

Security System

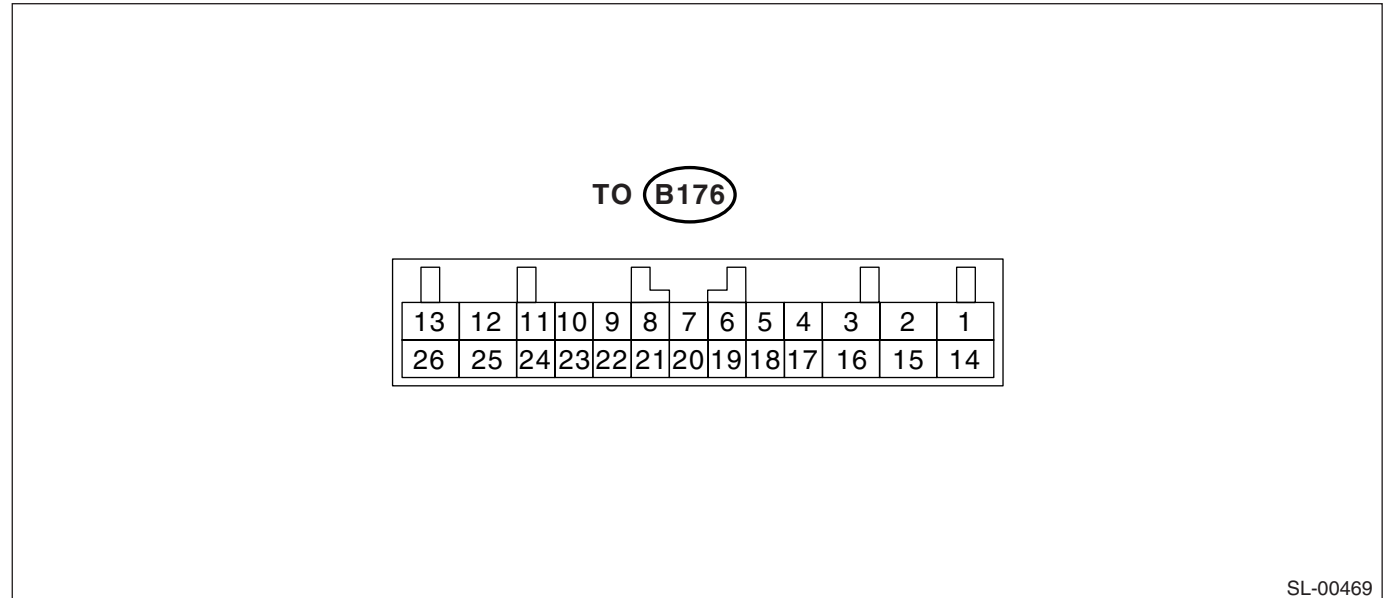
SECURITY AND LOCKS

4. Security System

A: WIRING DIAGRAM

<Ref. to WI-164, WIRING DIAGRAM, Security System.>

B: ELECTRICAL SPECIFICATION



Description	Terminal No.	Measuring condition
Turn signal light LH	1 (OUTPUT)	Battery voltage is present when the alarm operation is activated.
Power supply (Backup)	2	Battery voltage is constantly present.
Door switch	6 (INPUT)	0 V is present when opening one of the doors or rear gates.
Impact sensor	8	When not applying vibration to the impact sensor, it repeats displaying the 0 V and battery voltage every 45 milliseconds.
Ignition switch (ON)	10 (INPUT)	Battery voltage is present when ignition switch is turned to ON.
Horn relay	24 (OUTPUT)	0 V is present when the alarm operation is activated.
Interrupt relay	12 (OUTPUT)	Battery voltage is present when the alarm operation is activated.
Turn signal light RH	13 (OUTPUT)	Battery voltage is present when the alarm operation is activated.
Ground	14	0 V is constantly present.
Security indicator light	15 (OUTPUT)	0 V is present when the alarm operation is activated.
Power supply for turn signal light (Backup)	26	Battery voltage is constantly present.

C: INSPECTION

1. BASIC DIAGNOSTIC PROCEDURE

NOTE:

- Turbo model is the model with immobilizer.
- Non-turbo model is the model without immobilizer.

Step	Check	Yes	No
1 SECURITY SYSTEM SETTING Turn the setting of security system ON. <Ref. to SL-24, SECURITY SYSTEM ON/OFF SETTING, INSPECTION, Security System.>	Is setting completed correctly?	Go to step 2.	<ul style="list-style-type: none"> • Check the ignition switch circuit. <Ref. to SL-28, CHECK IGNITION SWITCH CIRCUIT, INSPECTION, Security System.> • Check the door lock switch circuit. <Ref. to SL-9, CHECK DOOR LOCK SWITCH AND CIRCUIT, INSPECTION, Door Lock Control System.>
2 CHECK SECURITY SYSTEM SETTING OPERATION. 1) Before starting this diagnosis, open all doors. 2) Remove the key from ignition key cylinder, then close all doors and rear gate. 3) Press the LOCK/ARM button of keyless transmitter, and wait for 30 seconds.	Can the security system be set?	Go to step 3.	Go to symptom 1. <Ref. to SL-25, SYMPTOM CHART, INSPECTION, Security System.>
3 CHECK SECURITY INDICATOR LIGHT AND HAZARD LIGHT BLINKING. Check the security indicator light and hazard light blinking. NOTE: The blinking pattern of security indicator light is twice within 1 second in 1 second cycle.	Does the security indicator light and the hazard light blink?	Go to step 4.	Go to symptom 2. <Ref. to SL-25, SYMPTOM CHART, INSPECTION, Security System.>
4 CHECK SECURITY ALARM OPERATION. 1) Unlock all doors using the door lock switch on front door. 2) Open any door or rear gate.	Does the security alarm operate when opening any door or rear gate?	Go to step 5.	Go to symptom 3. <Ref. to SL-25, SYMPTOM CHART, INSPECTION, Security System.>
5 CHECK SECURITY ALARM OPERATION. Check the security alarm operation.	Do all security alarm (horn, hazard light and security indicator light) operate? And is the starter motor deactivated?	Go to step 6.	Go to symptom 4. <Ref. to SL-25, SYMPTOM CHART, INSPECTION, Security System.>
6 CHECK SECURITY ALARM CANCEL OPERATION. Press the UNLOCK/DISARM button of the keyless transmitter. NOTE: Model with immobilizer blinks once, model without immobilizer is remain off.	Do all security alarm (horn and hazard light) stop? And is the starter motor activated?	Go to step 7.	Go to symptom 5. <Ref. to SL-25, SYMPTOM CHART, INSPECTION, Security System.>

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Step	Check	Yes	No
7 CHECK BATTERY DISCONNECT PROTECTION. Check that the system functions properly when the battery is disconnected temporarily. <Ref. to SL-24, CHECK BATTERY DISCONNECT PROTECTION, INSPECTION, Security System.>	Does the system function properly when the battery is disconnected temporarily?	Go to step 8.	Replace the keyless control module.
8 CHECK IMPACT SENSOR. Check the sensitivity of impact sensor. <Ref. to SL-47, CHECK IMPACT SENSOR, ADJUSTMENT, Impact Sensor.> NOTE: Perform this procedure only to the vehicle with an impact sensor (dealer OP).	Is the sensitivity set properly?	Press the UNLOCK/DISARM button of keyless transmitter, and finish the diagnosis.	Adjust the sensitivity properly. <Ref. to SL-47, IMPACT SENSITIVITY ADJUSTMENT, ADJUSTMENT, Impact Sensor.>

2. CHECK BATTERY DISCONNECT PROTECTION

- 1) Remove the key from the ignition switch.
 - 2) Close all the doors and rear gate.
 - 3) Open the front hood.
 - 4) Press the keyless transmitter LOCK/ARM button, and wait until the security indicator light blinks twice within 1 second in 1 second cycle.
 - 5) Disconnect the ground cable from battery.
 - 6) Connect the ground cable to battery.
 - 7) Check that the security indicator light blinks twice within 1 second in 1 second cycle after connecting the battery ground cable.
- If NG, replace the keyless entry control module.

3. SECURITY SYSTEM ON/OFF SETTING

NOTE:

When steps 1) to 4) are performed with the security system setting ON, the security system setting is switched to OFF.

- 1) Close all doors and the rear gate, then sit down on the driver seat. Press the UNLOCK button of the keyless transmitter.
- 2) Turn the ignition switch to ON.
- 3) While turning the center door lock switch to UNLOCK, open the driver's door, and keep this condition for 10 seconds.
- 4) Switch the security system setting (ON⇔OFF), then the horn sounds.

Setting	Notification
OFF → ON	Horn sounds once.
ON → OFF	Horn sounds twice.

NOTE:

See the following for security system ON/OFF setting with the select monitor. <Ref. to SL-45, PROCEDURE, Security Control Unit.>

4. SYMPTOM CHART

Symptom		Repair order	Reference
1	The security system cannot be set.	1. Check the keyless transmitter function.	<Ref. to SL-14, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
		2. Check the fuse.	<Ref. to SL-25, CHECK FUSE, INSPECTION, Security System.>
		3. Check the keyless entry control module power supply and ground circuit.	<Ref. to SL-26, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Security System.>
		4. Check the door switch.	<Ref. to SL-26, CHECK DOOR SWITCH, INSPECTION, Security System.>
		5. Replace the keyless entry control module.	<Ref. to SL-44, Security Control Unit.>
2	Security system can be set, but the security indicator light or hazard light does not blink.	Security indicator light	<Ref. to SL-27, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Security System.>
		Hazard light	<Ref. to SL-28, CHECK HAZARD LIGHT OPERATION, INSPECTION, Security System.>
3	Security system does not trigger when one of the doors is opened.	Check the door switch.	<Ref. to SL-26, CHECK DOOR SWITCH, INSPECTION, Security System.>
4	Security alarm does not activate.	All functions	Check the door switch.
		Security indicator light	<Ref. to SL-26, CHECK DOOR SWITCH, INSPECTION, Security System.>
		Horn	<Ref. to SL-27, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Security System.>
		Hazard light	<Ref. to SL-27, CHECK THE HORN, INSPECTION, Security System.>
		Starter motor does not run.	<Ref. to SL-28, CHECK HAZARD LIGHT OPERATION, INSPECTION, Security System.>
5	The security system cannot be cancelled.	Check the interrupt relay circuit.	<Ref. to SL-28, CHECK INTERRUPT RELAY CIRCUIT, INSPECTION, Security System.>
		Keyless transmitter	<Ref. to SL-14, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
		Ignition switch	<Ref. to SL-28, CHECK IGNITION SWITCH CIRCUIT, INSPECTION, Security System.>

5. CHECK FUSE

Step	Check	Yes	No
1 CHECK FUSE. Remove and visually check the fuses No. 2, No. 6 (in the main fuse box) and No. 3 (in the fuse & relay box).	Is the fuse blown out?	Replace the fuse with a new one.	Check the power supply and ground circuit. <Ref. to SL-26, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Security System.>

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6. CHECK POWER SUPPLY AND GROUND CIRCUIT

Step	Check	Yes	No
1 CHECK POWER SUPPLY. 1) Disconnect the keyless entry control module harness connector. 2) Measure the voltage between harness connector terminal and chassis ground. Connector & terminal (B176) No. 2, 26 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Check the harness for open circuits or shorts between the keyless entry control module and the fuse.
2 CHECK GROUND CIRCUIT. Measure the resistance between harness connector terminal and chassis ground. Connector & terminal (B176) No. 14 — Chassis ground:	Is the resistance less than 10 Ω ?	The power supply and ground circuit are OK.	Repair the harness.

7. CHECK DOOR SWITCH

Step	Check	Yes	No
1 CHECK DOOR SWITCH CIRCUIT. Measure the voltage between the keyless entry control module harness connector terminal and the body ground. Connector & terminal Front and rear door: (B176) No. 6 (+) — Chassis ground (-): Rear gate: (B176) No. 7 (+) — Chassis ground (-):	Is the voltage 0 V when each door or rear gate is opened?	Go to step 2.	Go to step 3.
2 CHECK DOOR SWITCH CIRCUIT. Measure the voltage between the keyless entry control module harness connector terminal and the body ground. Connector & terminal Front and rear door: (B176) No. 6 (+) — Chassis ground (-): Rear gate: (B176) No. 7 (+) — Chassis ground (-):	Is the voltage more than 10 V when each door or rear gate is closed?	The door switch is OK.	Go to step 3.
3 CHECK DOOR SWITCH. 1) Disconnect the door switch harness connector. 2) Measure the resistance between door switch terminals. Terminals Door switch No. 1 — No. 3: Rear gate latch switch No. 1 — No. 2:	Is the resistance more than 1 M Ω when door switch is pushed?	Go to step 4.	Replace the door switch.
4 CHECK DOOR SWITCH. Measure the resistance between door switch terminals. Terminals Door switch No. 1 — No. 3: Rear gate latch switch No. 1 — No. 2:	Is the resistance less than 1 Ω when door switch is released?	Check the harness for open circuits or shorts between the keyless entry control module and the door switch.	Replace the door switch.

8. CHECK SECURITY INDICATOR LIGHT CIRCUIT

Step	Check	Yes	No
1 CHECK SECURITY INDICATOR LIGHT. 1) Disconnect the keyless entry control module harness connector. 2) Connect the harness connector terminal to ground using a suitable lead wire. Connector & terminal (B176) No. 15 — Chassis ground:	Does the security indicator light illuminate?	Replace the keyless entry control module.	Go to step 2.
2 CHECK POWER SUPPLY FOR SECURITY INDICATOR LIGHT. 1) Disconnect the connector from combination meter. 2) Measure the voltage between the keyless buzzer harness connector terminal and the body ground. Connector & terminal (i10) No. 8 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 3.	Check the harness for open or short circuits between combination meter and fuse.
3 CHECK SECURITY INDICATOR LIGHT CIRCUIT. Measure the resistance between the combination meter harness connector terminal and keyless entry control module harness connector terminal. Connector & terminal (i12) No. 4 — (B176) No. 15:	Is the resistance less than 10 Ω ?	Replace the combination meter.	Check the harness for open or short circuits between combination meter and keyless entry control module.

9. CHECK THE HORN

Step	Check	Yes	No
1 CHECK HORN OPERATION. Make sure the horn sounds when the horn switch is pushed.	Does the horn sound?	Go to step 2.	Check the horn circuit.
2 CHECK HORN OPERATION. 1) Disconnect the keyless entry control module harness connector. 2) Connect the harness connector terminal to ground using a suitable lead wire. Connector & terminal (B176) No. 24 (+) — Chassis ground:	Does the horn sound?	Replace the keyless entry control module.	Check the harness for open circuits or shorts between the keyless entry control module and the horn relay.

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10.CHECK HAZARD LIGHT OPERATION

Step	Check	Yes	No
1 CHECK HAZARD LIGHT OPERATION. Make sure the hazard light blinks when hazard switch is turned to ON.	Does the hazard light blink?	Go to step 2.	Check the hazard light circuit.
2 CHECK KEYLESS ENTRY CONTROL MODULE OUTPUT SIGNAL. 1) Remove the key from the ignition switch. 2) Open the driver's window, then close all doors and the rear gate. 3) Lock all doors with the keyless transmitter or door lock switch to activate the security system. 4) Unlock all doors using the door lock switch. 5) Measure the voltage between the keyless entry control module harness connector terminal and the body ground when any door is open. Connector & terminal (B176) No. 1, 13 — Chassis ground:	Is the voltage 1 — 4 V?	Check the harness for open circuits or shorts between the keyless entry control module and the turn signal light.	Replace the keyless entry control module.

11.CHECK INTERRUPT RELAY CIRCUIT

Step	Check	Yes	No
1 CHECK INTERRUPT RELAY. Remove and check interrupt relay. <Ref. to SL-48, Interrupt Relay.>	Is the interrupt relay normal?	Go to step 2.	Replace the interrupt relay.
2 CHECK INTERRUPT RELAY POWER SUPPLY. Measure the voltage between interrupt relay harness connector terminal and chassis ground. Connector & terminal (B59) No. 1 (+) — Chassis ground (-):	Is the voltage more than 10 V when ignition switch is turned to START?	Go to step 3.	Check the harness for open circuits or shorts between the interrupt relay and the ignition switch.
3 CHECK THE HARNESS BETWEEN INTERRUPT RELAY AND KEYLESS ENTRY CONTROL MODULE. 1) Turn the ignition switch to OFF. 2) Disconnect the keyless entry control module harness connector. 3) Measure the resistance of the harness between interrupt relay harness connector terminal and keyless entry control module harness connector. Connector & terminal (B59) No. 3 — (B176) No. 12:	Is the resistance less than 10 Ω ?	Replace the keyless entry control module.	Check the harness for open or short circuits between interrupt relay and keyless entry control module.

12.CHECK IGNITION SWITCH CIRCUIT

Step	Check	Yes	No
1 CHECK IGNITION SWITCH SIGNAL. 1) Disconnect the keyless entry control module harness connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between harness connector terminal and chassis ground. Connector & terminal (B176) No. 10 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Ignition switch is normal.	Check the harness for open circuits or shorts between the keyless entry control module and the ignition switch.