked or up to two to three items, when checking the status. (When displaying selected items only, place a check mark for the item to be displayed and press the “Select” button.)

B: LIST

Item Name	Content	Standard	Note
+POWER B	Power supply voltage value Display range: 0.00 — 21.5 V	10.5 — 16 V	—
+ B	PRG CM power supply voltage value Display range: 0.00 — 21.5 V	10.5 — 16 V	—
IGN SW	Ignition switch status Display range: ON/OFF	ON: IGN ON OFF: IGN OFF	—
Memory stop SW	Memorized height switch status Display range: ON/OFF	ON: switch ON OFF switch OFF	—
D SW	Driver's seat switch status Display range: ON/OFF	ON: switch ON OFF switch OFF	—
R/G inner SW	PRG inner switch status Display range: ON/OFF	ON: switch ON OFF switch OFF	—
COURTESY SW	Courtesy switch status Display range: ON/OFF	ON: switch ON OFF switch OFF	—
LATCH SW	Latch switch status Display range: ON/OFF	ON: switch ON OFF switch OFF	—
SECTOR SW	Sector switch status Display range: ON/OFF	ON: switch ON OFF switch OFF	—
TOUCH SENSOR R	Right side touch sensor status Display range: ON/OFF	ON: switch ON OFF switch OFF	—
TOUCH SENSOR L	Left side touch sensor status Display range: ON/OFF	ON: switch ON OFF switch OFF	—
PRG MOTOR (OPEN)	Output status of rear gate motor open signal Display range: OPEN/OFF	OPEN: when operating rear gate open OFF: OFF	—
PRG MOTOR (CLOSE)	Output status of rear gate motor close signal Display range: CLOSE/OFF	CLOSE: when operating rear gate close OFF: OFF	—
CLUTCH(-)	Output status of drive unit clutch Display range: ON/OFF	ON: when clutch OFF output OFF: OFF	—
CLUTCH(+)	Output status of drive unit clutch Display range: ON/OFF	ON: when clutch ON output OFF: OFF	—
CLOSER (OPEN)	Output status of auto power rear gate closer motor open signal Display range: OPEN/OFF	OPEN: when open output OFF: OFF	—
CLOSER (CLOSE)	Output status of auto power rear gate closer motor close signal Display range: CLOSE/OFF	CLOSE: when close output OFF: OFF	—
BUZZER	Buzzer output status Display range: ON/OFF	ON: when buzzer sounding OFF: when buzzer stopping	—
HAZARD	Hazard output status Display range: ON/OFF	ON: when hazard ON OFF: when hazard OFF	—
Pulse-count	Drive unit count information Display range: 0 — 765	—	—

Read Current Data

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Item Name	Content	Standard	Note
Connection Continuing Flag	Display range: Flag / not Flag	Flag: not Flag:	—
PRG State	Rear gate status Display range: Fully open / Door free / Operating / Totally-enclosed	Fully open: fully open status Door free: door free status Suspend: suspend status Operating: operating status Totally-enclosed: totally-enclosed status	—
Idle Stop Cancel Flag	Status of Auto Start Stop cancel request Display range: Flag / not Flag	Flag: when Auto Start Stop cancellation not Flag: when Auto Start Stop	—
HALF STOP SOL (Lock)	Output status of stop holding solenoid lock signal Display range: ON/OFF	ON: when solenoid lock output OFF: when not operating solenoid	—
HALF STOP SOL (Cancel)	Output status of stop holding solenoid cancel signal Display range: ON/OFF	ON: when solenoid cancel output OFF: when operating solenoid	—
HALF STOP SOL POS SW	Display range: ON/OFF	ON: when stop holding OFF: when not stop holding	—
IGN	Ignition switch status (body integrated unit) Display range: ON/OFF	ON: IGN ON OFF: IGN OFF	—
R/G Open SW	PRG opener switch status Display range: OFF / Short Push / Long Push	OFF: when OFF Short Push: when operating Short Push Long Push: when operating Long Push	—
Front Wheel Speed	Vehicle speed condition Display range: 0 — 229.5 km/h (0 — 142.6 MPH)	Show vehicle speed	—
Normal Keyless R/G SW	Status of normal keyless R/G switch Display range: OFF / Short Push / Long Push	OFF: when OFF Short Push: when operating Short Push Long Push: when operating Long Push	—
Smart Keyless R/G SW	Status of keyless access key R/G switch Display range: OFF / Short Push / Long Push	OFF: when OFF Short Push: when operating Short Push Long Push: when operating Long Push	—
Idle Stop Control	Status of Auto Start Stop control Display range: Idle Stop Control / Idle Stop Uncontrol	Idle Stop Control: when Idle Stop Control Idle Stop Uncontrol: other than Idle Stop Control	—
P range SW	Status of shift lever P Display range: ON/OFF	ON: when in P range OFF: when other than in P range	—
Parking Brake Switch Input	Status of parking brake switch Display range: ON/OFF	ON: when parking brake is ON OFF: when parking brake is OFF	—
MT/AT	Vehicle information (body integrated unit) Display range: MT/AT	MT: MT model AT: AT model	—
R/G Open Authorized State	Status of PRG permission Display range: Authorized State / Unau- thorized State	Authorized State: PRG Open Authorized State Unauthorized State: PRG Open Unau- thorized State	—
Answer-Back Buzzer Informa- tion	Body integrated unit customizing infor- mation Display range: ON/OFF	ON: when buzzer sounding ON OFF: when buzzer sounding OFF	—

List of Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

10. List of Diagnostic Trouble Code (DTC)

A: LIST

DTC	Item	Content of diagnosis	Reference
B2500	Power Supply Volt Error	Abnormality of PRG CM power supply voltage is detected.	<Ref. to PRG(diag)-17, DTC B2500 BATT P/SUPPLY FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2501	PRG ECU Malfunction	Malfunction of motor operation is detected.	<Ref. to PRG(diag)-19, DTC B2501 PRG ECU MALFUNCTION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2502	Touch Sensors (L) Failure	Malfunction of touch sensor L is detected.	<Ref. to PRG(diag)-22, DTC B2502 TOUCH SENSORS (L) FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2503	Touch Sensors (R) Failure	Malfunction of touch sensor R is detected.	<Ref. to PRG(diag)-24, DTC B2503 TOUCH SENSORS (R) FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2504	Touch Sensors (L) ON Fixation	Seizure of touch sensor L is detected.	<Ref. to PRG(diag)-25, DTC B2504 TOUCH SENSORS (L) ON FIXATION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2505	Touch Sensors (R) ON Fixation	Seizure of touch sensor R is detected.	<Ref. to PRG(diag)-25, DTC B2505 TOUCH SENSORS (R) ON FIXATION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2506	PRG Motor Current Surge	Overcurrent in motor circuit is detected.	<Ref. to PRG(diag)-26, DTC B2506 PRG MOTOR CURRENT SURGE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2507	PRG Motor Open	Open circuit in motor is detected.	<Ref. to PRG(diag)-27, DTC B2507 PRG MOTOR OPEN, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2508	PRG Motor GND Short Out	Ground fault in motor circuit is detected.	<Ref. to PRG(diag)-29, DTC B2508 PRG MOTOR GND SHORT OUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2509	Clutch Open	Open or short circuit in clutch is detected.	<Ref. to PRG(diag)-31, DTC B2509 CLUTCH OPEN, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B250A	Touch Sensors Batt. GND Short Out	Malfunction of touch sensor is detected.	<Ref. to PRG(diag)-33, DTC B250A TOUCH SENSORS BATT. GND SHORT OUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B250B	Rotation Sensor Failure (A Output Fixation)	Malfunction of rotation sensor is detected.	<Ref. to PRG(diag)-35, DTC B250B ROTATION SENSOR FAILURE (A OUTPUT FIXATION), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B250D	Rotation Sensor Failure (B Output Fixation)	Malfunction of rotation sensor is detected.	<Ref. to PRG(diag)-37, DTC B250D ROTATION SENSOR FAILURE (B OUTPUT FIXATION), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B250F	Rotation Sensor Failure (Pulse-Count Failure)	Malfunction of rotation sensor is detected.	<Ref. to PRG(diag)-37, DTC B250F ROTATION SENSOR FAILURE (PULSE-COUNT FAILURE), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2511	Rotation Sensor Failure (Reverse Direction Pulse Failure)	Malfunction of rotation sensor is detected.	<Ref. to PRG(diag)-37, DTC B2511 ROTATION SENSOR FAILURE (REVERSE DIRECTION PULSE FAILURE), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2512	Damper Breakage Failure	Malfunction of gas damper is detected.	<Ref. to PRG(diag)-38, DTC B2512 DAMPER BREAKAGE FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>



List of Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

DTC	Item	Content of diagnosis	Reference
B2513	Latch Condition Failure	Malfunction of switch inside auto power rear gate closer is detected.	<Ref. to PRG(diag)-39, DTC B2513 LATCH CONDITION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2514	IG Failure	Inconsistency of signals between LIN communication line and direct line.	<Ref. to PRG(diag)-42, DTC B2514 IG FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2515	Latch SW Failure	Malfunction of switch inside auto power rear gate closer is detected.	<Ref. to PRG(diag)-43, DTC B2515 LATCH SW FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2516	Sector SW Failure	Malfunction of switch inside auto power rear gate closer is detected.	<Ref. to PRG(diag)-43, DTC B2516 SECTOR SW FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2517	Courtesy SW Failure	Malfunction of switch inside auto power rear gate closer is detected.	<Ref. to PRG(diag)-43, DTC B2517 COURTESY SW FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2518	PRG Continuously-Working Failure	When the motor is operated continuously for 30 minutes or more.	<Ref. to PRG(diag)-44, DTC B2518 PRG CONTINUOUSLY-WORKING FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2519	POWER +B Open	Malfunction of PRG CM power supply system is detected.	<Ref. to PRG(diag)-47, DTC B2519 POWER +B OPEN, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B251A	LIN Connection Failure (No-Receive Data Failure)	Malfunction of LIN communication system is detected.	<Ref. to PRG(diag)-49, DTC B251A LIN CONNECTION FAILURE (NO-RECEIVE DATA FAILURE), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B251B	LIN Connection Failure (BUS Physical Failure)	Malfunction of LIN communication system is detected.	<Ref. to PRG(diag)-50, DTC B251B LIN CONNECTION FAILURE (BUS PHYSICAL FAILURE), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B251D	AT/MT Judgment Failure	Malfunction of LIN communication system is detected.	<Ref. to PRG(diag)-50, DTC B251D AT/MT JUDGMENT FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2522	EEPROM Failure	Malfunction is detected inside PRG CM.	<Ref. to PRG(diag)-51, DTC B2522 EEPROM FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2523	Half Stop Solenoid Failure	Malfunction of keep solenoid is detected.	<Ref. to PRG(diag)-52, DTC B2523 HALF STOP SOLENOID FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

11. Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC B2500 BATT P/SUPPLY FAILURE

DTC DETECTING CONDITION:

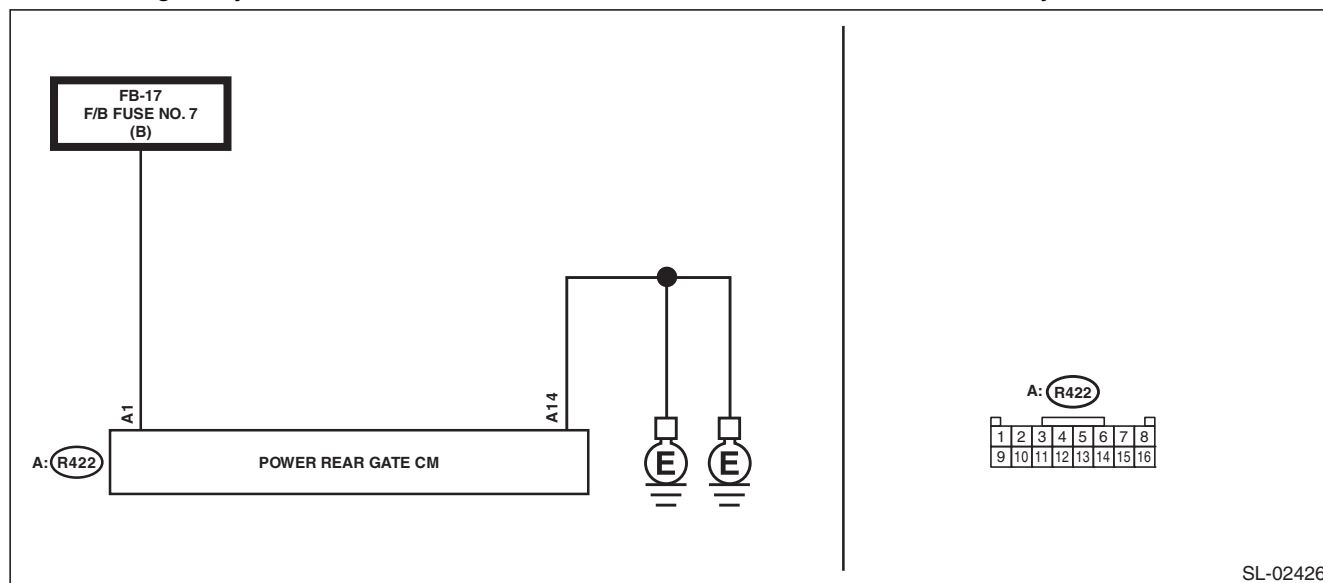
Detected when the power supply voltage is less than 10.5 V or 16 V or more at starting PRG operation (when SW is operated).

TROUBLE SYMPTOM:

The power rear gate does not operate.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



Step	Check	Yes	No
1	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 2.	Go to step 3.
2	CHECK DTC. 1) Turn IGN SW to OFF. 2) Disconnect the PRG CM connector and reconnect it. 3) Manually close the rear gate to the half-shut position, and operate the power rear gate auto closer to fully close. (PRG initialization) 4) Press the operation SW to perform auto-open/close of PRG, and then return to the full-close position. 5) Turn the ignition switch to ON. 6) Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 4.	Go to step 3.
3	CHECK CURRENT DATA. Check «+B» using the Subaru Select Monitor.	Go to step 4.	Currently, system is normal. A temporary poor contact may be a possible cause. Therefore, check the harness connector.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
4 CHECK FUSE. 1) Turn the ignition switch to OFF. 2) Check the fuse.	Is the fuse OK?	Go to step 5.	Replace the defective fuse. When the fuse is blown immediately, repair the short circuit.
5 CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Using a tester, measure the voltage between the PRG CM connector and chassis ground. Connector & terminal (R422) No. 1 (+) — Chassis ground (-):	Is the voltage 10.5 V or more and less than 16 V?	Go to step 6.	Repair or replace the open circuit of harness.
6 CHECK HARNESS. Using a tester, measure the resistance between the PRG CM connector and chassis ground. Connector & terminal (R422) No. 14 — Chassis ground:	Is the resistance less than 10 Ω ?	Go to step 7.	Repair or replace the open circuit of harness.
7 CHECK CONNECTOR.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

B: DTC B2501 PRG ECU MALFUNCTION

DTC DETECTING CONDITION:

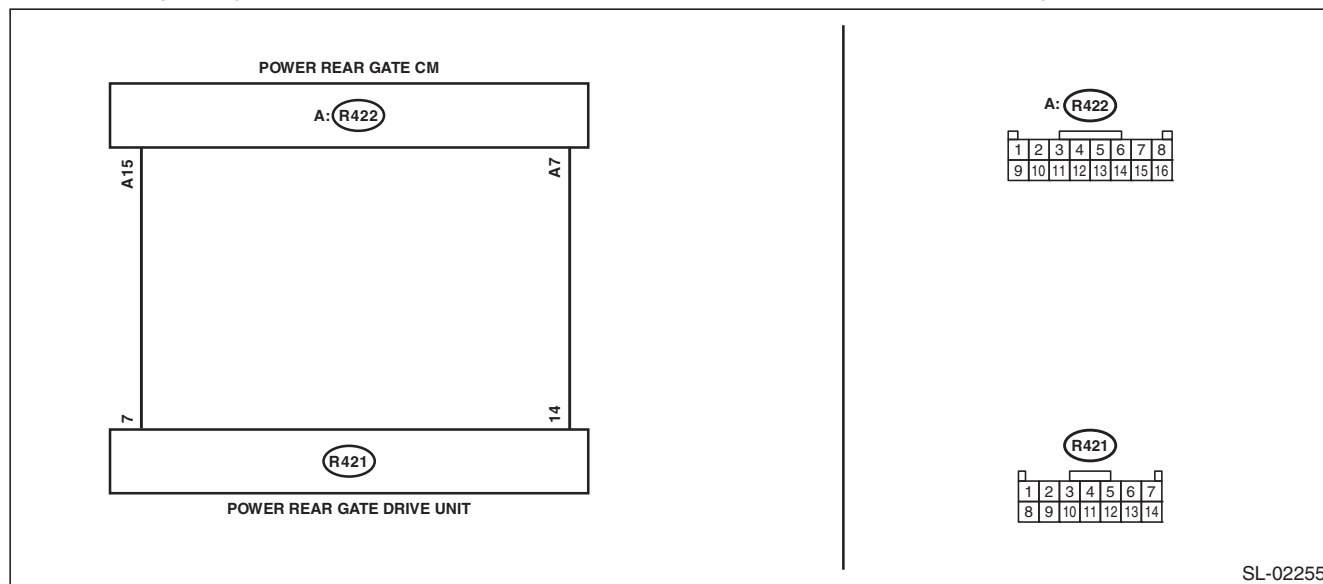
When improper operation of motor is detected.

TROUBLE SYMPTOM:

The open/close speed of power rear gate is too fast.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



Step	Check	Yes	No
1	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 2.	Go to step 3.
2	CHECK DTC. 1) Turn IGN SW to OFF. 2) Disconnect the PRG CM connector and reconnect it. 3) Manually close the rear gate to the half-shut position, and operate the power rear gate auto closer to fully close. (PRG initialization) 4) Press the operation SW to perform auto-open/close of PRG, and then return to the full-close position. 5) Turn the ignition switch to ON. 6) Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 4.	Go to step 3.
3	CHECK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector. 3) Disconnect the PRG DU connector.	Repair or replace the poor contact of connector.	A temporary change of voltage occurred.
4	CHECK HARNESS. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector. 3) Disconnect the PRG DU connector. 4) Measure the resistance between ECM connector and PRG DU connector. Connector & terminal (R422) No. 7 — (R421) No. 14: (R422) No. 15 — (R421) No. 7:	Go to step 5.	Repair or replace the open circuit of harness.

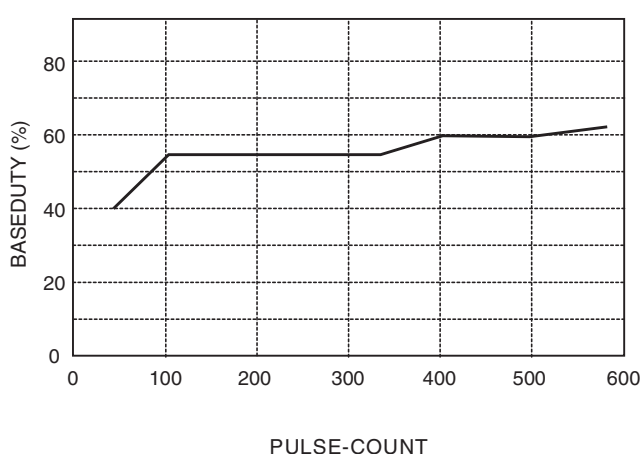
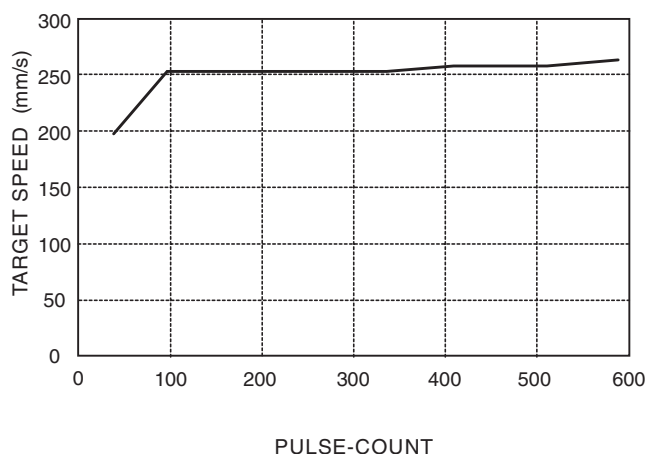
Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
5 CHECK HARNESS. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector. 3) Disconnect the PRG DU connector. 4) Measure the resistance between ECM connector and chassis ground. Connector & terminal (R422) No. 7 — Chassis ground: (R422) No. 15 — Chassis ground:	Is the resistance 1 M Ω or more?	Go to step 6.	Repair or replace the short circuit of harness.
6 CHECK HARNESS. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector. 3) Disconnect the PRG DU connector. 4) Measure the voltage between ECM connector and chassis ground. Connector & terminal (R422) No. 7 (+) — Chassis ground (-): (R422) No. 15 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 7.	Repair or replace the short circuit of harness.
7 CHECK PRG DU. Measure the resistance between PRG DU connectors. Connector & terminal (R421) No. 7 — (R421) No. 14:	Is the resistance 0.3 Ω ?	Go to step 8.	Replace the PRG DU. <Ref. to PRG-9, Power Rear Gate Control Module.>
8 CHECK PRG CM. 1) Perform auto-open/close of the power rear gate. 2) Check the waveform using an oscilloscope. Connector & terminal (R422) No. 7 — (R422) No. 15:	Is waveform normal? At open: DUTY 40 — 70% At close: DUTY 60 — 80% (However, the value decreases to 30% at the moment of closing) For the waveform, refer to Note in the margin.	A temporary change of voltage occurred.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

NOTE:

- Target speed at PRG open operation (left) DUTY (right)



SL-02386

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

- This malfunction code may be sensitively detected depending on the way users manually open or close the gate. If this malfunction code is stored in the memory as a past trouble but not as a present trouble, the system is normal. If this malfunction code is stored in the memory as a present trouble, perform the following procedures.

[Procedure]

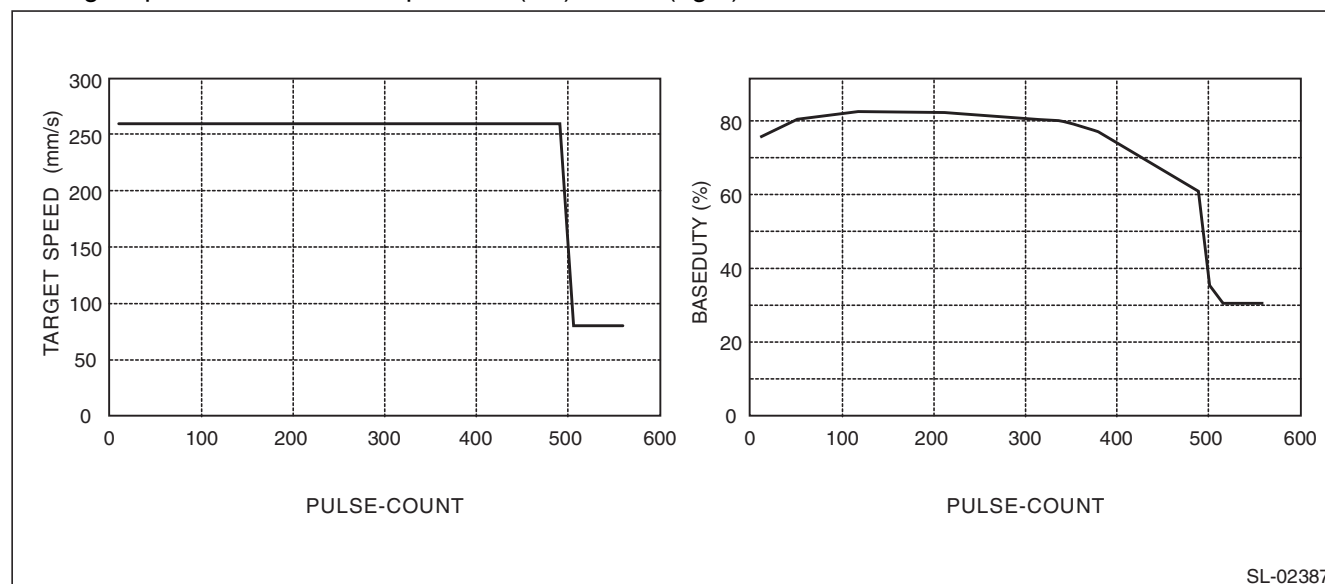
1. Clear the memory of PRG CM malfunction code using the Subaru Select Monitor.
2. Perform auto-open/close of PRG by using either one of the following operation switches.

	Switch	Operation
Open	Power rear gate driver's switch	Press and hold
	Rear gate/trunk SW	Press and hold
	Power rear gate opener button	Tap
Close	Power rear gate driver's switch	Press and hold
	Rear gate/trunk SW	Press and hold
	Power rear gate inner switch	Tap

3. Using the Subaru Select Monitor, read DTC of PRG CM.

If any present trouble is not stored in the memory after performing above procedures, the system is normal.

- Target speed at PRG close operation (left) DUTY (right)



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

C: DTC B2502 TOUCH SENSORS (L) FAILURE

DTC DETECTING CONDITION:

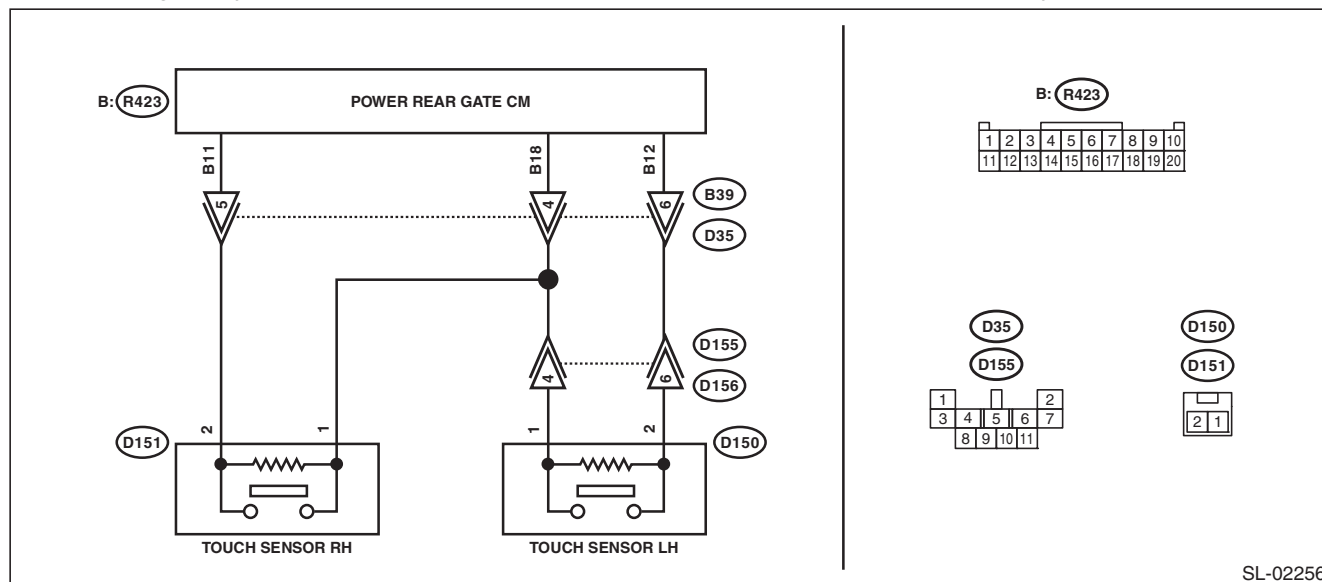
When malfunction in the touch sensor L is detected.

TROUBLE SYMPTOM:

The touch sensor L does not respond, and auto-operation does not function.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



SL-02256

Step	Check	Yes	No
1	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 2.	Go to step 3.
2	CHECK DTC. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector and reconnect it. 3) Turn the ignition switch to ON. 4) Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 4.	Go to step 3.
3	CHECK CURRENT DATA. Check «TOUCH SENSOR L» using the Subaru Select Monitor.	Currently, system is normal. A temporary poor contact may be a possible cause. Therefore, check the harness connector.	Go to step 4.
4	CHECK SENSORS. 1) Disconnect the touch sensor connector. 2) Measure the resistance between the touch sensor connectors. Connector & terminal (D150) No. 2 — (D150) No. 1:	Go to step 5.	Replace the touch sensor. <Ref. to PRG-19, Power Rear Gate Touch Sensor.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
5 CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Measure the resistance between PRG CM connector and touch sensor connector. <i>Connector & terminal</i> <i>(D150) No. 2 — (R423) No. 12:</i> <i>(D150) No. 1 — (R423) No. 18:</i>	Is the resistance 10 Ω or less?	Go to step 6.	Repair or replace the open circuit of harness.
6 CHECK HARNESS. Measure the resistance between the touch sensor connector and chassis ground. <i>Connector & terminal</i> <i>(R150) No. 2 — Chassis ground:</i>	Is the resistance 1 M Ω or more?	Go to step 7.	Repair or replace the short circuit of the harness.
7 CHECK HARNESS. Measure the voltage between the touch sensor connector and chassis ground. <i>Connector & terminal</i> <i>(R150) No. 1 (+) — Chassis ground (-):</i>	Is the voltage less than 1 V?	Go to step 8.	Repair or replace the short circuit of the harness.
8 CHECK CONNECTOR. Turn the ignition switch to OFF.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

D: DTC B2503 TOUCH SENSORS (R) FAILURE

DTC DETECTING CONDITION:

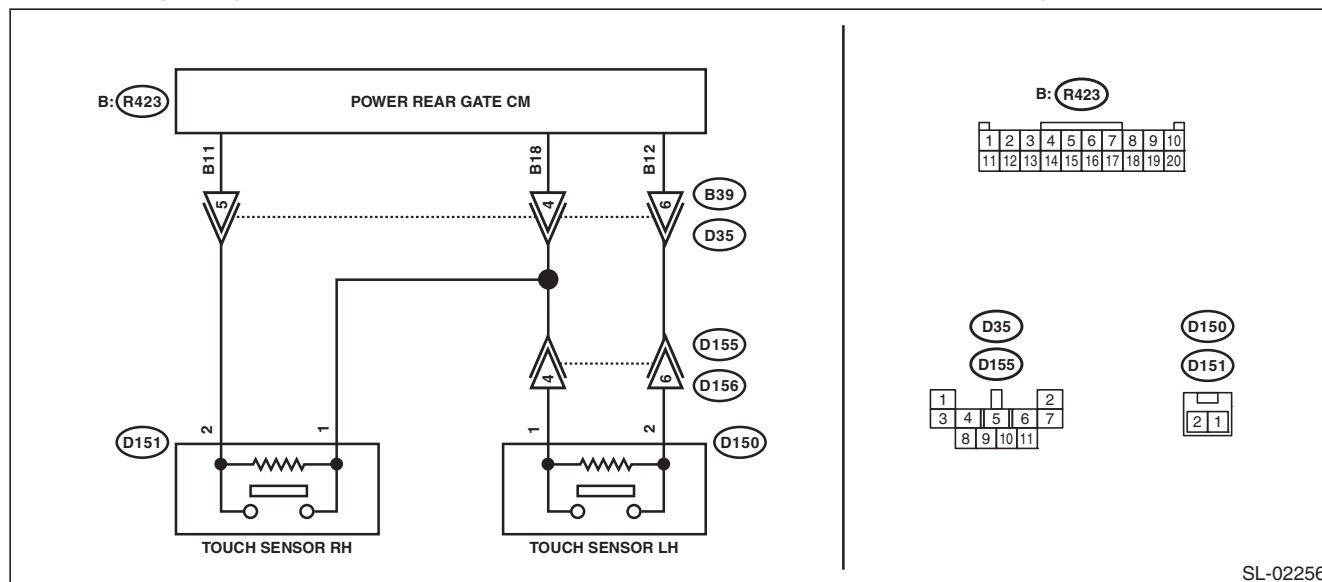
When malfunction in the touch sensor R is detected.

TROUBLE SYMPTOM:

The touch sensor R does not respond, and auto-operation does not function.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



SL-02256

Step	Check	Yes	No
1	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 2.	Go to step 3.
2	CHECK DTC. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector and reconnect it. 3) Turn the ignition switch to ON. 4) Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 4.	Go to step 3.
3	CHECK CURRENT DATA. Check «TOUCH SENSOR R» using the Subaru Select Monitor.	Currently, system is normal. A temporary poor contact may be a possible cause. Therefore, check the harness connector.	Go to step 4.
4	CHECK SENSORS. 1) Disconnect the touch sensor connector. 2) Measure the resistance between the touch sensor connectors. Connector & terminal (D151) No. 2 — (D151) No. 1:	Go to step 5.	Replace the touch sensor. <Ref. to PRG-19, Power Rear Gate Touch Sensor.>
5	CHECK HARNESS. Measure the resistance between PRG CM connector and touch sensor connector. Connector & terminal (D151) No. 2 — (R423) No. 11: (D151) No. 1 — (R423) No. 18:	Go to step 6.	Repair or replace the open circuit of harness.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
6 CHECK HARNESS. Measure the resistance between the touch sensor connector and chassis ground. Connector & terminal (D151) No. 2 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 7.	Repair or replace the short circuit of the harness.
7 CHECK HARNESS. Measure the voltage between the touch sensor connector and chassis ground. Connector & terminal (D151) No. 1 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 8.	Repair or replace the short circuit of the harness.
8 CHECK CONNECTOR. Turn the ignition switch to OFF.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

E: DTC B2504 TOUCH SENSORS (L) ON FIXATION

NOTE:

For the diagnostic procedure, refer to DTC B2502. <Ref. to PRG(diag)-22, DTC B2502 TOUCH SENSORS (L) FAILURE , Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

F: DTC B2505 TOUCH SENSORS (R) ON FIXATION

NOTE:

For the diagnostic procedure, refer to DTC B2503. <Ref. to PRG(diag)-24, DTC B2503 TOUCH SENSORS (R) FAILURE , Diagnostic Procedure with Diagnostic Trouble Code (DTC).>



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

G: DTC B2506 PRG MOTOR CURRENT SURGE

DTC DETECTING CONDITION:

When excessive load is applied to the PRG motor, and overcurrent is detected.

TROUBLE SYMPTOM:

The PRG auto-operation does not function, operation speed is slow, and incorrect reverse operation occurs.

Step	Check	Yes	No
1 CHECK FOR OBSTACLES.	Is the peripheral area of the rear gate free from snow or any object that blocks open/close operation?	Go to step 2.	Remove the obstacles, and Go to step 2.
2 CHECK POWER REAR GATE OPERATION. 1) Turn the ignition switch to OFF. 2) Fully close the rear gate. 3) Turn the memory height switch to OFF. 4) Press and hold the PRG driver's SW to perform the auto-open operation. 5) With the gate at the full-open position, press and hold the PRG driver's SW to perform the auto-close operation.	Is it operating normally?	Go to step 4.	Go to step 3.
3 CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Is B2506 current malfunction?	Go to step 4.	Go to step 5.
4 CHECK DTC. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector and reconnect it. 3) Perform auto-operation with the procedure in step 2. 4) Turn the ignition switch to ON. 5) Using the Subaru Select Monitor, read DTC of PRG CM.	Is B2506 current malfunction?	Go to step 5.	Currently, system is normal. A temporary poor contact may be a possible cause. Therefore, check the harness connector. Or temporarily excess load was applied.
5 CHECK PRG DU WITH MANUAL OPERATION. 1) Turn the ignition switch to OFF. 2) Fully close the rear gate. 3) Press and hold the PRG opener button to perform the manual operation.	Is the operation possible without abnormal weight?	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>	Replace the PRG DU.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

H: DTC B2507 PRG MOTOR OPEN

DTC DETECTING CONDITION:

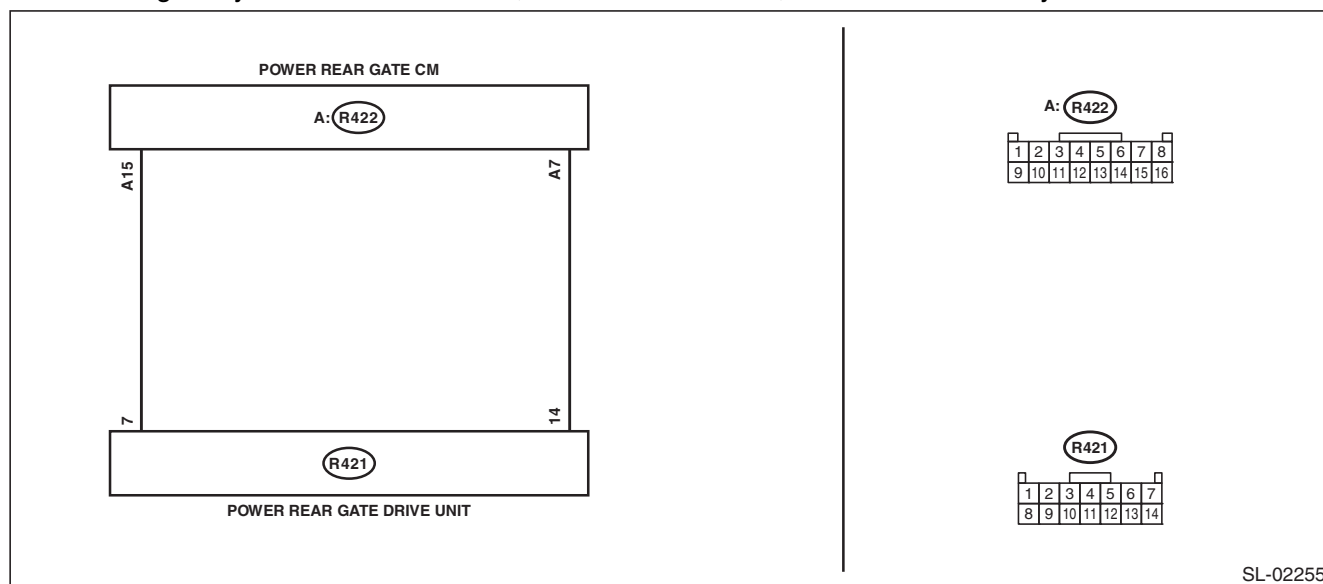
When the open circuit in motor circuit is detected.

TROUBLE SYMPTOM:

During the auto-operation, the operation stop, half-stop state cannot be cancelled, and auto-operation is not possible.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



Step	Check	Yes	No	
1	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Is B2507 current malfunction?	Go to step 2.	Go to step 3.
2	CHECK DTC. 1) Turn IGN SW to OFF. 2) Disconnect the PRG CM connector and reconnect it. 3) Manually close the rear gate to the half-shut position, and operate the power rear gate auto closer to fully close. (PRG initialization) 4) Press the operation SW to perform auto-open/close of PRG, and then return to the full-close position. 5) Turn the ignition switch to ON. 6) Using the Subaru Select Monitor, read DTC of PRG CM.	Is B2507 current malfunction?	Go to step 4.	Go to step 3.
3	CHECK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector. 3) Disconnect the PRG DU connector.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	A temporary change of voltage occurred.
4	CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the PRG DU connector. 3) Measure the resistance between PRG CM connector and PRG DU connector. Connector & terminal (R422) No. 15 — (R421) No. 7: (R422) No. 7 — (R421) No. 14:	Is the resistance 10 Ω or less?	Go to step 5.	Repair or replace the open circuit of harness.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
5 CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the PRG DU connector. 3) Measure the resistance between PRG CM connector and chassis ground. <i>Connector & terminal</i> <i>(R422) No. 15 — Chassis ground:</i> <i>(R422) No. 7 — Chassis ground:</i>	Is the resistance 1 MΩ or more?	Go to step 6.	Repair or replace the short circuit of the harness.
6 CHECK PRG DU. Measure the resistance between PRG DU connectors. <i>Connector & terminal</i> <i>(R421) No. 7 — (R421) No. 14:</i>	Is the resistance 0.3 Ω?	Go to step 7.	Replace the PRG DU. <Ref. to PRG-9, Power Rear Gate Control Module.>
7 CHECK CONNECTOR.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

I: DTC B2508 PRG MOTOR GND SHORT OUT

DTC DETECTING CONDITION:

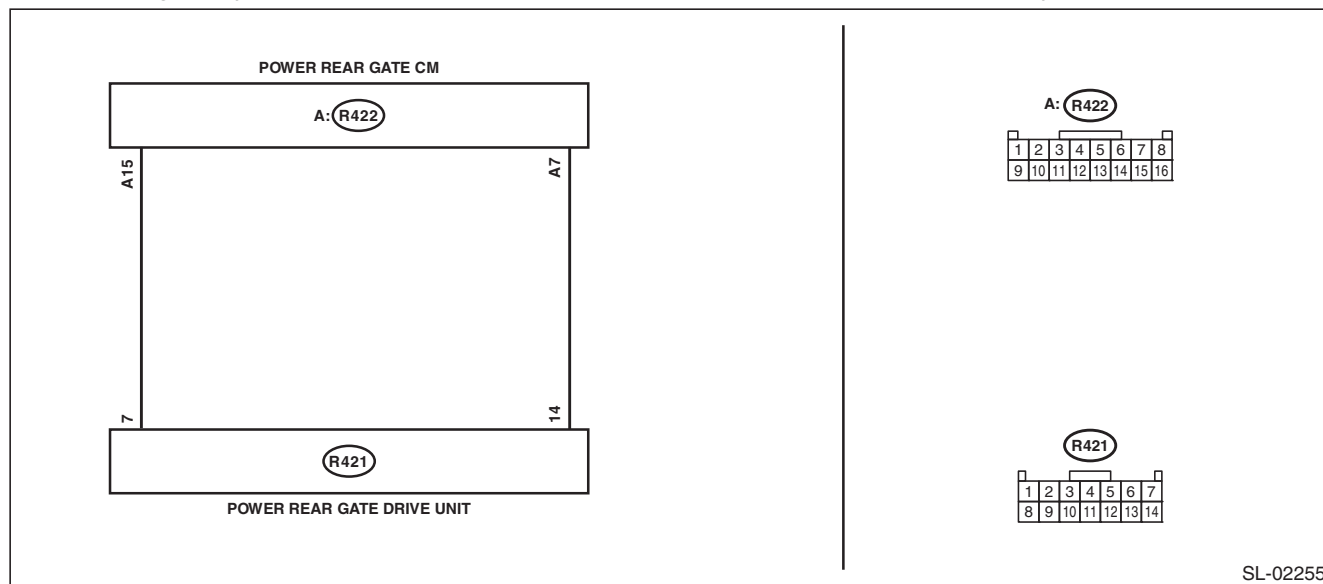
When the GND-output short in motor circuit is detected.

TROUBLE SYMPTOM:

Auto-operation speed is too fast.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



	Step	Check	Yes	No
1	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Is B2508 current malfunction?	Go to step 2.	Go to step 3.
2	CHECK DTC. 1) Turn IGN SW to OFF. 2) Disconnect the PRG CM connector and reconnect it. 3) Manually close the rear gate to the half-shut position, and operate the power rear gate auto closer to fully close. (PRG initialization) 4) Press the operation SW to perform auto-open/close of PRG, and then return to the full-close position. 5) Turn the ignition switch to ON. 6) Using the Subaru Select Monitor, read DTC of PRG CM.	Is B2508 current malfunction?	Go to step 4.	Go to step 3.
3	CHECK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector. 3) Disconnect the PRG DU connector.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	A temporary change of voltage occurred.
4	CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the PRG DU connector. 3) Measure the resistance between PRG CM connector and chassis ground. Connector & terminal (R422) No. 15 — Chassis ground: (R422) No. 7 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 5.	Repair or replace the short circuit of the harness.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

	Step	Check	Yes	No
5	CHECK PRG DU. Measure the resistance between PRG DU connectors. <i>Connector & terminal</i> <i>(R421) No. 7 — (R421) No. 14:</i>	Is the resistance 0.3 Ω ?	Go to step 6.	Replace the PRG DU. <Ref. to PRG-9, Power Rear Gate Control Module.>
6	CHECK CONNECTOR.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

J: DTC B2509 CLUTCH OPEN

DTC DETECTING CONDITION:

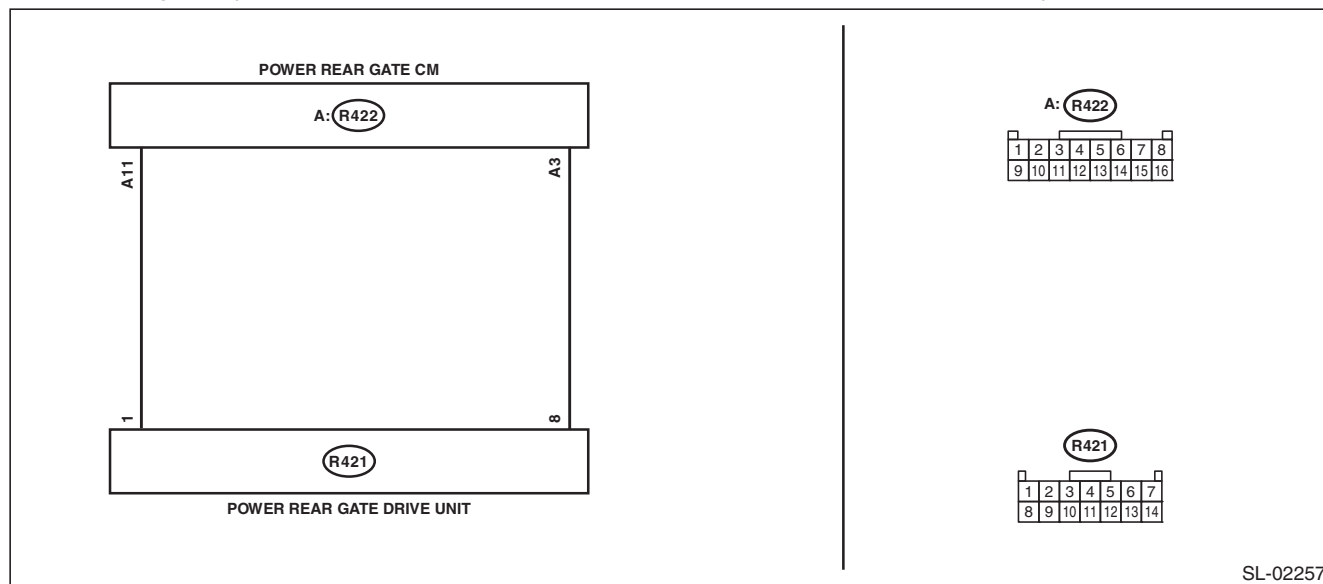
When the open circuit or short circuit in CLUTCH circuit is detected.

TROUBLE SYMPTOM:

During the auto-operation, door free, auto-operation do not function.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



	Step	Check	Yes	No
1	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Is B2509 current malfunction?	Go to step 2.	Go to step 3.
2	CHECK DTC. 1) Turn IGN SW to OFF. 2) Disconnect the PRG CM connector and reconnect it. 3) Manually close the rear gate to the half-shut position, and operate the power rear gate auto closer to fully close. (PRG initialization) 4) Press the operation SW to perform auto-open/close of PRG, and then return to the full-close position. 5) Turn the ignition switch to ON. 6) Using the Subaru Select Monitor, read DTC of PRG CM.	Is B2509 current malfunction?	Go to step 4.	Go to step 3.
3	CHECK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector. 3) Disconnect the PRG DU connector.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	A temporary change of voltage occurred.
4	CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the PRG DU connector. 3) Measure the resistance between PRG CM connector and PRG DU connector. Connector & terminal (R422) No. 11 — (R421) No. 1: (R422) No. 3 — (R421) No. 8:	Is the resistance 10 Ω or less?	Go to step 5.	Repair or replace the open circuit of harness.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
5 CHECK HARNESS. Measure the resistance between PRG CM connector and chassis ground. <i>Connector & terminal</i> <i>(R422) No. 3 — Chassis ground:</i> <i>(R422) No. 11 — Chassis ground:</i>	Is the resistance 1 M Ω or more?	Go to step 6.	Repair or replace the short circuit of the harness.
6 CHECK HARNESS. Measure the voltage between PRG CM connector and chassis ground. <i>Connector & terminal</i> <i>(R422) No. 3 (+) — Chassis ground (-):</i> <i>(R422) No. 11 (+) — Chassis ground (-):</i>	Is the voltage less than 1 V?	Go to step 7.	Repair or replace the short circuit of the harness.
7 CHECK PRG DU. Measure the resistance between PRG DU connectors. <i>Connector & terminal</i> <i>(R422) No. 1 — (R421) No. 8:</i>	Is the resistance 9.6 Ω $\pm$ 10%?	Go to step 8.	Replace the PRG DU. <Ref. to PRG-9, Power Rear Gate Control Module.>
8 CHECK CONNECTOR. Turn the ignition switch to OFF.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

K: DTC B250A TOUCH SENSORS BATT. GND SHORT OUT

DTC DETECTING CONDITION:

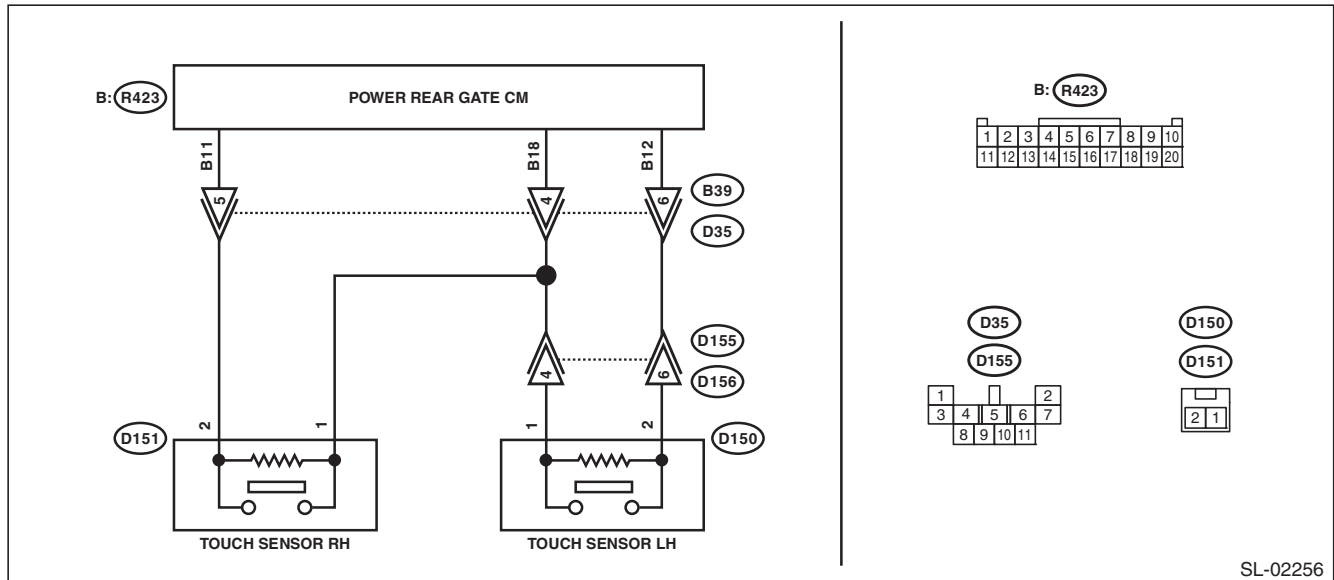
When malfunction in the touch sensor is detected.

TROUBLE SYMPTOM:

The touch sensor does not respond, and auto-operation does not function.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



	Step	Check	Yes	No
1	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Is B250A current malfunction?	Go to step 2.	Go to step 3.
2	CHECK DTC. 1) Turn IGN SW to ON. 2) Disconnect the PRG CM connector and reconnect it. 3) Turn the ignition switch to ON. 4) Using the Subaru Select Monitor, read DTC of PRG CM.	Is B250A current malfunction?	Go to step 3.	Go to step 3.
3	CHECK CURRENT DATA. Check «TOUCH SENSOR L» and «TOUCH SENSOR R» using the Subaru Select Monitor.	Does the data change (ON ↔ OFF), when the touch sensor is pressed with fingers?	Currently, system is normal. A temporary poor contact may be a possible cause. Therefore, check the harness connector.	Go to step 4.
4	CHECK HARNESS AND SENSOR. 1) Disconnect the touch sensor connector. 2) Measure the resistance between the touch sensor connectors. Connector & terminal (D150) No. 1 — (D150) No. 2: (D151) No. 1 — (D151) No. 2:	Is the resistance 100 Ω or less when the touch sensor is ON, and 1 kΩ or more when OFF?	Go to step 5.	Replace the touch sensor. <Ref. to PRG-19, Power Rear Gate Touch Sensor.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
5 CHECK HARNESS. Measure the resistance between PRG CM connector and touch sensor connector. <i>Connector & terminal</i> (R423) No. 12 — (D150) No. 2: (R423) No. 11 — (D151) No. 2: (R423) No. 18 — (D150) No. 1: (R423) No. 18 — (D151) No. 1:	Is the resistance 10 Ω or less?	Go to step 6.	Repair or replace the open circuit of harness.
6 CHECK HARNESS. Measure the resistance between PRG CM connector and chassis ground. <i>Connector & terminal</i> (R423) No. 12 — Chassis ground: (R423) No. 11 — Chassis ground: (R423) No. 18 — Chassis ground: (R423) No. 18 — Chassis ground:	Is the resistance 1 M Ω or more?	Go to step 7.	Repair or replace the short circuit of the harness.
7 CHECK HARNESS. Measure the voltage between PRG CM connector and chassis ground. <i>Connector & terminal</i> (R423) No. 12 (+) — Chassis ground (–): (R423) No. 11 (+) — Chassis ground (–): (R423) No. 18 (+) — Chassis ground (–): (R423) No. 18 (+) — Chassis ground (–):	Is the voltage less than 1 V?	Go to step 8.	Repair or replace the short circuit of the harness.
8 CHECK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

L: DTC B250B ROTATION SENSOR FAILURE (A OUTPUT FIXATION)

DTC DETECTING CONDITION:

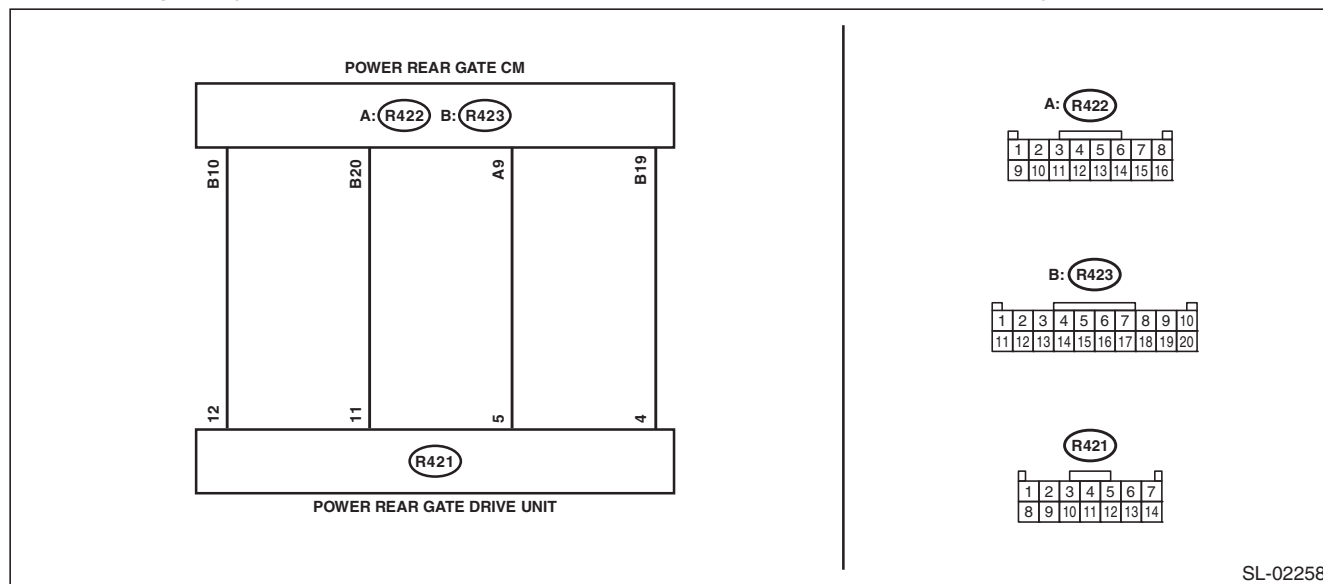
When malfunction in the rotation sensor is detected.

TROUBLE SYMPTOM:

The R/G opens or closes by itself, while pausing intermittently in between. (intermittent clutch mode)

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



Step	Check	Yes	No
1	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 2.	Go to step 3.
2	CHECK DTC. 1) Turn IGN SW to OFF. 2) Disconnect the PRG CM connector and reconnect it. 3) Manually close the rear gate to the half-shut position, and operate the power rear gate auto closer to fully close. (PRG initialization) 4) Press the operation SW to perform auto-open/close of PRG, and then return to the full-close position. 5) Turn the ignition switch to ON. 6) Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 4.	Go to step 3.
3	CHECK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector.	Repair or replace the poor contact of connector.	A temporary change of voltage occurred.
4	CHECK PRG CM. 1) Turn the ignition switch to ON. 2) Measure the voltage between PRG CM connector and chassis ground. Connector & terminal (R422) No. 9 (+) — Chassis ground (-):	Go to step 5.	Check the PRG CM power supply circuit.



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
5 CHECK CURRENT DATA. Check «Pulse-count» using the Subaru Select Monitor.	When the PRG driver's SW is pressed and held to perform the auto-operation, is the value of «Pulse-count» change?	Currently, system is normal. A temporary poor contact may be a possible cause. Therefore, check the harness connector.	Go to step 6.
6 CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the PRG DU connector. 3) Measure the resistance between PRG CM connector and PRG DU connector. Connector & terminal <i>(R423) No. 10 — (R421) No. 12:</i> <i>(R423) No. 20 — (R421) No. 11:</i> <i>(R423) No. 19 — (R421) No. 4:</i> <i>(R422) No. 9 — (R421) No. 5:</i>	Is the resistance 10 Ω or less?	Go to step 7.	Repair or replace the open circuit of harness.
7 CHECK HARNESS. Measure the resistance between PRG CM connector and chassis ground. Connector & terminal <i>(R423) No. 10 — Chassis ground:</i> <i>(R423) No. 20 — Chassis ground:</i> <i>(R423) No. 19 — Chassis ground:</i> <i>(R422) No. 9 — Chassis ground:</i>	Is the resistance 1 MΩ or more?	Go to step 8.	Repair or replace the short circuit of the harness.
8 CHECK HARNESS. Measure the voltage between PRG CM connector and chassis ground. Connector & terminal <i>(R423) No. 10 (+) — Chassis ground (-):</i> <i>(R423) No. 20 (+) — Chassis ground (-):</i> <i>(R423) No. 19 (+) — Chassis ground (-):</i> <i>(R422) No. 9 (+) — Chassis ground (-):</i>	Is the voltage less than 1 V?	Go to step 9.	Repair or replace the short circuit of the harness.
9 CHECK ROTATION SENSOR SIGNAL. 1) Connect the disconnected connectors. 2) Using an oscilloscope, measure the voltage of rotation sensor. Connector & terminal <i>(R423) No. 10 (+) — (R423) No. 19 (-):</i> <i>(R423) No. 20 (+) — (R423) No. 19 (-):</i>	Does the voltage change (0 V ↔ 5 V), when PRG is manually opened/closed?	Go to step 10.	Replace the PRG DU. <Ref. to PRG-9, Power Rear Gate Control Module.>
10 CHECK CONNECTOR. Disconnect the PRG CM connector.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

M: DTC B250D ROTATION SENSOR FAILURE (B OUTPUT FIXATION)

NOTE:

For the diagnostic procedure, refer to DTC B250B. <Ref. to PRG(diag)-35, DTC B250B ROTATION SENSOR FAILURE (A OUTPUT FIXATION), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

N: DTC B250F ROTATION SENSOR FAILURE (PULSE-COUNT FAILURE)

NOTE:

For the diagnostic procedure, refer to DTC B250B. <Ref. to PRG(diag)-35, DTC B250B ROTATION SENSOR FAILURE (A OUTPUT FIXATION), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

O: DTC B2511 ROTATION SENSOR FAILURE (REVERSE DIRECTION PULSE FAILURE)

NOTE:

For the diagnostic procedure, refer to DTC B250B. <Ref. to PRG(diag)-35, DTC B250B ROTATION SENSOR FAILURE (A OUTPUT FIXATION), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

P: DTC B2512 DAMPER BREAKAGE FAILURE

DTC DETECTING CONDITION:

When malfunction in the gas damper is detected.

TROUBLE SYMPTOM:

After the auto-open operation, auto-close operation occurs by itself. When PRG is open in manual operation, the gate is not held at the full-open position.

Step	Check	Yes	No
1 CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Is B2512 current malfunction?	Go to step 2.	PRG moved to the close-direction immediately after the auto-open operation due to temporary external force.
2 CHECK DAMPER. 1) Fully open PRG in manual operation. 2) Check the door behavior at the full-open position.	Is PRG held at the full-open position?	PRG moved to the close-direction immediately after the auto-open operation due to temporary external force.	Replace the damper. <Ref. to EB-58, REAR GATE DAMPER STAY, REMOVAL, Rear Gate.>



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Q: DTC B2513 LATCH CONDITION FAILURE

DTC DETECTING CONDITION:

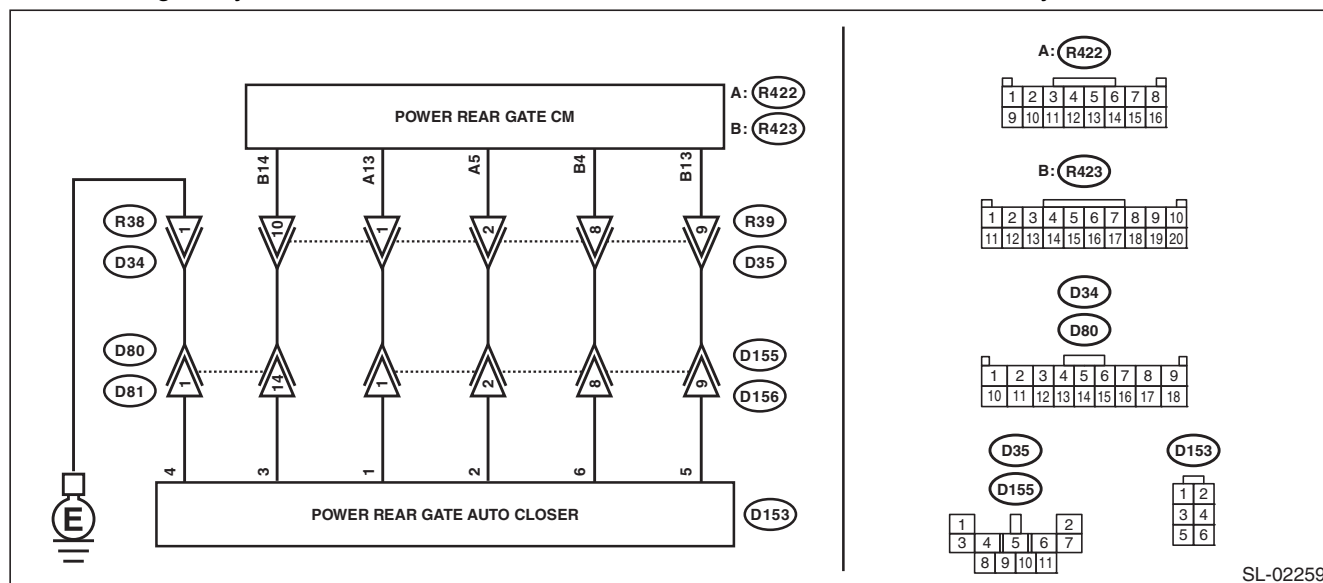
When malfunction in SW within the power rear gate auto closer is detected.

TROUBLE SYMPTOM:

- The PRG opens or closes by itself, while pausing intermittently in between during the auto-operation. (intermittent clutch mode)
- Auto-operation does not function.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



SL-02259

Step	Check	Yes	No
1	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 2.	Go to step 6.
2	CHECK DTC. 1) Turn IGN SW to OFF. 2) Disconnect the PRG CM connector and reconnect it. 3) Manually close PRG to the half-shut position, and operate the power rear gate auto closer to fully close. (PRG initialization) 4) Press the operation SW to perform auto-open/close of PRG, and then return to the full-close position. 5) Turn the ignition switch to ON. 6) Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 3.	Go to step 6.
3	CHECK CURRENT DATA. Check «SECTOR SW», «COURTESY SW», and «LATCH SW», using the Subaru Select Monitor.	Go to step 4.	Go to step 5.
4	CHECK CURRENT DATA. Check «CLOSER (OPEN)», «CLOSER (CLOSE)» using the Subaru Select Monitor.	Go to step 6.	Go to step 5.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
5 CHECK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector. 3) Disconnect the power rear gate auto closer connector.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Go to step 7.
6 CHECK POWER REAR GATE AUTO CLOSER. 1) Disconnect the PRG CM connector. 2) Manually close the rear gate from the full-open position to the half-shut position. 3) Check the power rear gate auto closer operation.	Does the pull-in operation occur from the half-shut position?	Currently, system is normal. A temporary poor contact may be a possible cause. Therefore, check the harness connector.	Go to step 7.
7 CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the power rear gate auto closer connector. 3) Measure the resistance between PRG CM connector and power rear gate auto closer connector. <i>Connector & terminal</i> <i>(R422) No. 13 — (R153) No. 1:</i> <i>(R422) No. 5 — (R153) No. 2:</i> <i>(R423) No. 4 — (R153) No. 6:</i> <i>(R423) No. 13 — (R153) No. 5:</i> <i>(R423) No. 14 — (R153) No. 3:</i>	Is the resistance 10 Ω or less?	Go to step 8.	Repair or replace the open circuit of harness.
8 CHECK HARNESS. Measure the resistance between PRG CM connector and chassis ground, and between power rear gate auto closer connector and chassis ground. <i>Connector & terminal</i> <i>(R422) No. 13 — Chassis ground:</i> <i>(R422) No. 5 — Chassis ground:</i> <i>(R423) No. 4 — Chassis ground:</i> <i>(R423) No. 13 — Chassis ground:</i> <i>(R423) No. 14 — Chassis ground:</i> <i>(D153) No. 4 — Chassis ground:</i>	Is the resistance 1 MΩ or more?	Go to step 9.	Repair or replace the short circuit of the harness.
9 CHECK HARNESS. Measure the voltage between PRG CM connector and chassis ground, and between power rear gate auto closer connector and chassis ground. <i>Connector & terminal</i> <i>(R422) No. 13 (+) — Chassis ground (-):</i> <i>(R422) No. 5 (+) — Chassis ground (-):</i> <i>(R423) No. 4 (+) — Chassis ground (-):</i> <i>(R423) No. 13 (+) — Chassis ground (-):</i> <i>(R423) No. 14 (+) — Chassis ground (-):</i> <i>(D153) No. 4 (+) — Chassis ground (-):</i>	Is the voltage less than 1 V?	Go to step 10.	Repair or replace the short circuit of the harness.
10 CHECK HARNESS. Measure the resistance between power rear gate auto closer connector and chassis ground. <i>Connector & terminal</i> <i>(D153) No. 4 — Chassis ground:</i>	Is the resistance less than 10 Ω?	Go to step 11.	Repair or replace the short circuit of the harness.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
11 CHECK POWER REAR GATE AUTO CLOSER. 1) Connect the PRG CM connector and PRG DU connector. 2) Check «SECTOR SW», «COURTESY SW», and «LATCH SW», using the Subaru Select Monitor. 3) Fully open the rear gate, and operate each switch manually.	Does each data change (ON ↔ OFF), when the switch is operated?	Go to step 12.	Replace the power rear gate auto closer.
12 CHECK POWER REAR GATE AUTO CLOSER. Check the power rear gate auto closer operation, when battery voltage is applied directly to the power rear gate auto closer connector. Terminals <i>(D422) No. 13 — positive terminal:</i> <i>(D422) No. 5 — ground terminal:</i>	Does the power rear gate auto closer operate?	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>	Replace the power rear gate auto closer.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

R: DTC B2514 IG FAILURE

DTC DETECTING CONDITION:

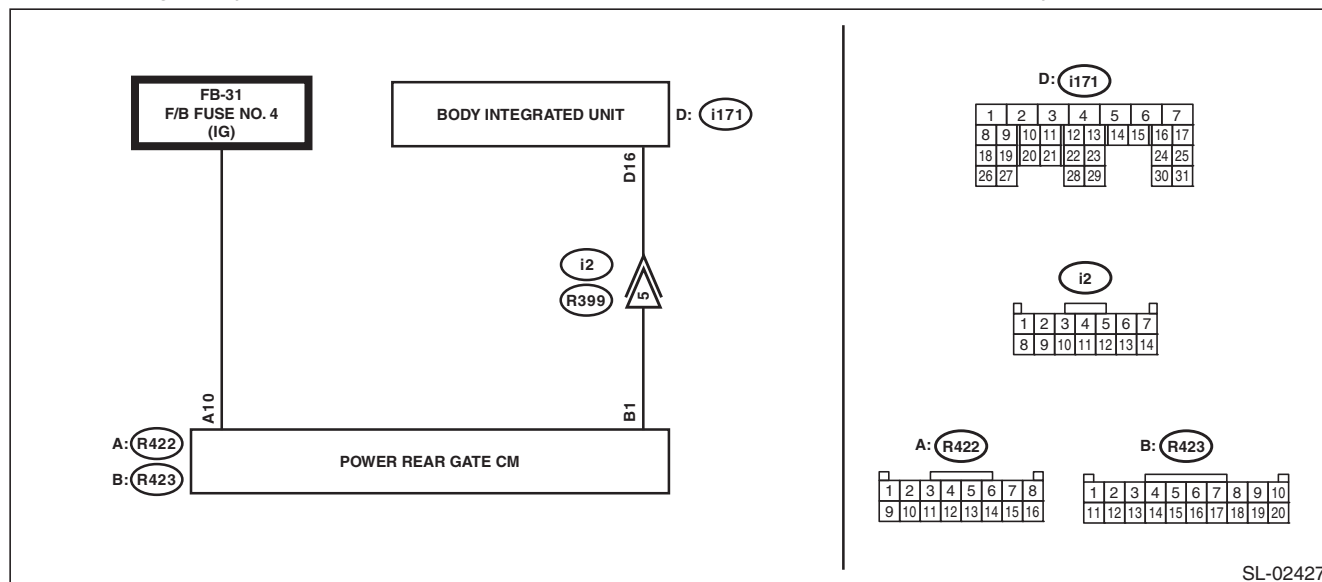
When the LIN communication signal and direct line signal do not match.

TROUBLE SYMPTOM:

PRG does not operate.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



Step	Check	Yes	No
1	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 2.	Go to step 4.
2	CHECK DTC. 1) Turn IGN SW to ON. 2) Disconnect the PRG CM connector and reconnect it. 3) Turn the ignition switch to ON. 4) Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 3.	Go to step 4.
3	CHECK CURRENT DATA. Check «Ignition Signal», «IGN SW» using the Subaru Select Monitor.	Go to step 4.	When «Ignition Signal» is not synchronized: Go to step 5. When «IGN SW» is not synchronized: Go to step 9.
4	CHECK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector.	Repair or replace the poor contact of connector.	A temporary change of voltage occurred.
5	CHECK CURRENT DATA. Check the current data «Voltage of IGN» of body integrated unit using Subaru Select Monitor.	Go to step 6.	Check the body control system. <Ref. to BC(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
6 CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the body integrated unit connector. 3) Measure the resistance between PRG CM connector and body integrated unit. Connector & terminal (R423) No. 1 — (i171) No. 16:	Is the resistance less than 10 Ω ?	Go to step 7.	Repair or replace the open circuit of harness.
7 CHECK HARNESS. Measure the resistance between PRG CM connector and chassis ground. Connector & terminal (R423) No. 1 — Chassis ground:	Is the resistance 1 M Ω or more?	Go to step 8.	Repair or replace the short circuit of the harness.
8 CHECK HARNESS. Measure the voltage between PRG CM connector and chassis ground. Connector & terminal (R423) No. 1 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 9.	Repair or replace the short circuit of the harness.
9 CHECK HARNESS. 1) Turn the ignition switch to ON. 2) Measure the voltage between PRG CM connector and chassis ground. Connector & terminal (R422) No. 10 (+) — Chassis ground (-):	Is the voltage 10.5 V or more and less than 16 V?	Go to step 10.	Repair or replace the open circuit of harness.
10 CHECK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

S: DTC B2515 LATCH SW FAILURE

NOTE:

For the diagnostic procedure, refer to DTC B2513. <Ref. to PRG(diag)-39, DTC B2513 LATCH CONDITION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

T: DTC B2516 SECTOR SW FAILURE

NOTE:

For the diagnostic procedure, refer to DTC B2513. <Ref. to PRG(diag)-39, DTC B2513 LATCH CONDITION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

U: DTC B2517 COURTESY SW FAILURE

NOTE:

For the diagnostic procedure, refer to DTC B2513. <Ref. to PRG(diag)-39, DTC B2513 LATCH CONDITION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

V: DTC B2518 PRG CONTINUOUSLY-WORKING FAILURE

DTC DETECTING CONDITION:

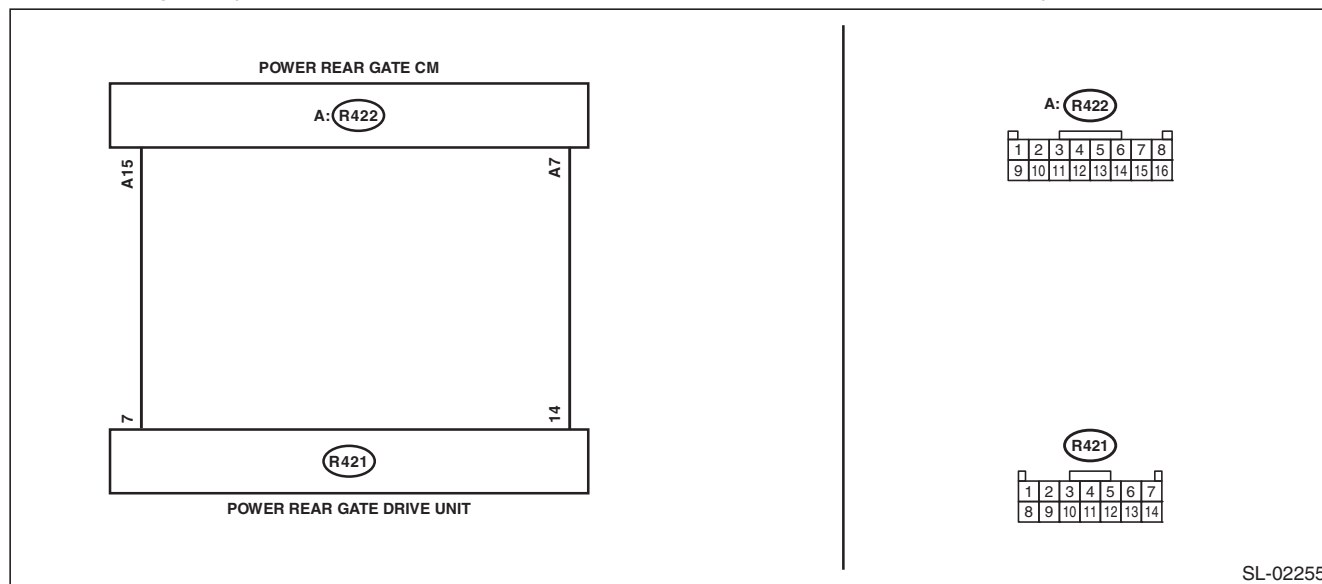
When the motor operation continued for 30 seconds or more.

TROUBLE SYMPTOM:

During the auto-operation, the door free condition occurs.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



Step	Check	Yes	No
1	CHECK REAR GATE.		
	Is there any snow, ice or installed parts other than genuine parts on the rear gate?	Remove any snow, ice or installed parts other than genuine parts.	Go to step 2.
2	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.		
	Is B2518 current malfunction?	Go to step 4.	Go to step 3.
3	CHECK DTC. 1) Turn IGN SW to OFF. 2) Disconnect the PRG CM connector and reconnect it. 3) Fully close the rear gate. 4) Press the operation SW to perform auto-open/close of PRG, and then return to the full-close position. 5) Turn the ignition switch to ON. 6) Using the Subaru Select Monitor, read DTC of PRG CM.		
	Is B2518 current malfunction?	Go to step 4.	Currently, system is normal. A temporary poor contact may be a possible cause. Therefore, check the harness connector.
4	CHECK REAR GATE. Press and hold the opener button, and perform open/close operation manually.		
	Is abnormal weight detected compared to equivalent vehicles?	Go to step 5.	Go to step 6.
5	CHECK REAR GATE.		
	Is there distortion or rust on the hinge? (Is there any history of accidents?)	Repair the rear gate hinge.	Replace the damper. <Ref. to EB-58, REAR GATE DAMPER STAY, REMOVAL, Rear Gate.>

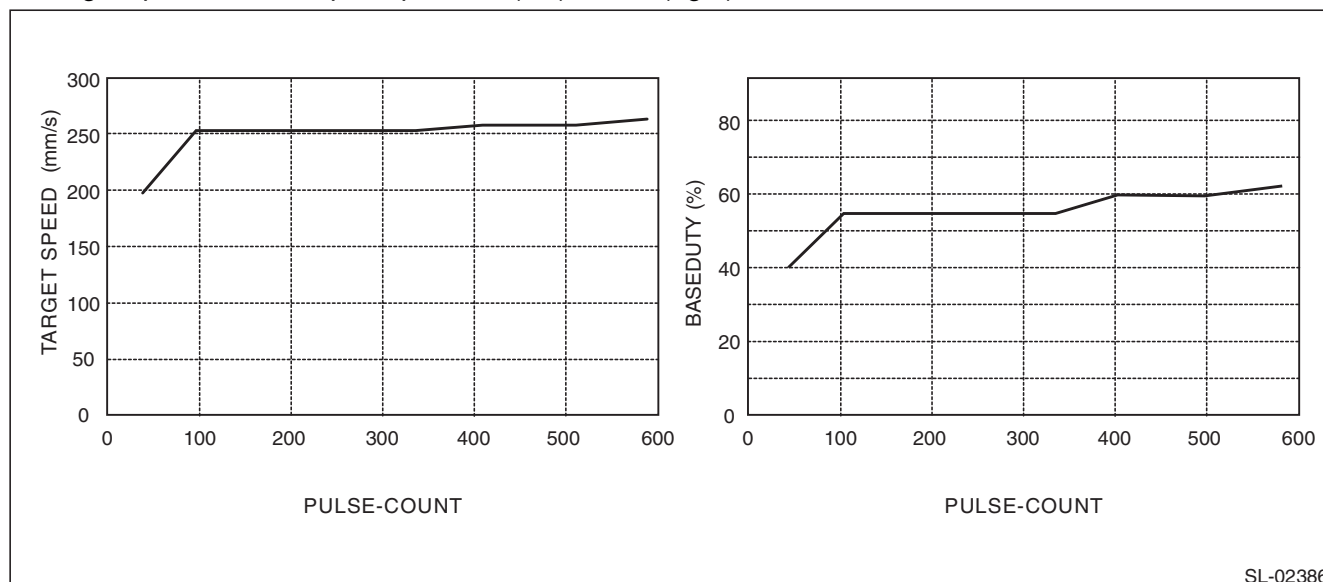
Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
6 CHECK PRG CM. 1) Perform auto-open/close of PRG. 2) Check the waveform using an oscilloscope. Connector & terminal (R422) No. 7 — (R422) No. 15:	Is waveform normal? At open: DUTY 40 — 70% At close: DUTY 60 — 80% (However, the value decreases to 30% at the moment of closing) For the waveform, refer to Note in the margin.	Go to step 7.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>
7 CHECK HARNESS. 1) Disconnect the PRG CM connector and PRG DU connector. 2) Using a tester, measure the resistance between the PRG CM connector and PRG DU connector. Connector & terminal (R422) No. 7 — (R421) No. 14: (R422) No. 15 — (R421) No. 7:	Is the resistance less than 10 Ω ?	Replace the PRG DU. <Ref. to PRG-9, Power Rear Gate Control Module.>	Repair or replace the open circuit of harness.

NOTE:

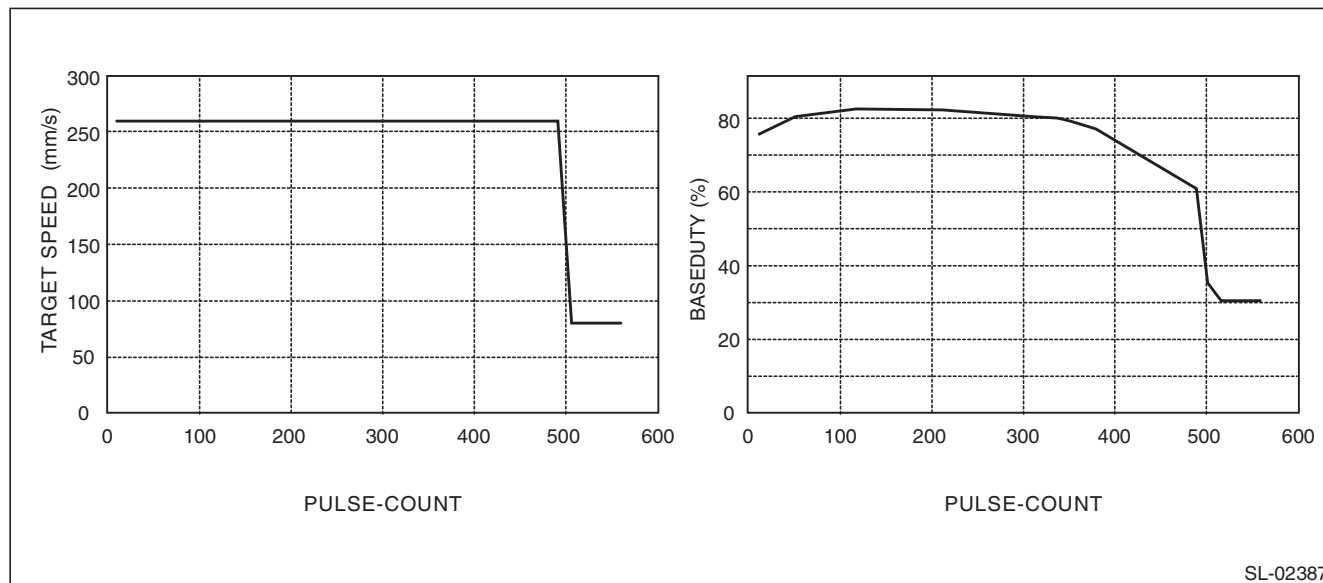
- Target speed at PRG open operation (left) DUTY (right)



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

- Target speed at PRG close operation (left) DUTY (right)



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

W: DTC B2519 POWER +B OPEN

DTC DETECTING CONDITION:

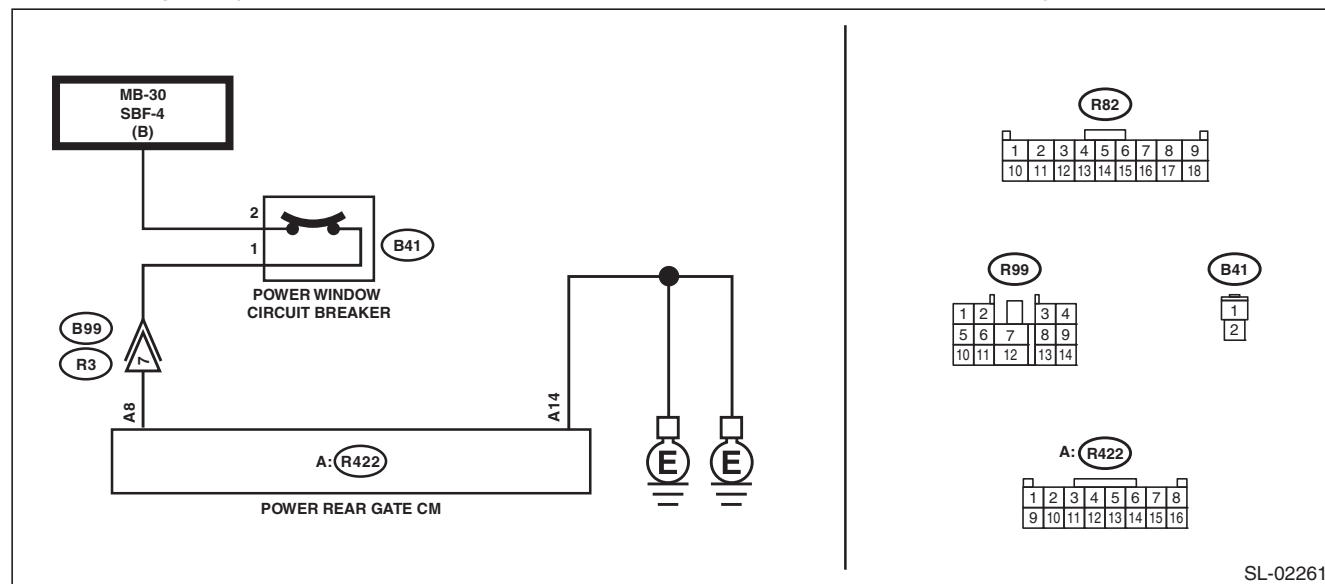
When power supply failure related to PRG CM power is detected.

TROUBLE SYMPTOM:

During the auto-operation, the door free, the auto-operation do not function.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



SL-02261

Step	Check	Yes	No
1	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 2.	Go to step 4.
2	CHECK DTC. 1) Turn IGN SW to ON. 2) Disconnect the PRG CM connector and reconnect it. 3) Turn the ignition switch to ON. 4) Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 3.	Go to step 4.
3	CHECK CURRENT DATA. Check «+POWER B» using the Subaru Select Monitor.	Go to step 5.	Go to step 4.
4	CHECK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector.	Repair or replace the poor contact of connector.	A temporary change of voltage occurred.
5	CHECK FUSE. 1) Turn the ignition switch to OFF. 2) Check the fuse.	Go to step 6.	Replace the defective fuse. When the fuse is blown immediately, repair the short circuit.
6	CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Using a tester, measure the voltage between the PRG CM connector and chassis ground. Connector & terminal (R422) No. 8 (+) — Chassis ground (-):	Go to step 7.	Repair or replace the open circuit of harness.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
7 CHECK HARNESS. Using a tester, measure the resistance between the PRG CM connector and chassis ground. Connector & terminal (R422) No. 14 — Chassis ground:	Is the resistance less than 10 Ω ?	Go to step 8.	Repair or replace the open circuit of harness.
8 CHECK CONNECTOR. Turn the ignition switch to OFF.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

X: DTC B251A LIN CONNECTION FAILURE (NO-RECEIVE DATA FAILURE)

DTC DETECTING CONDITION:

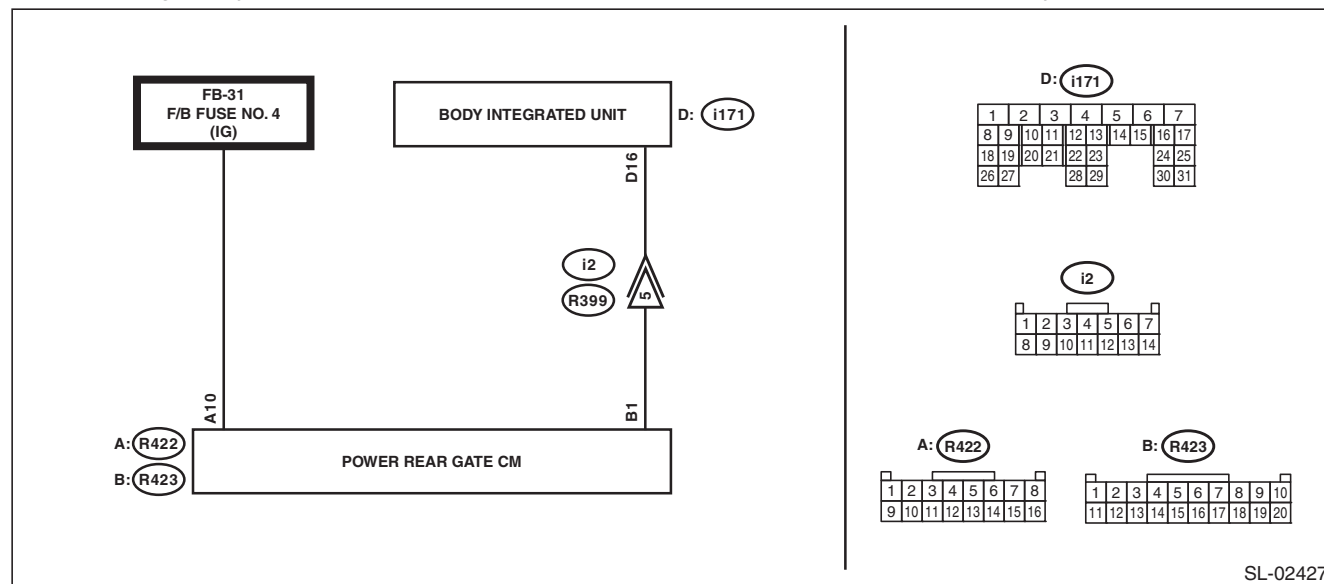
When LIN communication failure is detected.

TROUBLE SYMPTOM:

The auto-operation does not function, and reverse operation occurs during the auto-open operation.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



SL-02427

Step	Check	Yes	No
1	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 2.	Go to step 3.
2	CHECK DTC. 1) Turn IGN SW to ON. 2) Disconnect the PRG CM connector and reconnect it. 3) Turn the ignition switch to ON. 4) Using the Subaru Select Monitor, read DTC of PRG CM.	Go to step 4.	Go to step 3.
3	CHECK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector.	Repair or replace the poor contact of connector.	Temporary communication failure occurred.
4	CHECK INTEGRATED UNIT. Read the DTC of body integrated unit using Subaru Select Monitor.	Perform the diagnosis according to DTC for the body integrated unit.	Go to step 5.
5	CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the body integrated unit connector. 3) Measure the resistance between PRG CM connector and body integrated unit. Connector & terminal (R423) No. 1 — (i171) No. 16:	Go to step 6.	Repair or replace the open circuit of harness.
6	CHECK HARNESS. Measure the resistance between PRG CM connector and chassis ground. Connector & terminal (R423) No. 1 — Chassis ground:	Go to step 7.	Repair or replace the short circuit of the harness.



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
7 CHECK HARNESS. Measure the voltage between PRG CM connector and chassis ground. <i>Connector & terminal</i> <i>(R423) No. 1 (+) — Chassis ground (-):</i>	Is the voltage less than 1 V?	Go to step 8.	Repair or replace the short circuit of the harness.
8 CHECK HARNESS. Measure the voltage between PRG CM connector and chassis ground. <i>Connector & terminal</i> <i>(R422) No. 10 (+) — Chassis ground (-):</i>	Is the voltage 10.5 V or more and less than 16 V?	Go to step 9.	Repair or replace the open circuit of harness.
9 CHECK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

Y: DTC B251B LIN CONNECTION FAILURE (BUS PHYSICAL FAILURE)

NOTE:

For the diagnostic procedure, refer to DTC B251A. <Ref. to PRG(diag)-49, DTC B251A LIN CONNECTION FAILURE (NO-RECEIVE DATA FAILURE), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

Z: DTC B251D AT/MT JUDGMENT FAILURE

NOTE:

For the diagnostic procedure, refer to DTC B251A. <Ref. to PRG(diag)-49, DTC B251A LIN CONNECTION FAILURE (NO-RECEIVE DATA FAILURE), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

AA:DTC B2522 EEPROM FAILURE

DTC DETECTING CONDITION:

When failure in PRG CM is detected.

TROUBLE SYMPTOM:

The memorized half-stop position is reset, and returned to the default setting.

Step	Check	Yes	No
1 CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Is B2522 current malfunction?	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>	Go to step 2.
2 CHECK DTC. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector and reconnect it. 3) Turn the ignition switch to ON. 4) Using the Subaru Select Monitor, read DTC of PRG CM.	Is B2522 current malfunction?	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>	Currently, system is normal. A temporary poor contact may be a possible cause. Therefore, check the harness connector.



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

AB:DTC B2523 HALF STOP SOLENOID FAILURE

DTC DETECTING CONDITION:

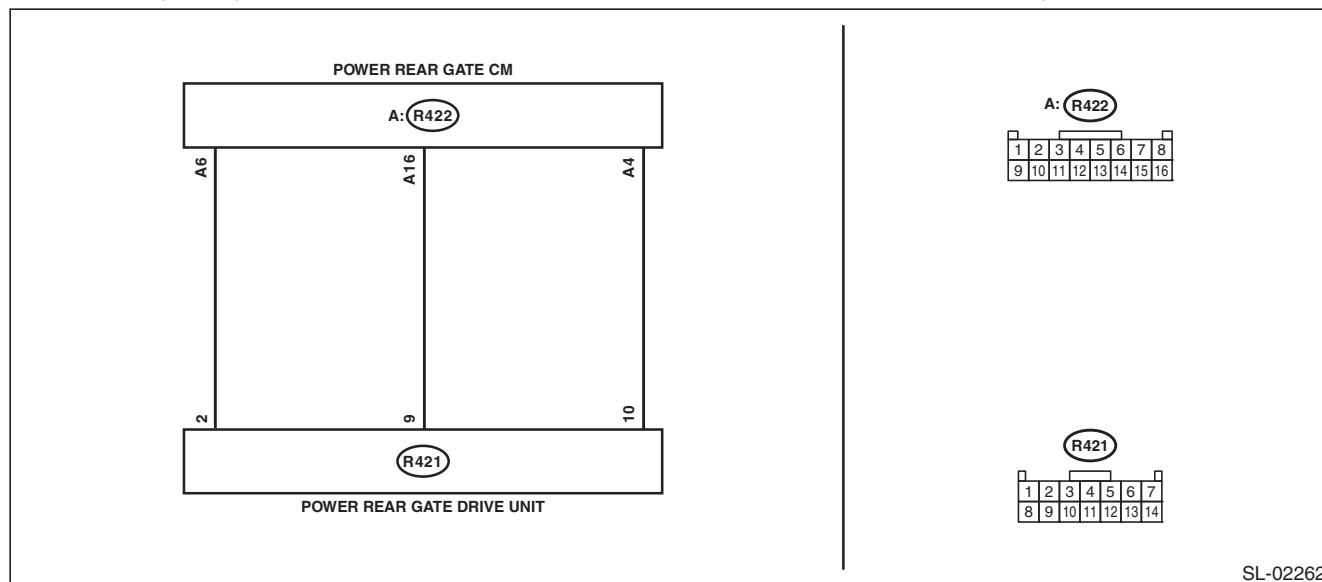
When malfunction in the keep solenoid is detected.

TROUBLE SYMPTOM:

Half-stop is not possible.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



SL-02262

	Step	Check	Yes	No
1	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Is B2523 current malfunction?	Go to step 2.	Go to step 3.
2	CHECK DTC. 1) Turn IGN SW to ON. 2) Disconnect the PRG CM connector and reconnect it. 3) Turn the ignition switch to ON. 4) Using the Subaru Select Monitor, read DTC of PRG CM.	Is B2523 current malfunction?	Go to step 4.	Go to step 3.
3	CHECK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	A temporary change of voltage occurred.
4	CHECK HARNESS. Measure the voltage between PRG CM connector and chassis ground. Connector & terminal (R422) No. 6 (+) — Chassis ground (–):	Is the voltage 10.5 V or more and less than 16 V?	Go to step 5.	Refer to step 4 and subsequent procedures for DTC B2500 diagnosis, and check the power supply circuit. <Ref. to PRG(diag)-17, DTC B2500 BATT P/SUPPLY FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
5 CHECK CURRENT DATA. 1) Check «HALF STOP SOL (Lock)», «HALF STOP SOL (Cancel)», and «HALF STOP SOL POS SW», using the Subaru Select Monitor. 2) During the auto-open operation, tap any of the keyless rear gate SW, PRG driver's SW, PRG opener button, or PRG inner SW to stop the operation in a half-way position. Tap SW again to operate the auto-close, and then check the current data. CAUTION: ON output for lock and cancellation requires extremely short time (approx. 0.4 seconds). To check, limit the number of the display items on the Subaru Select Monitor to three. When the display items are too many, changes in the output signals will not be reflected.	Are the following changes detected? • At R/G stop HALF STOP SOL (Lock), OFF → ON → OFF HALF STOP SOL POS SW, OFF → ON • At R/G re-operation HALF STOP SOL (Cancel), OFF → ON → OFF HALF STOP SOL POS SW, ON → OFF	Go to step 6.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>
6 CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the PRG DU connector. 3) Measure the resistance between PRG CM connector and PRG DU. Connector & terminal (R422) No. 16 — (R421) No. 9: (R422) No. 4 — (R421) No. 10: (R422) No. 6 — (R421) No. 2:	Is the resistance less than 10 Ω?	Go to step 7.	Repair or replace the open circuit of harness.
7 CHECK HARNESS. Measure the resistance between PRG CM connector and chassis ground. Connector & terminal (R422) No. 16 — Chassis ground: (R422) No. 4 — Chassis ground: (R422) No. 6 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 8.	Repair or replace the short circuit of the harness.
8 CHECK HARNESS. Measure the voltage between PRG CM connector and chassis ground. Connector & terminal (R422) No. 16 (+) — Chassis ground (–): (R422) No. 4 (+) — Chassis ground (–): (R422) No. 6 (+) — Chassis ground (–):	Is the voltage less than 1 V?	Go to step 9.	Repair or replace the short circuit of the harness.
9 CHECK PRG DU. 1) Connect the PRG DU connector only. 2) Measure the resistance between PRG CM connectors. Connector & terminal (R422) No. 16 — (R422) No. 6: (R422) No. 4 — (R422) No. 6:	Is the resistance less than 10 Ω?	Go to step 10.	Replace the PRG DU. <Ref. to PRG-9, Power Rear Gate Control Module.>
10 CHECK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the PRG CM connector. 3) Disconnect the PRG DU connector.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>



General Diagnostic Table

POWER REAR GATE SYSTEM (DIAGNOSTICS)

12.General Diagnostic Table

A: INSPECTION

Symptoms	Note
Turn hazard lights do not illuminate	<Ref. to PRG(diag)-55, TURN HAZARD LIGHTS DO NOT ILLUMINATE, INSPECTION, Diagnostics with Phenomenon.>
The buzzer does not sound	<Ref. to PRG(diag)-56, THE BUZZER DOES NOT SOUND, INSPECTION, Diagnostics with Phenomenon.>
Half-stop cannot be cancelled	<Ref. to PRG(diag)-58, HALF-STOP CANNOT BE CANCELLED, INSPECTION, Diagnostics with Phenomenon.>
Operation by the PRG driver's SW is not possible	<Ref. to PRG(diag)-60, OPERATION BY THE PRG DRIVER'S SW IS NOT POSSIBLE, INSPECTION, Diagnostics with Phenomenon.>
Memory height SW does not function.	<Ref. to PRG(diag)-62, CHECK MEMORY HEIGHT SW INPUT CIRCUIT, INSPECTION, Diagnostics with Phenomenon.>
PRG inner SW does not function	<Ref. to PRG(diag)-64, PRG INNER SW DOES NOT FUNCTION, INSPECTION, Diagnostics with Phenomenon.>
PRG position cannot be memorized.	<Ref. to PRG(diag)-65, PRG POSITION CANNOT BE MEMORIZED, INSPECTION, Diagnostics with Phenomenon.>
PRG opener button does not function	<Ref. to PRG(diag)-66, PRG OPENER BUTTON DOES NOT FUNCTION, INSPECTION, Diagnostics with Phenomenon.>
Operation from keyless/keyless access mobile key is not possible.	<Ref. to PRG(diag)-67, OPERATION FROM KEYLESS/KEYLESS ACCESS MOBILE KEY IS NOT POSSIBLE, INSPECTION, Diagnostics with Phenomenon.>
Check PRG driver's SW input circuit	<Ref. to PRG(diag)-69, CHECK PRG DRIVER'S SW INPUT CIRCUIT, INSPECTION, Diagnostics with Phenomenon.>
Check PRG inner SW input circuit	<Ref. to PRG(diag)-70, CHECK PRG INNER SW INPUT CIRCUIT, INSPECTION, Diagnostics with Phenomenon.>



Diagnostics with Phenomenon

POWER REAR GATE SYSTEM (DIAGNOSTICS)

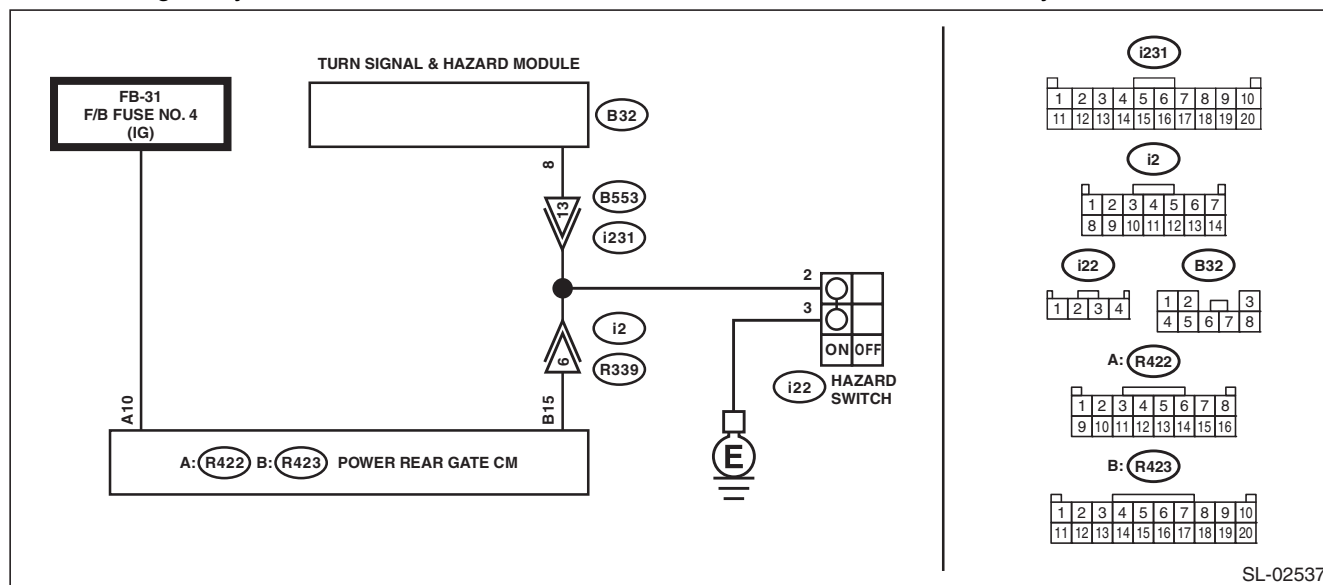
13. Diagnostics with Phenomenon

A: INSPECTION

1. TURN HAZARD LIGHTS DO NOT ILLUMINATE

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



SL-02537

Step	Check	Yes	No
1	CHECK CURRENT DATA. Check «IGN SW» using the Subaru Select Monitor.	Go to step 4.	Go to step 2.
2	CHECK FUSE. 1) Turn the ignition switch to OFF. 2) Check the fuse.	Go to step 3.	Replace the defective fuse. When the fuse is blown immediately, repair the short circuit.
3	CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Measure the voltage between PRG CM connector and chassis ground. Connector & terminal (R422) No. 10 (+) — Chassis ground (-):	Go to step 4.	Repair or replace the open circuit of harness.
4	CHECK CURRENT DATA. 1) Check «HAZARD» using the Subaru Select Monitor. 2) Operate the power rear gate to open.	Go to step 5.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>
5	CHECK HAZARD SWITCH. Turn the hazard switch to ON.	Go to step 6.	Replace the turn hazard CM. <Ref. to LI-41, REMOVAL, Turn Signal Light & Hazard Light Unit.>

Diagnostics with Phenomenon

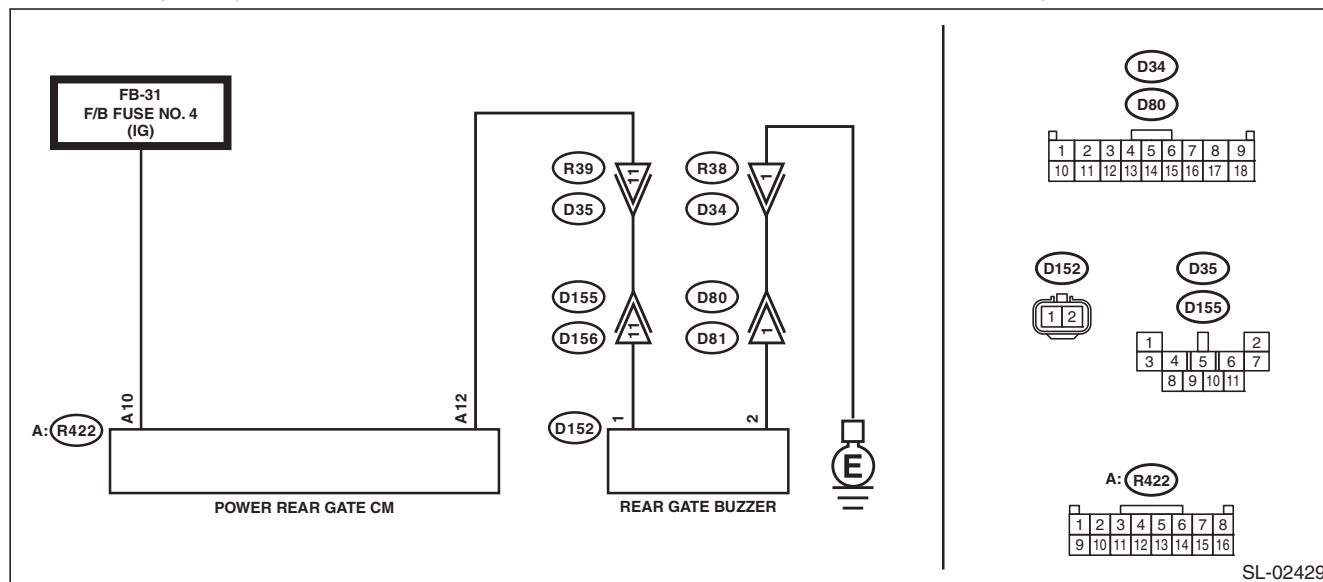
POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
6 CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the turn hazard CM connector. 3) Disconnect the hazard switch connector. 4) Measure the resistance between PRG CM connector and turn hazard CM and hazard switch connector. Connector & terminal (R423) No. 15 — (B32) No. 8: (B32) No. 8 — (i22) No. 2:	Is the resistance less than 10 Ω ?	Go to step 7.	Repair or replace the open circuit of harness.
7 CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the turn hazard CM connector. 3) Measure the resistance between PRG CM connector and chassis ground. Connector & terminal (R423) No. 15 — Chassis ground:	Is the resistance 1 M Ω or more?	Go to step 8.	Repair or replace the short circuit of the harness.
8 CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the turn hazard CM connector. 3) Measure the voltage between PRG CM connector and chassis ground. Connector & terminal (R423) No. 15 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 9.	Repair or replace the short circuit of the harness.
9 CHECK CONNECTOR. Check each connector.	Is there poor contact of connector?	Repair or replace the connector.	A temporary change of voltage occurred.

2. THE BUZZER DOES NOT SOUND

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



SL-02429

Step	Check	Yes	No
1 CHECK CURRENT DATA. Check «IGN SW» using the Subaru Select Monitor.	Does the data value change according to the ignition switch ON/OFF? (ON $\longleftrightarrow$ OFF)	Go to step 4.	Go to step 2.



Diagnostics with Phenomenon

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
2 CHECK FUSE. 1) Turn the ignition switch to OFF. 2) Check the fuse.	Is the fuse OK?	Go to step 3.	Replace the defective fuse. When the fuse is blown immediately, repair the short circuit.
3 CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Measure the voltage between PRG CM connector and chassis ground. <i>Connector & terminal</i> <i>(R422) No. 10 (+) — Chassis ground (-):</i>	Is the voltage 10 V or more and less than 16 V, when the ignition switch is ON?	Go to step 4.	Repair or replace the open circuit of harness.
4 CHECK FUNCTION. 1) Turn the ignition switch to OFF. 2) Fully close PRG. 3) Turn the memory height SW to OFF. 4) Press and hold the PRG driver's SW to open PRG. 5) Repeat tapping the PRG driver's SW to reverse PRG three times so that the door free condition can be achieved.	Does the buzzer sound, when PRG operation starts, or when the door free condition is achieved?	If the buzzer sounds when operation starts, the system is normal. If the buzzer sounds when the door free condition is achieved, Go to step 5.	Go to step 6.
5 CHECK CURRENT DATA. Check «Answer-Back Buzzer Information» using the Subaru Select Monitor.	Is the data value displayed as OFF?	Currently, system is normal. A temporary poor contact may be a possible cause. Therefore, check the harness connector.	Go to step 6.
6 CHECK CURRENT DATA. 1) Check «BUZZER» using the Subaru Select Monitor. 2) Operate PRG to open.	Is the change of ON ↔ OFF detected during the auto-open operation?	Go to step 7.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>
7 CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the buzzer connector. 3) Measure the resistance between PRG CM connector and buzzer connector. <i>Connector & terminal</i> <i>(R422) No. 12 — (D152) No. 1:</i>	Is the resistance less than 10 Ω?	Go to step 8.	Repair or replace the open circuit of harness.
8 CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the buzzer connector. 3) Measure the resistance between PRG CM connector and chassis ground. <i>Connector & terminal</i> <i>(R422) No. 12 — Chassis ground:</i>	Is the resistance 1 MΩ or more?	Go to step 9.	Repair or replace the short circuit of the harness.
9 CHECK HARNESS. Measure the resistance between PRG CM connector and chassis ground. <i>Connector & terminal</i> <i>(D152) No. 2 — Chassis ground:</i>	Is the resistance less than 10 Ω?	Go to step 10.	Repair or replace the open circuit of harness.
10 CHECK HARNESS. 1) Connect the PRG CM connector only. 2) Perform step 4 operations. 3) Measure the voltage between the buzzer connector and chassis ground. <i>Connector & terminal</i> <i>(D152) No. 1 (+) — Chassis ground (-):</i>	Is the following change measured, when PRG operation starts, or when the door free condition is achieved? Voltage: 10.5 V or more, less than 16 V DUTY: 50%	Replace the buzzer. <Ref. to PRG-20, Power Rear Gate Buzzer.>	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

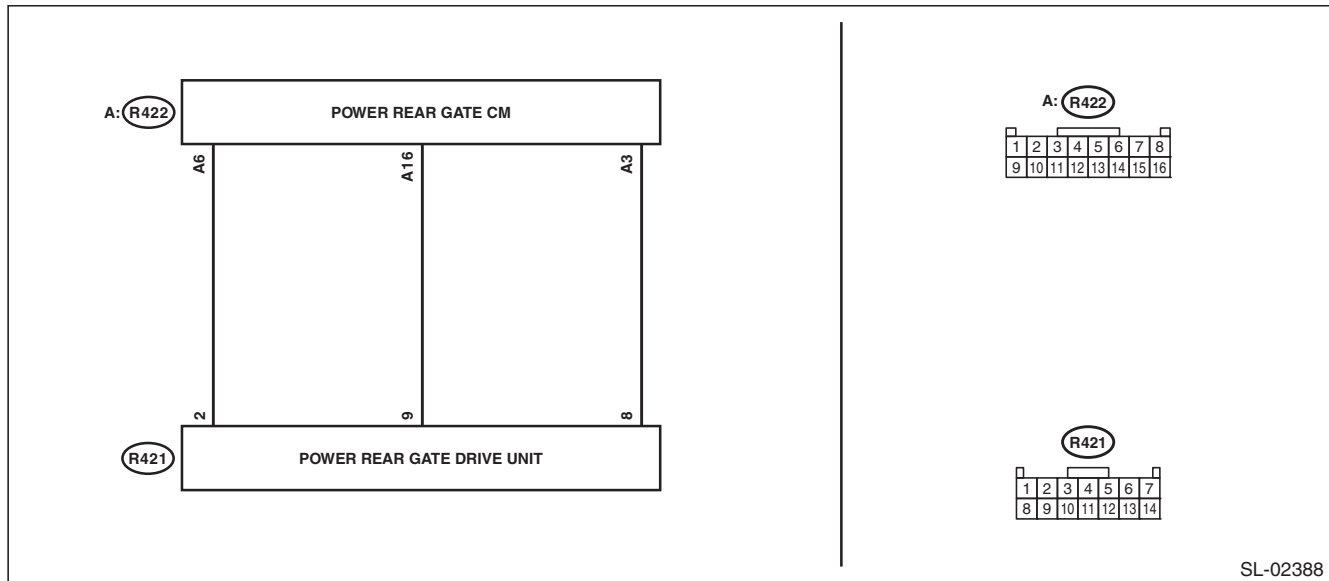
Diagnostics with Phenomenon

POWER REAR GATE SYSTEM (DIAGNOSTICS)

3. HALF-STOP CANNOT BE CANCELLED

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



SL-02388

Step	Check	Yes	No
1 CHECK OPERATION SW. Refer to "CHECK PRG DRIVER'S SW INPUT CIRCUIT", "CHECK PRG INNER SW INPUT CIRCUIT", "OPERATION FROM KEYLESS/KEYLESS ACCESS MOBILE KEY IS NOT POSSIBLE" in "Diagnostics with Phenomenon", and check each operation SW. <Ref. to PRG(diag)-69, CHECK PRG DRIVER'S SW INPUT CIRCUIT, INSPECTION, Diagnostics with Phenomenon.> <Ref. to PRG(diag)-70, CHECK PRG INNER SW INPUT CIRCUIT, INSPECTION, Diagnostics with Phenomenon.> <Ref. to PRG(diag)-67, OPERATION FROM KEYLESS/KEYLESS ACCESS MOBILE KEY IS NOT POSSIBLE, INSPECTION, Diagnostics with Phenomenon.>	Is there any fault?	Perform the repair according to each diagnosis.	Go to step 2.
2 CHECK CURRENT DATA. Check «HALF STOP SOL (Cancel)» using the Subaru Select Monitor. CAUTION: ON output for solenoid cancellation requires extremely short time (approx. 0.4 seconds). To check, limit the number of the display items on the Subaru Select Monitor to three. When the display items are too many, changes in the output signals will not be reflected.	Is the following output displayed, when PRG close-operation is performed with the operation SW? "OFF → ON → OFF"	Go to step 3.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

Diagnostics with Phenomenon

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
3 CHECK PRG CM. Measure the voltage between PRG CM connector and chassis ground. Connector & terminal (R422) No. 6 (+) — Chassis ground (-):	Is the voltage 10.5 V or more and less than 16 V?	Go to step 4.	Refer to step 4 and subsequent procedures for DTC B2500 diagnosis, and check the power supply circuit. <Ref. to PRG(diag)-17, DTC B2500 BATT P/SUPPLY FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
4 CHECK PRG CM. Measure the voltage between PRG CM connector and chassis ground, using an oscilloscope. Connector & terminal (R422) No. 4 (+) — Chassis ground (-):	Is the voltage less than 1 V for 0.4 seconds, when PRG close-operation is performed with the operation SW? (Reference: Waveform shown on the left)	Go to step 5.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>
5 CHECK PRG CM. Measure the voltage between PRG CM connector and chassis ground. Connector & terminal (R422) No. 16 — Chassis ground:	Is it less than 1 V?	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>	Go to step 6.
6 CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the PRG DU connector. 3) Measure the resistance between PRG CM connector and PRG DU connector. Connector & terminal (R422) No. 6 — (R421) No. 2: (R422) No. 4 — (R421) No. 8:	Is the resistance less than 10 Ω ?	Go to step 7.	Repair or replace the open circuit of harness.
7 CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the PRG DU connector. 3) Measure the resistance between PRG CM connector and chassis ground. Connector & terminal (R422) No. 6 — Chassis ground: (R422) No. 16 — Chassis ground:	Is the resistance 1 M Ω or more?	Go to step 8.	Repair or replace the short circuit of the harness.
8 CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the PRG DU connector. 3) Measure the voltage between PRG CM connector and chassis ground. Connector & terminal (R422) No. 4 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 9.	Repair or replace the short circuit of the harness.

Diagnostics with Phenomenon

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
9 CHECK CONNECTOR. Turn the ignition switch to OFF.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Replace the PRG DU. <Ref. to PRG-9, Power Rear Gate Control Module.>

4. OPERATION BY THE PRG DRIVER'S SW IS NOT POSSIBLE

NOTE:

Before performing diagnosis, initialize PRG SYS by opening PRG in manual operation, and then operating the power rear gate auto closer from the half-shut state.

Step	Check	Yes	No
1 CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Is DTC stored in current malfunction?	Refer to each DTC diagnosis.	Go to step 2.
2 CHECK CURRENT DATA. Check «D SW» using the Subaru Select Monitor.	Does the display switch between OFF ↔ ON according to PRG driver's SW operation?	Go to step 4.	Go to step 3.
3 CHECK PRG DRIVER'S SW INPUT CIRCUIT. Refer to "CHECK PRG DRIVER'S SW INPUT CIRCUIT", and check the PRG driver's SW. <Ref. to PRG(diag)-69, CHECK PRG DRIVER'S SW INPUT CIRCUIT, INSPECTION, Diagnostics with Phenomenon.>	Is there any fault?	Repair according to "CHECK PRG DRIVER'S SW INPUT CIRCUIT".	Go to step 4.
4 CHECK POWER REAR GATE AUTO CLOSER. Refer to step 3 and subsequent procedures for DTC B2513, and check the power rear gate auto closer. <Ref. to PRG(diag)-39, DTC B2513 LATCH CONDITION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2513 diagnosis.	Go to step 5.
5 CHECK SOLENOID. Refer to step 4 and subsequent procedures for DTC B2523, and check the solenoid. <Ref. to PRG(diag)-52, DTC B2523 HALF STOP SOLENOID FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2523 diagnosis.	Go to step 6.
6 CHECK CLUTCH. Refer to step 4 and subsequent procedures for DTC B2509, and check the clutch. <Ref. to PRG(diag)-31, DTC B2509 CLUTCH OPEN, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2509 diagnosis.	Go to step 7.
7 CHECK PRG MOTOR OPEN CIRCUIT. Perform step 4 and subsequent procedures for DTC B2507, and check the PRG motor open circuit. <Ref. to PRG(diag)-27, DTC B2507 PRG MOTOR OPEN, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2507 diagnosis.	Go to step 8.
8 CHECK PRG MOTOR SHORT. Perform step 4 and subsequent procedures for DTC B2508, and check the PRG motor short. <Ref. to PRG(diag)-29, DTC B2508 PRG MOTOR GND SHORT OUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2508 diagnosis.	Go to step 9.



Diagnostics with Phenomenon

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
9 CHECK ROTATION SENSOR. Perform step 4 and subsequent procedures for DTC B250B, and check the rotation sensor. <Ref. to PRG(diag)-35, DTC B250B ROTATION SENSOR FAILURE (A OUTPUT FIXATION), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B250B diagnosis.	Go to step 10.
10 CHECK TOUCH SENSOR. Perform step 3 and subsequent procedures for DTC B250A, and check the touch sensor. <Ref. to PRG(diag)-33, DTC B250A TOUCH SENSORS BATT. GND SHORT OUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B250A diagnosis.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>



Diagnostics with Phenomenon

POWER REAR GATE SYSTEM (DIAGNOSTICS)

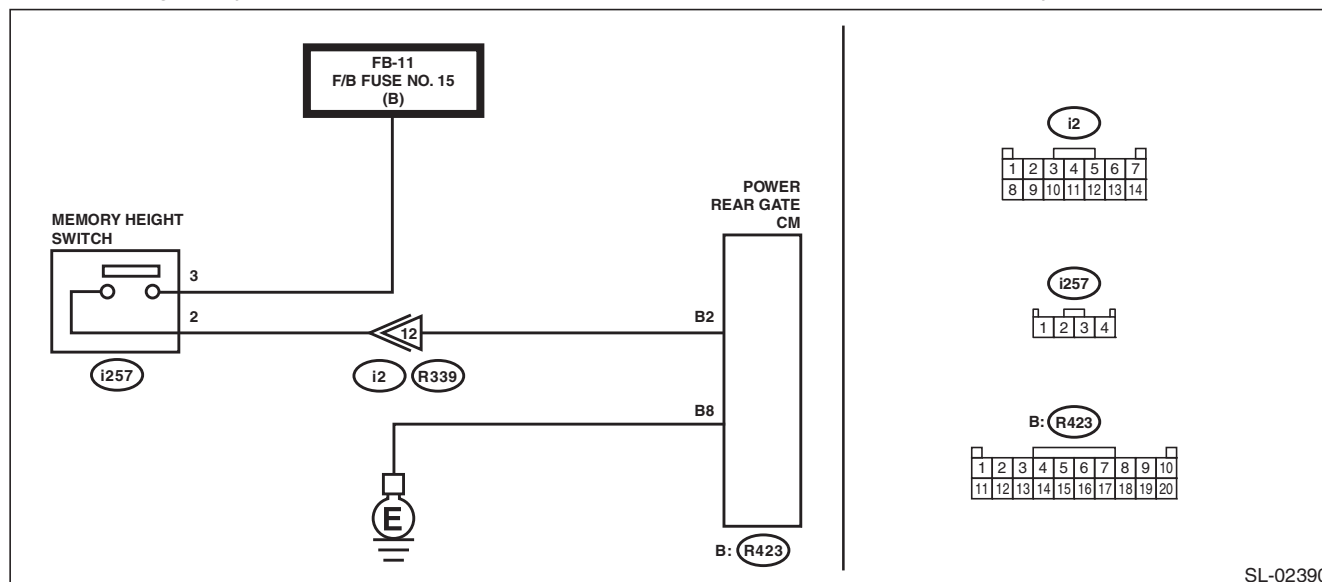
5. CHECK MEMORY HEIGHT SW INPUT CIRCUIT

NOTE:

Before performing diagnosis, initialize PRG SYS by opening PRG in manual operation, and then operating the power rear gate auto closer from the half-shut state.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



SL-02390

	Step	Check	Yes	No
1	CHECK BACK-UP FUSE. Using the Subaru Select Monitor, read DTC of PRG CM.	Is the fuse normal without brown-out?	Go to step 2.	Replace the fuse.
2	CHECK CURRENT DATA. Check «Memory stop SW» using the Subaru Select Monitor.	Does the display switch between OFF ←→ ON according to memory height SW operation?	Input circuit is normal.	Go to step 3.
3	CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the memory height SW connector. 3) Measure the resistance between PRG CM connector and memory height SW connector. Connector & terminal (R423) No. 2 — (i257) No. 2:	Is the resistance less than 10 Ω?	Go to step 4.	Repair or replace the open circuit of harness.
4	CHECK HARNESS. Measure the resistance between PRG CM connector and chassis ground. Connector & terminal (R423) No. 2 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 5.	Repair or replace the short circuit of the harness.
5	CHECK HARNESS. Measure the voltage between PRG CM connector and chassis ground. Connector & terminal (R423) No. 2 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 6.	Repair or replace the short circuit of the harness.
6	CHECK HARNESS. Measure the voltage between memory height SW connector and chassis ground. Connector & terminal (i257) No. 3 (+) — Chassis ground (-):	Is the voltage 10.5 V or more and less than 16 V?	Go to step 7.	Repair or replace the open circuit of harness.

Diagnostics with Phenomenon

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
7 CHECK HARNESS. Measure the resistance between PRG CM connector and chassis ground. <i>Connector & terminal</i> <i>(R423) No. 8 — Chassis ground:</i>	Is the resistance less than 10 Ω ?	Go to step 8.	Repair or replace the open circuit of harness.
8 CHECK MEMORY HEIGHT SW. Measure the resistance between switch terminals. <i>Connector & terminal</i> <i>(i257) No. 2 — (i257) No. 3:</i>	Is the resistance 1 M Ω or more at OFF, and less than 1 Ω at ON?	Go to step 9.	Replace the memory height SW. <Ref. to PRG-23, Memory Height Switch.>
9 CHECK CONNECTOR.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>



Diagnostics with Phenomenon

POWER REAR GATE SYSTEM (DIAGNOSTICS)

6. PRG INNER SW DOES NOT FUNCTION

NOTE:

Before performing diagnosis, initialize PRG SYS by opening PRG in manual operation, and then operating the power rear gate auto closer from the half-shut state.

Step	Check	Yes	No
1	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Is DTC stored in current malfunction?	Refer to the DTC diagnosis. Go to step 2.
2	CHECK CURRENT DATA. Check «R/G inner SW» using the Subaru Select Monitor.	Does the display switch between OFF ←→ ON according to PRG inner SW operation?	Go to step 4. Go to step 3.
3	CHECK PRG INNER SW INPUT CIRCUIT. Refer to "CHECK PRG INNER SW INPUT CIRCUIT", and check the PRG inner SW. <Ref. to PRG(diag)-70, CHECK PRG INNER SW INPUT CIRCUIT, INSPECTION, Diagnostics with Phenomenon.>	Is there any fault?	Repair according to "CHECK PRG INNER SW INPUT CIRCUIT". Go to step 4.
4	CHECK POWER REAR GATE AUTO CLOSER. Refer to step 3 and subsequent procedures for DTC B2513, and check the power rear gate auto closer. <Ref. to PRG(diag)-39, DTC B2513 LATCH CONDITION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2513 diagnosis. Go to step 5.
5	CHECK SOLENOID. Refer to step 4 and subsequent procedures for DTC B2523, and check the solenoid. <Ref. to PRG(diag)-52, DTC B2523 HALF STOP SOLENOID FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2523 diagnosis. Go to step 6.
6	CHECK CLUTCH. Refer to step 4 and subsequent procedures for DTC B2509, and check the clutch. <Ref. to PRG(diag)-31, DTC B2509 CLUTCH OPEN, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2509 diagnosis. Go to step 7.
7	CHECK PRG MOTOR OPEN CIRCUIT. Perform step 4 and subsequent procedures for DTC B2507, and check the PRG motor open circuit. <Ref. to PRG(diag)-27, DTC B2507 PRG MOTOR OPEN, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2507 diagnosis. Go to step 8.
8	CHECK PRG MOTOR SHORT. Perform step 4 and subsequent procedures for DTC B2508, and check the PRG motor short. <Ref. to PRG(diag)-29, DTC B2508 PRG MOTOR GND SHORT OUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2508 diagnosis. Go to step 9.
9	CHECK ROTATION SENSOR. Perform step 4 and subsequent procedures for DTC B250B, and check the rotation sensor. <Ref. to PRG(diag)-35, DTC B250B ROTATION SENSOR FAILURE (A OUTPUT FIXATION), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B250B diagnosis. Go to step 10.

Diagnostics with Phenomenon

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
10 CHECK TOUCH SENSOR. Perform step 3 and subsequent procedures for DTC B250A, and check the touch sensor. <Ref. to PRG(diag)-33, DTC B250A TOUCH SENSORS BATT. GND SHORT OUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B250A diagnosis.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

7. PRG POSITION CANNOT BE MEMORIZED

NOTE:

Before performing diagnosis, initialize PRG SYS by opening PRG in manual operation, and then operating the power rear gate auto closer from the half-shut state.

Step	Check	Yes	No
1 CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Is DTC stored in current malfunction?	Refer to the DTC diagnosis.	Go to step 2.
2 CHECK MEMORY HEIGHT SW.	Is the memory height SW ON?	Go to step 3.	Set the memory height SW to ON.
3 CHECK EACH SW. Perform inspections in "CHECK PRG INNER SW INPUT CIRCUIT", and "CHECK MEMORY HEIGHT SW INPUT CIRCUIT". <Ref. to PRG(diag)-70, CHECK PRG INNER SW INPUT CIRCUIT, INSPECTION, Diagnostics with Phenomenon.> <Ref. to PRG(diag)-62, CHECK MEMORY HEIGHT SW INPUT CIRCUIT, INSPECTION, Diagnostics with Phenomenon.>	Is there any fault?	Repair it according to each inspection.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

Diagnostics with Phenomenon

POWER REAR GATE SYSTEM (DIAGNOSTICS)

8. PRG OPENER BUTTON DOES NOT FUNCTION

NOTE:

Before performing diagnosis, initialize PRG SYS by opening PRG in manual operation, and then operating the power rear gate auto closer from the half-shut state.

Step	Check	Yes	No
1	CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Is DTC stored in current malfunction?	Refer to the DTC diagnosis. Go to step 2.
2	CHECK CURRENT DATA. Check «R/G Open SW» using the Subaru Select Monitor.	Does the display switch between "OFF" "tap" "press and hold" according to PRG opener button operation?	Go to step 4. Go to step 3.
3	CHECK BODY INTEGRATED UNIT. - For models with keyless access Perform step 6 and subsequent procedures in "CANNOT UNLOCK WITH THE REAR GATE OPENER BUTTON" in KPS (DIAGNOSTICS). <Ref. to KPS(diag)-103, REAR GATE CANNOT BE UNLOCKED WITH THE REAR GATE OPENER BUTTON, INSPECTION, Diagnostics with Phenomenon.> - For models without keyless access Perform "CHECK REAR GATE OPENER BUTTON CIRCUIT" in Door Lock Control System. <Ref. to SL-13, CHECK REAR GATE OPENER BUTTON CIRCUIT, INSPECTION, Door Lock Control System.>	Is there any fault?	Repair it according to each inspection. Go to step 4.
4	CHECK POWER REAR GATE AUTO CLOSER. Refer to step 3 and subsequent procedures for DTC B2513, and check the power rear gate auto closer. <Ref. to PRG(diag)-39, DTC B2513 LATCH CONDITION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2513 diagnosis. Go to step 5.
5	CHECK SOLENOID. Refer to step 4 and subsequent procedures for DTC B2523, and check the solenoid. <Ref. to PRG(diag)-52, DTC B2523 HALF STOP SOLENOID FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2523 diagnosis. Go to step 6.
6	CHECK CLUTCH. Refer to step 4 and subsequent procedures for DTC B2509, and check the clutch. <Ref. to PRG(diag)-31, DTC B2509 CLUTCH OPEN, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2509 diagnosis. Go to step 7.
7	CHECK PRG MOTOR OPEN CIRCUIT. Perform step 4 and subsequent procedures for DTC B2507, and check the PRG motor open circuit. <Ref. to PRG(diag)-27, DTC B2507 PRG MOTOR OPEN, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2507 diagnosis. Go to step 8.
8	CHECK PRG MOTOR SHORT. Perform step 4 and subsequent procedures for DTC B2508, and check the PRG motor short. <Ref. to PRG(diag)-29, DTC B2508 PRG MOTOR GND SHORT OUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2508 diagnosis. Go to step 9.

Diagnostics with Phenomenon

POWER REAR GATE SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
9 CHECK ROTATION SENSOR. Perform step 4 and subsequent procedures for DTC B250B, and check the rotation sensor. <Ref. to PRG(diag)-35, DTC B250B ROTATION SENSOR FAILURE (A OUTPUT FIXATION), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B250B diagnosis.	Go to step 10.
10 CHECK TOUCH SENSOR. Perform step 3 and subsequent procedures for DTC B250A, and check the touch sensor. <Ref. to PRG(diag)-33, DTC B250A TOUCH SENSORS BATT. GND SHORT OUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B250A diagnosis.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

9. OPERATION FROM KEYLESS/KEYLESS ACCESS MOBILE KEY IS NOT POSSIBLE

NOTE:

Before performing diagnosis, initialize PRG SYS by opening PRG in manual operation, and then operating the power rear gate auto closer from the half-shut state.

Step	Check	Yes	No
1 CHECK DTC. Using the Subaru Select Monitor, read DTC of PRG CM.	Is DTC stored in current malfunction?	Refer to the DTC diagnosis.	Go to step 2.
2 CHECK CURRENT DATA. Check «Normal Keyless R/G SW» or «Smart Keyless R/G SW» using the Subaru Select Monitor.	Does the display switch between "OFF" "tap" "press and hold" according to mobile key SW operation?	Go to step 4.	Go to step 3.
3 CHECK BODY INTEGRATED UNIT. - For models with keyless access Perform "KEYLESS ACCESS LOCK/UNLOCK CANNOT BE PERFORMED FROM ANY OF THE DOORS" in KPS (DIAGNOSTICS). <Ref. to KPS(diag)-90, KEYLESS ACCESS LOCK/UNLOCK CANNOT BE PERFORMED FROM ANY OF THE DOORS, INSPECTION, Diagnostics with Phenomenon.> - For models without keyless access Perform "NONE OF THE FUNCTIONS OF THE KEYLESS ENTRY SYSTEM OPERATE" in Door Lock Control System. <Ref. to SL-18, SYMPTOM CHART, INSPECTION, Keyless Entry System.>	Is there any fault?	Repair it according to each inspection.	Go to step 4.
4 CHECK POWER REAR GATE AUTO CLOSER. Refer to step 3 and subsequent procedures for DTC B2513, and check the power rear gate auto closer. <Ref. to PRG(diag)-39, DTC B2513 LATCH CONDITION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2513 diagnosis.	Go to step 5.
5 CHECK SOLENOID. Refer to step 4 and subsequent procedures for DTC B2523, and check the solenoid. <Ref. to PRG(diag)-52, DTC B2523 HALF STOP SOLENOID FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2523 diagnosis.	Go to step 6.

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Step	Check	Yes	No
6 CHECK CLUTCH. Refer to step 4 and subsequent procedures for DTC B2509, and check the clutch. <Ref. to PRG(diag)-31, DTC B2509 CLUTCH OPEN, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2509 diagnosis.	Go to step 7.
7 CHECK PRG MOTOR OPEN CIRCUIT. Perform step 4 and subsequent procedures for DTC B2507, and check the PRG motor open circuit. <Ref. to PRG(diag)-27, DTC B2507 PRG MOTOR OPEN, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2507 diagnosis.	Go to step 8.
8 CHECK PRG MOTOR SHORT. Perform step 4 and subsequent procedures for DTC B2508, and check the PRG motor short. <Ref. to PRG(diag)-29, DTC B2508 PRG MOTOR GND SHORT OUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B2508 diagnosis.	Go to step 9.
9 CHECK ROTATION SENSOR. Perform step 4 and subsequent procedures for DTC B250B, and check the rotation sensor. <Ref. to PRG(diag)-35, DTC B250B ROTATION SENSOR FAILURE (A OUTPUT FIXATION), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B250B diagnosis.	Go to step 10.
10 CHECK TOUCH SENSOR. Perform step 3 and subsequent procedures for DTC B250A, and check the touch sensor. <Ref. to PRG(diag)-33, DTC B250A TOUCH SENSORS BATT. GND SHORT OUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any fault?	Repair it according to B250A diagnosis.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

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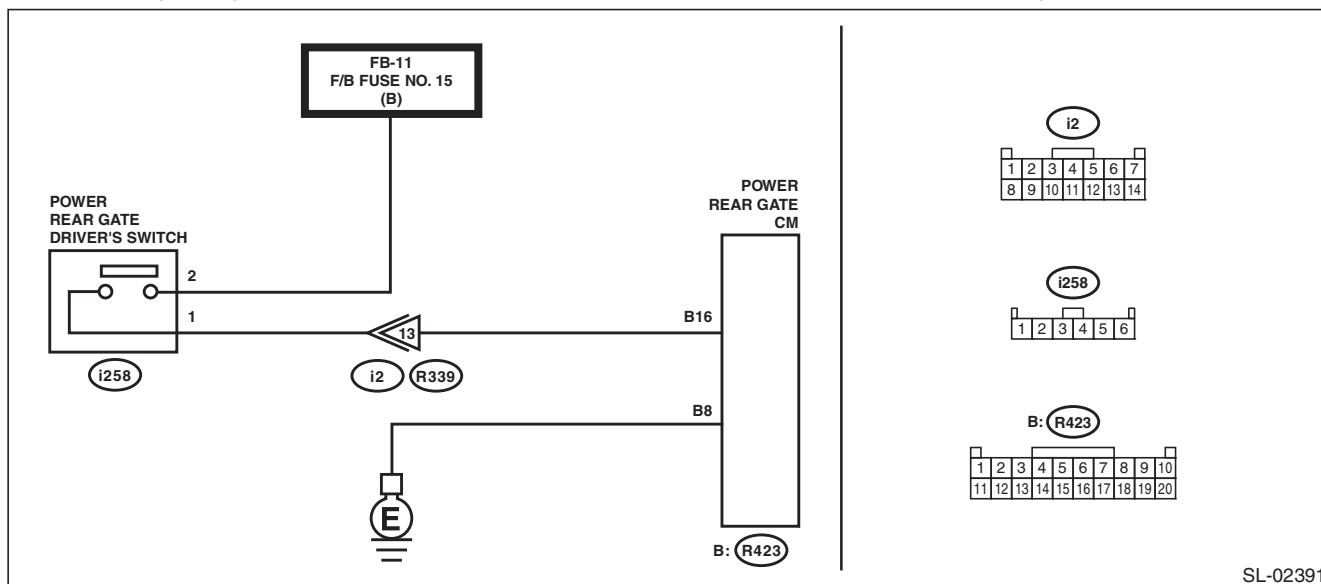
10.CHECK PRG DRIVER'S SW INPUT CIRCUIT

NOTE:

Before performing diagnosis, initialize PRG SYS by opening PRG in manual operation, and then operating the power rear gate auto closer from the half-shut state.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



	Step	Check	Yes	No
1	CHECK BACK-UP FUSE. Using the Subaru Select Monitor, read DTC of PRG CM.	Is the fuse normal without brown-out?	Go to step 2.	Replace the fuse.
2	CHECK CURRENT DATA. Check «D SW» using the Subaru Select Monitor.	Does the display switch between OFF ↔ ON according to PRG driver's SW operation?	Input circuit is normal.	Go to step 3.
3	CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the memory height SW connector. 3) Measure the resistance between PRG CM connector and PRG driver's SW connector. Connector & terminal (R423) No. 16 — (i258) No. 1:	Is the resistance less than 10 Ω?	Go to step 4.	Repair or replace the open circuit of harness.
4	CHECK HARNESS. Measure the resistance between PRG CM connector and chassis ground. Connector & terminal (R423) No. 16 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 5.	Repair or replace the short circuit of the harness.
5	CHECK HARNESS. Measure the voltage between PRG CM connector and chassis ground. Connector & terminal (R423) No. 16 (+) — Chassis ground (–):	Is the voltage less than 1 V?	Go to step 6.	Repair or replace the short circuit of the harness.
6	CHECK HARNESS. Measure the voltage between PRG driver's SW connector and chassis ground. Connector & terminal (i258) No. 2 (+) — Chassis ground (–):	Is the voltage 10.5 V or more and less than 16 V?	Go to step 7.	Repair or replace the open circuit of harness.

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	Step	Check	Yes	No
7	CHECK HARNESS. Measure the resistance between PRG CM connector and chassis ground. Connector & terminal (R423) No. 8 — Chassis ground:	Is the resistance less than 10 Ω?	Go to step 8.	Repair or replace the open circuit of harness.
8	CHECK MEMORY HEIGHT SW. Measure the resistance between switch terminals. Connector & terminal (i258) No. 1 — (i258) No. 2:	Is the resistance 1 MΩ or more at OFF, and less than 1 Ω at ON?	Go to step 9.	Replace the memory height SW. <Ref. to PRG-23, Memory Height Switch.>
9	CHECK CONNECTOR.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

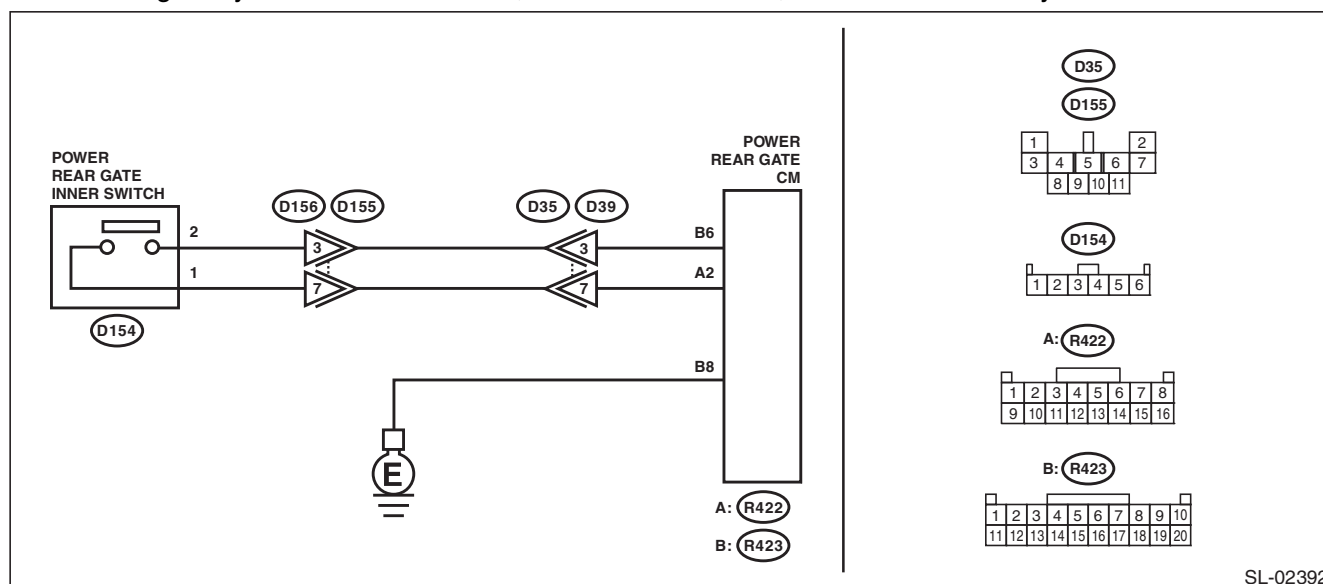
11.CHECK PRG INNER SW INPUT CIRCUIT

NOTE:

Before performing diagnosis, initialize PRG SYS by opening PRG in manual operation, and then operating the power rear gate auto closer from the half-shut state.

WIRING DIAGRAM:

Power rear gate system <Ref. to WI-314, WIRING DIAGRAM, Power Rear Gate System.>



SL-02392

	Step	Check	Yes	No
1	CHECK CURRENT DATA. Check «R/G inner SW» using the Subaru Select Monitor.	Does the display switch between OFF ↔ ON according to PRG inner SW operation?	Input circuit is normal.	Go to step 2.
2	CHECK HARNESS. 1) Disconnect the PRG CM connector. 2) Disconnect the PRG inner SW connector. 3) Measure the resistance between PRG CM connector and PRG inner SW connector. Connector & terminal (R422) No. 2 — (D154) No. 1: (R423) No. 6 — (D154) No. 2:	Is the resistance less than 10 Ω?	Go to step 3.	Repair or replace the open circuit of harness.

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Step	Check	Yes	No
3 CHECK HARNESS. Measure the resistance between PRG CM connector and chassis ground. <i>Connector & terminal</i> <i>(R422) No. 2 — Chassis ground:</i>	Is the resistance 1 M Ω or more?	Go to step 4.	Repair or replace the short circuit of the harness.
4 CHECK HARNESS. Measure the voltage between PRG CM connector and chassis ground. <i>Connector & terminal</i> <i>(R423) No. 6 (+) — Chassis ground (-):</i>	Is the voltage less than 1 V?	Go to step 5.	Repair or replace the short circuit of the harness.
5 CHECK HARNESS. Measure the resistance between PRG CM connector and chassis ground. <i>Connector & terminal</i> <i>(R423) No. 8 — Chassis ground:</i>	Is the resistance less than 10 Ω ?	Go to step 6.	Repair or replace the short circuit of the harness.
6 CHECK HARNESS. Measure the voltage between PRG CM connector and chassis ground. <i>Connector & terminal</i> <i>(R422) No. 2 (+) — Chassis ground (-):</i>	Is the voltage 10.5 V or more and less than 16 V?	Go to step 7.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>
7 CHECK SW. Measure the resistance between switch terminals. <i>Connector & terminal</i> <i>(D154) No. 1 — (D154) No. 2:</i>	Is the resistance 1 M Ω or more at OFF, and less than 1 Ω at ON?	Go to step 8.	Replace the PRG inner SW. <Ref. to PRG-21, Power Rear Gate Inner Switch.>
8 CHECK CONNECTOR.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Replace the PRG CM. <Ref. to PRG-9, Power Rear Gate Control Module.>

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POWER REAR GATE SYSTEM (DIAGNOSTICS)
