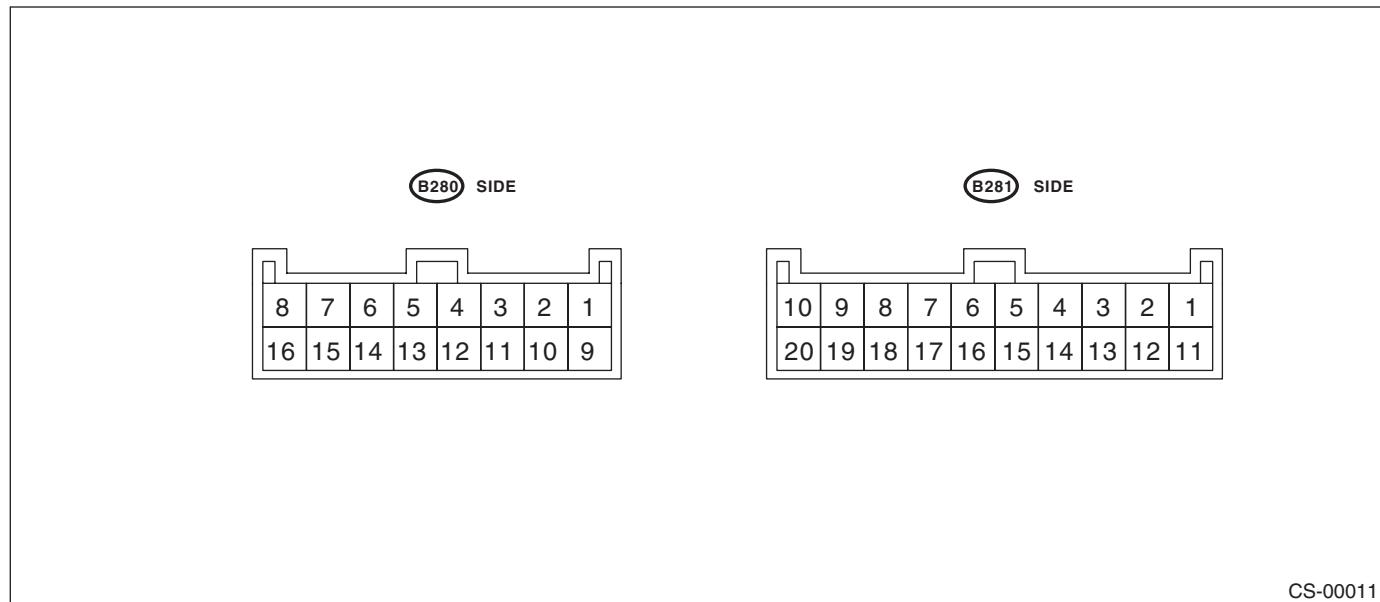


AT Shift Lock Control System

CONTROL SYSTEMS

3. AT Shift Lock Control System

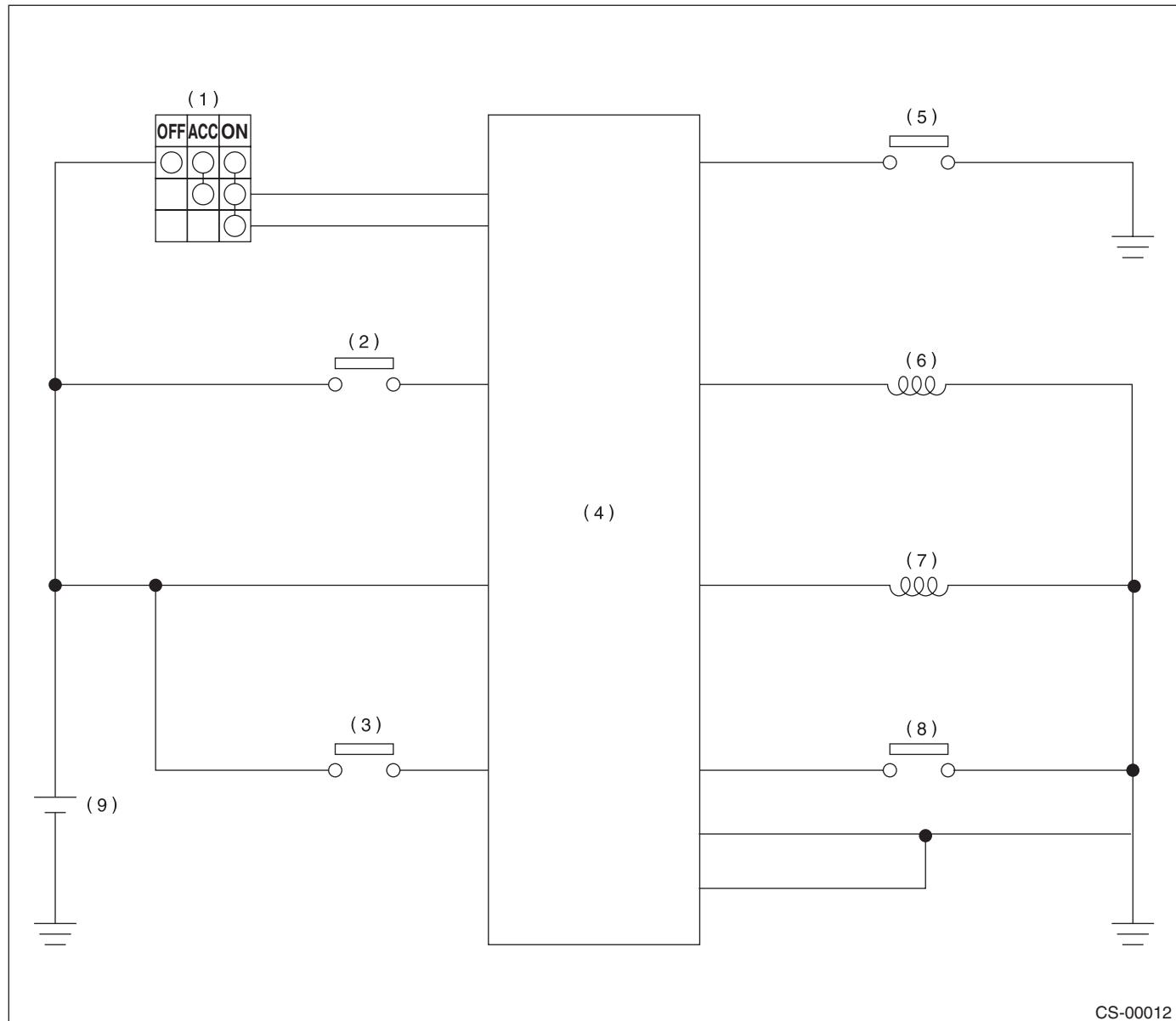
A: ELECTRICAL SPECIFICATION



CS-00011

Contents	Connector No.	Terminal No.	Input/Output signal
			Measured value and measuring conditions
Battery power supply	B280	2	9 — 16 V
Ignition power supply	B281	19	10 — 15 V when ignition switch is at ON or START.
Ignition power supply	B281	10	10 — 15 V when ignition switch is at ACC or ON.
Inhibitor switch ("P" range)	B281	5	0 V when select lever is in "P" range. 9 — 16 V when select lever is in other ranges than "P" range.
Stop light switch	B281	9	9 — 16 V when stop light switch is ON. 0 V when stop light switch is OFF.
"P" range switch	B281	6	0 V when select lever is in "P" range. 9 — 16 V when select lever is in other ranges than "P" range.
Shift lock solenoid signal	B280	9	8.5 — 16 V when shift lock is released. 0 V when shift lock is operating.
Key warning switch signal	B281	20	9 — 16 V when key is inserted. 0 V when key is removed.
Key lock solenoid signal	B280	3	Pulse is output when switching key lock between locked and unlocked. 0 V at other conditions than above.
Ground	B280	4	—
Ground	B280	13	—

B: WIRING DIAGRAM



- (1) Ignition switch
- (2) Stop light switch
- (3) Key warning switch

- (4) Body integrated unit
- (5) Inhibitor switch
- (6) Key lock solenoid

- (7) Shift lock solenoid
- (8) "P" range switch
- (9) Battery

AT Shift Lock Control System

CONTROL SYSTEMS

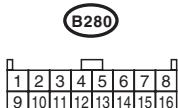
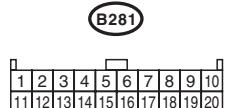
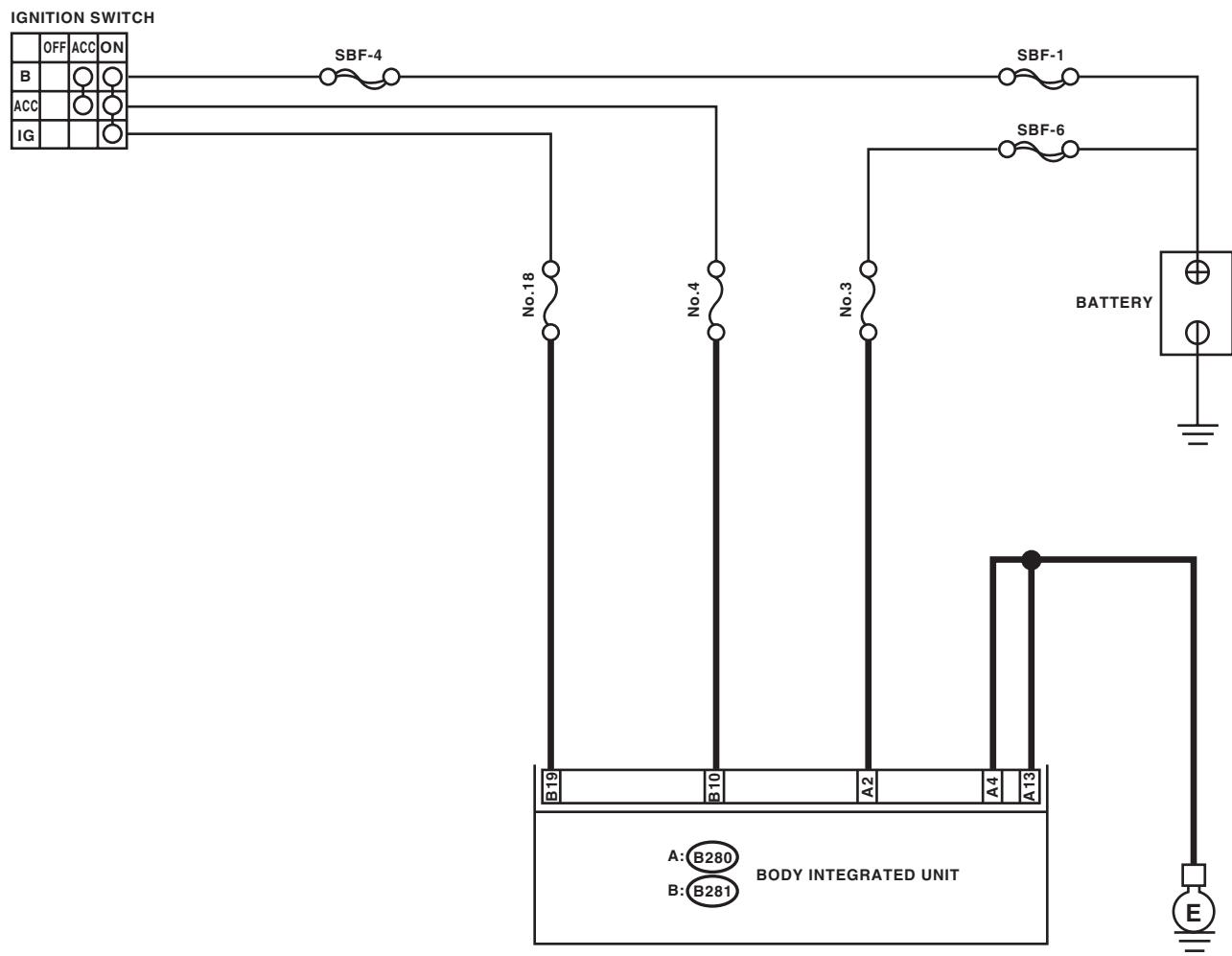
C: INSPECTION

1. SHIFT LOCK OPERATION

Step	Check	Yes	No
1 CHECK SHIFT LOCK. 1) Turn the ignition switch to ON. 2) Move the select lever to "P" range.	While brake pedal is not depressed, can the select lever move from "P" range to other ranges?	Inspect "SELECT LEVER CANNOT BE SHIFT LOCKED". <Ref. to CS-15, SELECT LEVER CANNOT BE SHIFT LOCKED, INSPECTION, AT Shift Lock Control System.>	Go to step 2.
2 CHECK SHIFT LOCK.	While brake pedal is depressed, can select lever move from "P" range to other ranges?	Go to step 3.	Inspect "SELECT LEVER CANNOT BE SHIFTED". <Ref. to CS-13, SELECT LEVER CANNOT BE SHIFTED, INSPECTION, AT Shift Lock Control System.>
3 CHECK KEY INTERLOCK.	Is the ignition switch turned to the "LOCK" position when the select lever is set to other than "P" range?	Inspect "KEY INTERLOCK DOES NOT BE LOCK OR UNLOCK". <Ref. to CS-18, KEY INTERLOCK DOES NOT LOCK OR RELEASE, INSPECTION, AT Shift Lock Control System.>	Go to step 4.
4 CHECK KEY INTERLOCK.	Is the ignition switch turned to the "LOCK" position when the select lever is set to the "P" range?	AT shift lock control system is normal.	Inspect "KEY INTERLOCK DOES NOT BE LOCK OR UNLOCK". <Ref. to CS-18, KEY INTERLOCK DOES NOT LOCK OR RELEASE, INSPECTION, AT Shift Lock Control System.>

2. BODY INTEGRATED UNIT POWER SUPPLY AND GROUND CIRCUIT

WIRING DIAGRAM:



CS-00013

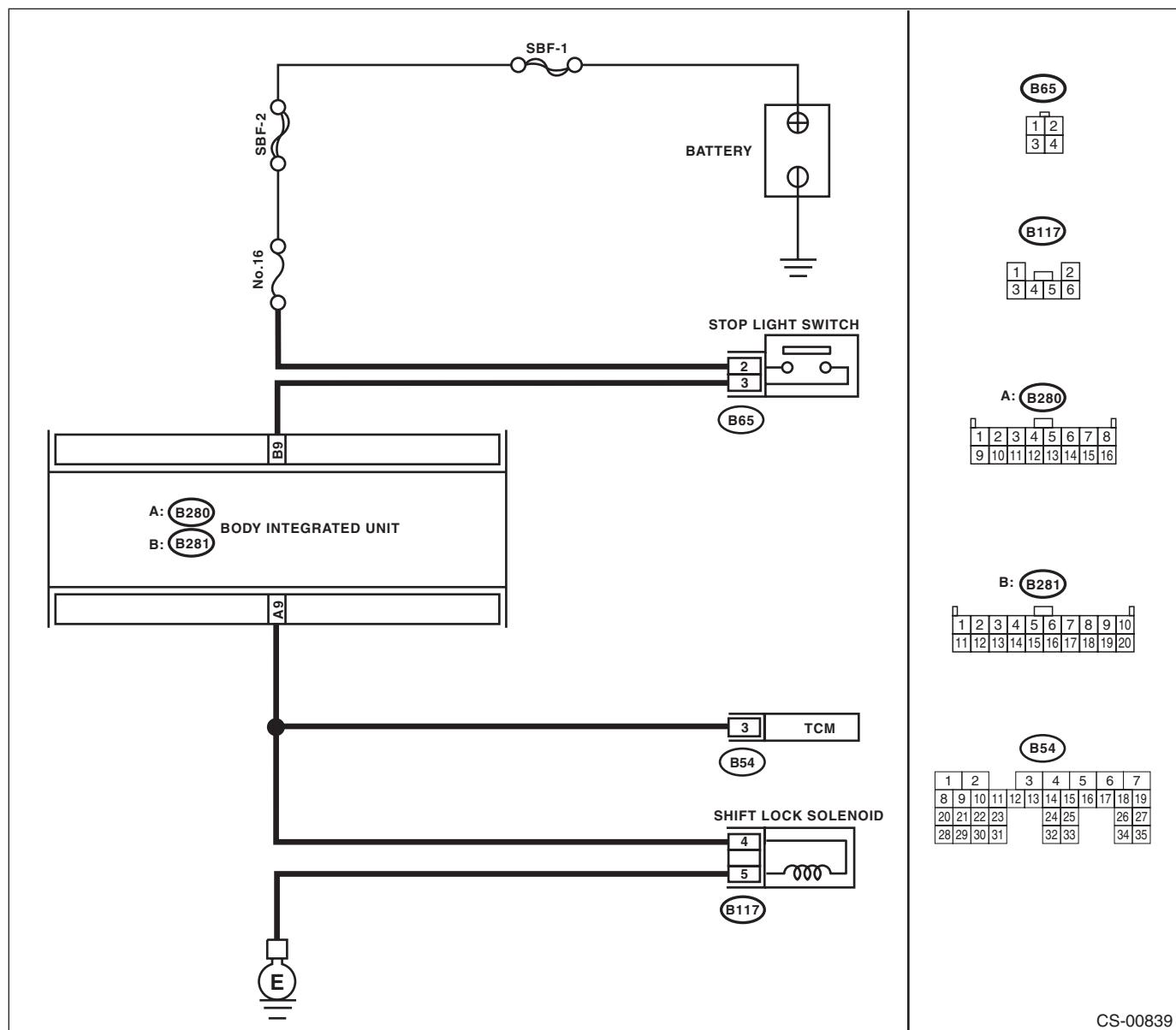
AT Shift Lock Control System

CONTROL SYSTEMS

Step	Check	Yes	No
1 CHECK FUSE. Remove the fuses No. 3, 4 and 18.	Are the fuses No. 3, 4 and 18 blown?	Replace the fuses No. 3, 4 and 18. If the replaced fuse No. 3, 4 or 18 blows easily, repair the short circuit of harness between the fuse and body integrated unit.	Go to step 2.
2 CHECK HARNESS CONNECTOR BETWEEN BODY INTEGRATED UNIT AND CHASSIS GROUND. 1) Turn the ignition switch to OFF. 2) Measure the harness resistance between the body integrated unit and chassis ground. <i>Connector & terminal</i> <i>(B280) No. 4 — Chassis ground:</i> <i>(B280) No. 13 — Chassis ground:</i>	Is the resistance less than 1 Ω?	Go to step 3.	Repair the open circuit of harness between the body integrated unit and chassis ground.
3 CHECK BATTERY POWER SUPPLY. 1) Turn the ignition switch to ON. (engine OFF) 2) Check the voltage between body integrated unit and chassis ground. <i>Connector & terminal</i> <i>(B280) No. 2 (+) — Chassis ground (-):</i>	Is the voltage 9 V or more?	Go to step 4.	Repair the open circuit harness between battery and body integrated unit, and poor contact in connector.
4 CHECK IGNITION POWER SUPPLY CIRCUIT. 1) Turn the ignition switch to ACC. 2) Check the voltage between body integrated unit and chassis ground. <i>Connector & terminal</i> <i>(B281) No. 10 (+) — Chassis ground (-):</i>	Is the voltage 9 V or more?	Go to step 5.	Repair the open circuit harness between battery and body integrated unit, and poor contact in connector.
5 CHECK IGNITION POWER SUPPLY CIRCUIT. 1) Turn the ignition switch to ON. (engine OFF) 2) Measure the voltage between body integrated unit and chassis ground. <i>Connector & terminal</i> <i>(B281) No. 19 (+) — Chassis ground (-):</i>	Is the voltage 9 V or more?	Go to step 6.	Repair the open circuit harness between battery and body integrated unit, and poor contact in connector.
6 CHECK POOR CONTACT.	Is there poor contact in the connector?	Repair the poor contact.	Replace the body integrated unit.

3. SELECT LEVER CANNOT BE SHIFTED

WIRING DIAGRAM:



Step	Check	Yes	No
1 CHECK STOP LIGHT SWITCH. Depress the brake pedal.	Does the stop light illuminate?	Go to step 2.	Check the stop light system.
2 CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND BODY INTEGRATED UNIT. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors of body integrated unit and stop light switch. 3) Measure the resistance of harness between stop light switch and body integrated unit. Connector & terminal (B65) No. 3 — (B281) No. 9:	Is the resistance 1 MΩ or more?	Repair the open circuit of harness between the body integrated unit and stop light switch.	Go to step 3.

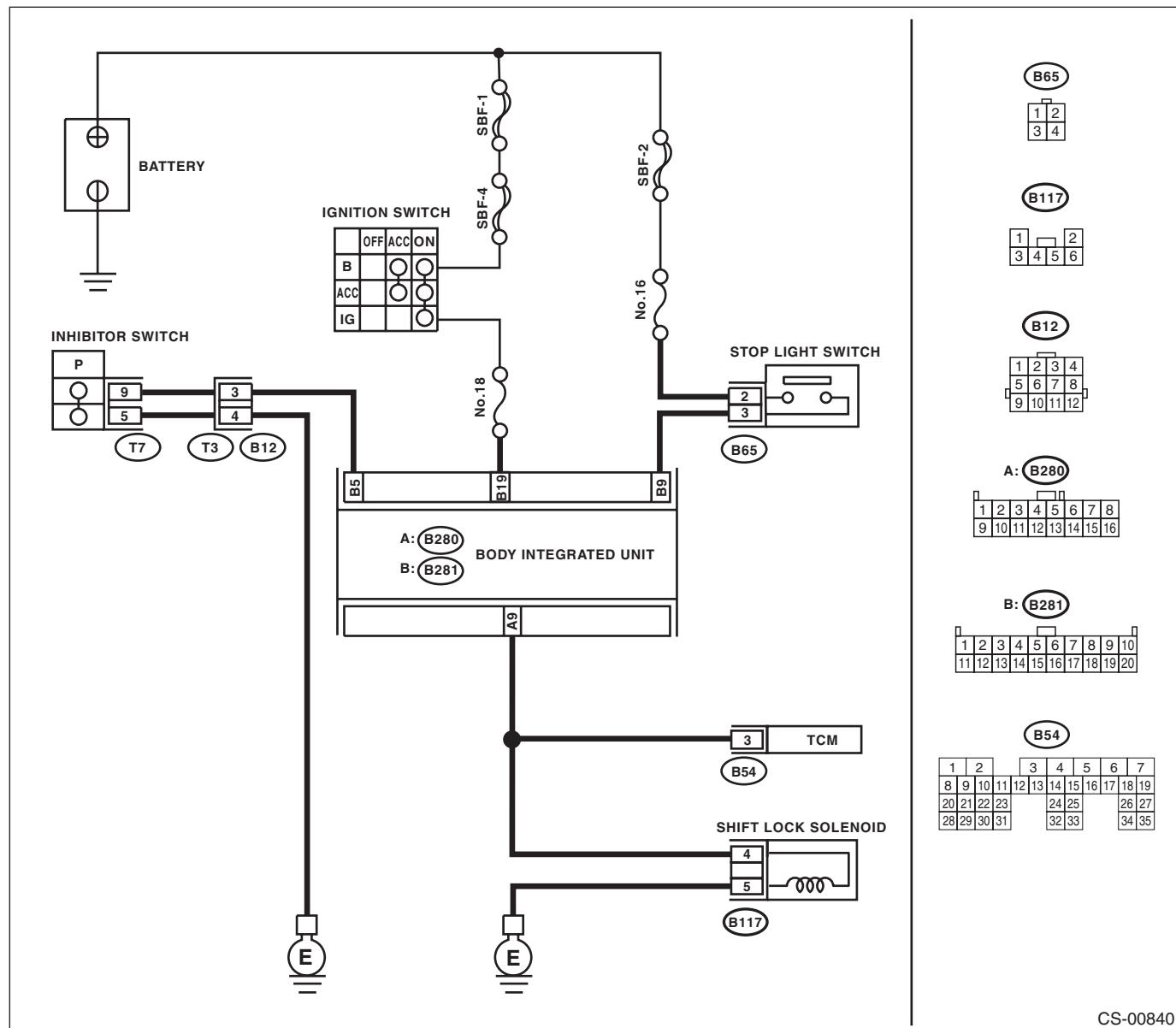
AT Shift Lock Control System

CONTROL SYSTEMS

Step	Check	Yes	No
3 CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND BODY INTEGRATED UNIT. Measure the resistance of harness between stop light switch and chassis ground. <i>Connector & terminal (B65) No. 3 — Chassis ground:</i>	Is the resistance less than 1 Ω ?	Repair the short circuit of harness between the body integrated unit and stop light switch.	Go to step 4.
4 CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND SHIFT LOCK SOLENOID. 1) Disconnect the connector of shift lock solenoid. 2) Measure the harness resistance between body integrated unit and the shift lock solenoid. <i>Connector & terminal (B117) No. 4 — (B280) No. 9:</i>	Is the resistance 1 $M\Omega$ or more?	Repair the open circuit of harness between body integrated unit and shift lock solenoid.	Go to step 5.
5 CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND SHIFT LOCK SOLENOID. Measure the resistance of harness between shift lock solenoid and chassis ground. <i>Connector & terminal (B117) No. 4 — Chassis ground:</i>	Is the resistance less than 1 Ω ?	Repair the short circuit of harness between the body integrated unit and shift lock solenoid.	Go to step 6.
6 CHECK HARNESS CONNECTOR BETWEEN TCM AND SHIFT LOCK SOLENOID. 1) Disconnect the connector of shift lock solenoid. 2) Measure the resistance of harness between TCM and shift lock solenoid. <i>Connector & terminal (B117) No. 4 — (B54) No. 3:</i>	Is the resistance 1 $M\Omega$ or more?	Repair open circuit of harness between TCM and shift lock solenoid.	Go to step 7.
7 CHECK HARNESS CONNECTOR BETWEEN TCM AND SHIFT LOCK SOLENOID. Measure the resistance of harness between shift lock solenoid and chassis ground. <i>Connector & terminal (B117) No. 4 — Chassis ground:</i>	Is resistance less than 1 Ω ?	Repair short circuit of harness between TCM and shift lock solenoid.	Go to step 8.
8 CHECK HARNESS BETWEEN SHIFT LOCK SOLENOID AND CHASSIS GROUND. Measure the resistance of harness between shift lock solenoid and chassis ground. <i>Connector & terminal (B117) No. 5 — Chassis ground:</i>	Is the resistance 1 $M\Omega$ or more?	Repair open circuit of harness between shift lock solenoid and chassis ground.	Go to step 9.
9 CHECK SHIFT LOCK SOLENOID. Measure the resistance of the shift lock solenoid connector terminals. <i>Terminals No. 4 — No. 5:</i>	Is the resistance 20 — 40 Ω ?	Go to step 10.	Replace the shift lock solenoid.
10 CHECK SHIFT LOCK SOLENOID. Connect the battery to connector terminal of shift lock solenoid, and operate the solenoid. <i>Terminals No. 4 (+) — No. 5 (-):</i>	Is the shift lock solenoid operating properly?	Go to step 11.	Replace the shift lock solenoid.
11 CHECK POOR CONTACT.	Is there poor contact in the connector?	Repair the poor contact.	Replace the body integrated unit.

4. SELECT LEVER CANNOT BE SHIFT LOCKED

WIRING DIAGRAM:



AT Shift Lock Control System

CONTROL SYSTEMS

Step	Check	Yes	No
1 CHECK INHIBITOR SWITCH. 1) Turn the ignition switch to ON. (engine OFF) 2) Move the select lever from "P" to "1" range.	Combination meter indicator light and select lever "P", "R", "N", "3", "2" and "1" are correctly matched?	Go to step 2 .	Adjust inhibitor switch and select cable.
2 CHECK IGNITION POWER SUPPLY CIRCUIT. 1) Turn the ignition switch to ON. (engine OFF) 2) Measure the voltage between body integrated unit and chassis ground. <i>Connector & terminal (B281) No. 19 (+) — Chassis ground (-):</i>	Is the voltage 9 V or more?	Go to step 3 .	Repair the open circuit harness between battery and body integrated unit, and poor contact in connector.
3 CHECK HARNESS BETWEEN THE INHIBITOR SWITCH AND THE BODY INTEGRATED UNIT. 1) Turn the ignition switch to OFF. 2) Disconnect the transmission harness and body integrated unit connector. 3) Measure the harness resistance between the body integrated unit and chassis ground. <i>Connector & terminal (B280) No. 5 — Chassis ground:</i>	Is the resistance less than 1 Ω ?	Repair the short circuit of harness between the body integrated unit and transmission connector.	Go to step 4 .
4 CHECK HARNESS BETWEEN THE INHIBITOR SWITCH AND THE BODY INTEGRATED UNIT. Measure the resistance of harness between body integrated unit and inhibitor switch. <i>Connector & terminal (B12) No. 3 — (B281) No. 5:</i>	Is the resistance 1 $M\Omega$ or more?	Repair the open wire of harness between the body integrated unit and transmission connector.	Go to step 5 .
5 CHECK HARNESS BETWEEN INHIBITOR SWITCH AND CHASSIS GROUND. Measure the harness resistance between the body integrated unit and chassis ground. <i>Connector & terminal (B12) No. 4 — Chassis ground:</i>	Is the resistance less than 1 Ω ?	Go to step 6 .	Repair the open circuit of harness between the body integrated unit and chassis ground.
6 CHECK INHIBITOR SWITCH. 1) Move the select lever to "P" range. 2) Measure the resistance between transmission harness connector terminals. <i>Connector & terminal (T3) No. 3 — No. 4:</i>	Is the resistance 1 $M\Omega$ or more?	Repair or replace inhibitor switch.	Go to step 7 .
7 CHECK OUTPUT SIGNAL OF BODY INTEGRATED UNIT. 1) Connect all connectors. 2) Turn the ignition switch to ON. 3) Measure the voltage between body integrated unit and chassis ground. <i>Connector & terminal (B281) No. 5 (+) — Chassis ground (-):</i>	Is the voltage 9 — 16 V?	Go to step 8 .	Go to step 18 .
8 CHECK STOP LIGHT SWITCH. Depress the brake pedal.	Does the stop light illuminate?	Go to step 9 .	Check the stop light system.
9 CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND AT SHIFT LOCK CONTROL MODULE. 1) Depress the brake pedal. 2) Measure the voltage between body integrated unit and chassis ground. <i>Connector & terminal (B281) No. 9 (+) — Chassis ground (-):</i>	Is the voltage 9 V or more?	Go to step 10 .	Repair the open or short circuit of harness between the body integrated unit and stop light switch.

AT Shift Lock Control System

CONTROL SYSTEMS

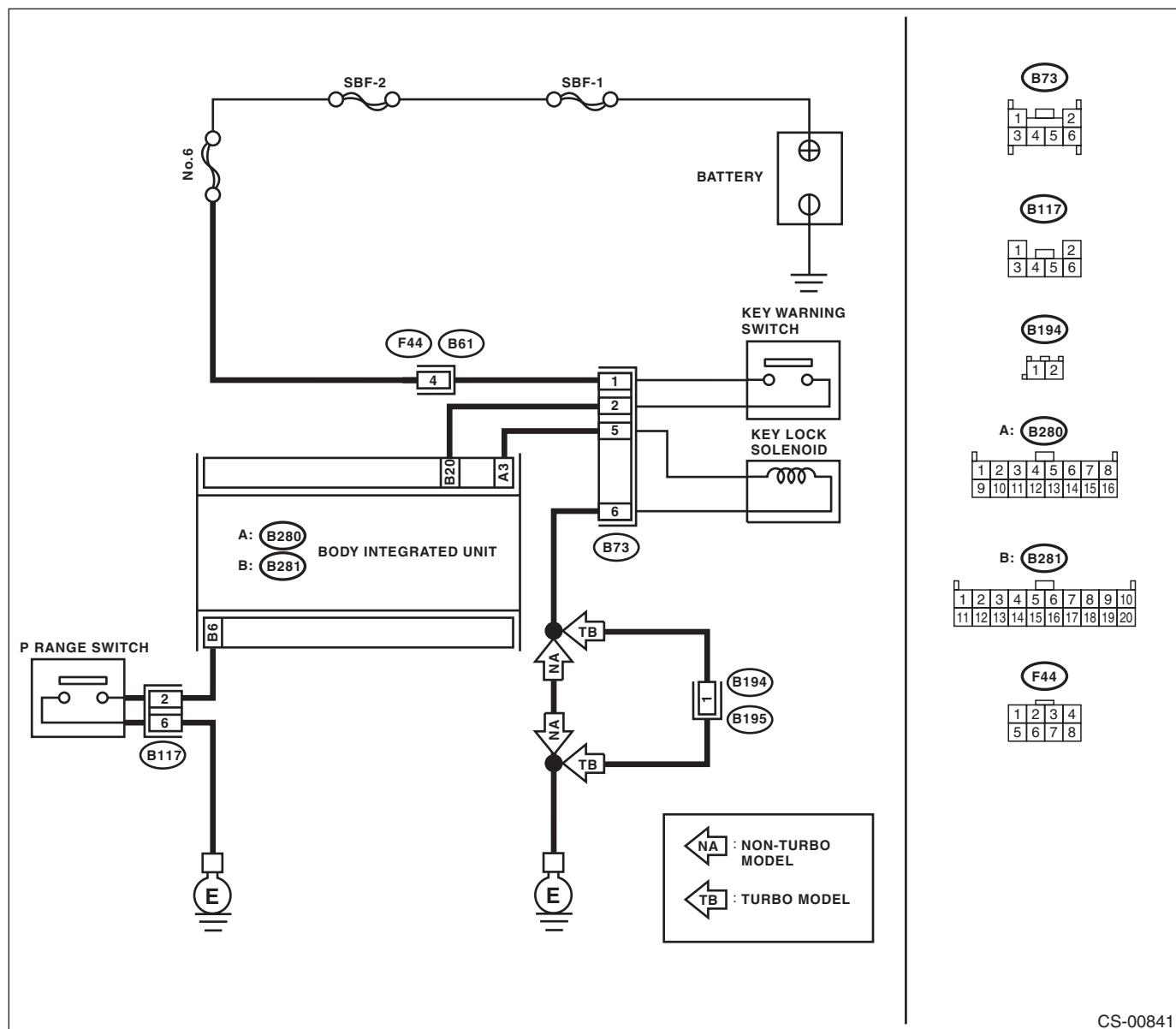
Step	Check	Yes	No
10 CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND SHIFT LOCK SOLENOID. 1) Turn the ignition switch to OFF. 2) Disconnect the shift lock solenoid and body integrated unit connector. 3) Measure the harness resistance between body integrated unit and the shift lock solenoid. <i>Connector & terminal (B280) No. 9 — (B117) No. 4:</i>	Is the resistance 1 MΩ or more?	Repair the open circuit of harness between body integrated unit and shift lock solenoid.	Go to step 11.
11 CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND SHIFT LOCK SOLENOID. Measure the resistance of harness between shift lock solenoid and chassis ground. <i>Connector & terminal (B280) No. 9 — Chassis ground:</i>	Is the resistance less than 10 Ω?	Go to step 12.	Repair the short circuit of harness between the body integrated unit and shift lock solenoid.
12 CHECK HARNESS CONNECTOR BETWEEN TCM AND SHIFT LOCK SOLENOID. 1) Turn the ignition switch to OFF. 2) Disconnect the connector of shift lock solenoid and TCM. 3) Measure the resistance of harness between TCM and shift lock solenoid. <i>Connector & terminal (B54) No. 3 — (B117) No. 4:</i>	Is the resistance 1 MΩ or more?	Repair open circuit of harness between TCM and shift lock solenoid.	Go to step 13.
13 CHECK HARNESS CONNECTOR BETWEEN TCM AND SHIFT LOCK SOLENOID. Measure the resistance of harness between shift lock solenoid and chassis ground. <i>Connector & terminal (B54) No. 3 — Chassis ground:</i>	Is resistance less than 10 Ω?	Go to step 14.	Repair short circuit of harness between TCM and shift lock solenoid.
14 CHECK HARNESS BETWEEN SHIFT LOCK SOLENOID AND CHASSIS GROUND. Measure the resistance of harness between shift lock solenoid and chassis ground. <i>Connector & terminal (B117) No. 5 — Chassis ground:</i>	Is the resistance less than 1 Ω?	Go to step 15.	Repair open circuit of harness between shift lock solenoid and chassis ground.
15 CHECK SHIFT LOCK SOLENOID. Measure the resistance of the shift lock solenoid connector terminals. <i>Terminals No. 4 — No. 5:</i>	Is the resistance 20 — 40 Ω?	Go to step 16.	Replace the shift lock solenoid.
16 CHECK SHIFT LOCK SOLENOID. Connect the battery to connector terminal of shift lock solenoid, and operate the solenoid. <i>Terminals No. 4 (+) — No. 5 (-):</i>	Is the shift lock solenoid operating properly?	Go to step 17.	Replace the shift lock solenoid.
17 CHECK OUTPUT SIGNAL FOR AT SHIFT LOCK CONTROL MODULE. 1) Turn the ignition switch to ON. (engine OFF) 2) Measure the voltage between body integrated unit and chassis ground. <i>Connector & terminal (B280) No. 9 (+) — Chassis ground (-):</i>	Is the voltage 8.5 V or more?	Go to step 18.	Replace the body integrated unit.
18 CHECK POOR CONTACT.	Is there poor contact in the connector?	Repair the poor contact.	Replace the body integrated unit.

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5. KEY INTERLOCK DOES NOT LOCK OR RELEASE

WIRING DIAGRAM:



AT Shift Lock Control System

CONTROL SYSTEMS

Step	Check	Yes	No
1 CHECK HARNESS BETWEEN BATTERY AND KEY WARNING SWITCH. 1) Disconnect the connector of key warning switch. 2) Measure the voltage of harness between key warning switch and chassis ground. <i>Connector & terminal (B73) No. 1 (+) — Chassis ground (-):</i>	Is the voltage 9 — 16 V?	Go to step 2.	Repair the open or short circuit of harness between battery and key warning switch.
2 CHECK KEY WARNING SWITCH. Measure the resistance between connector terminals of key warning switch. <i>Terminals No. 1 — No. 2:</i>	Is the resistance 1 MΩ or more?	Replace the key warning switch.	Go to step 3.
3 CHECK KEY WARNING SWITCH. 1) Remove the key. 2) Measure the resistance between connector terminals of key warning switch. <i>Terminals No. 1 — No. 2:</i>	Is the resistance 1 MΩ or more?	Go to step 4.	Replace the key warning switch.
4 CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND KEY WARNING SWITCH. 1) Disconnect the body integrated unit connector. 2) Measure the voltage between body integrated unit and chassis ground. <i>Connector & terminal (B281) No. 20 (+) — Chassis ground (-):</i>	Is the voltage 9 V or more?	Go to step 5.	Repair the open circuit of harness between body integrated unit and key warning switch.
5 CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND KEY LOCK SOLENOID. 1) Disconnect the connector key lock solenoid. 2) Measure the harness resistance between body integrated unit and the key lock solenoid. <i>Connector & terminal (B73) No. 5 — (B280) No. 3:</i>	Is the resistance 1 MΩ or more?	Repair the open circuit of harness between body integrated unit and key lock solenoid.	Go to step 6.
6 CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND KEY LOCK SOLENOID. Measure the harness resistance between the body integrated unit and chassis ground. <i>Connector & terminal (B280) No. 3 — Chassis ground:</i>	Is the resistance 1 Ω or more?	Go to step 7.	Repair the short of the harness between body integrated unit and key lock solenoid.
7 CHECK HARNESS BETWEEN KEY LOCK SOLENOID AND CHASSIS GROUND. Measure the resistance of harness between key lock solenoid and chassis ground. <i>Connector & terminal (B73) No. 6 — Chassis ground:</i>	Is the resistance less than 10 Ω?	Go to step 8.	Repair open circuit or the poor contact of the harness between key lock solenoid and chassis ground.
8 CHECK KEY LOCK SOLENOID. Measure the resistance of key lock solenoid connector terminals. <i>Terminals No. 5 — No. 6:</i>	Is the resistance 4 — 8 Ω?	Go to step 9.	Replace the key lock solenoid.
9 CHECK HARNESS BETWEEN "P" RANGE SWITCH AND CHASSIS GROUND. Measure the resistance of harness between "P" range switch and chassis ground. <i>Connector & terminal (B117) No. 2 — Chassis ground:</i>	Is the resistance less than 1 Ω?	Go to step 10.	Repair the short circuit of harness between "P" range switch and body integrated unit.

AT Shift Lock Control System

CONTROL SYSTEMS

Step	Check	Yes	No
10 CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND “P” RANGE SWITCH. 1) Disconnect the connector of “P” range switch. 2) Measure the resistance of harness between body integrated unit and “P” range switch. <i>Connector & terminal (B117) No. 2 — (B281) No. 6:</i>	Is the resistance 1 MΩ or more?	Repair the open circuit of harness between body integrated unit and “P” range switch.	Go to step 11.
11 CHECK HARNESS BETWEEN “P” RANGE SWITCH AND CHASSIS GROUND. Measure the resistance of harness between “P” range switch and chassis ground. <i>Connector & terminal (B117) No. 6 — Chassis ground:</i>	Is the resistance 1 MΩ or more?	Repair the open circuit of harness between “P” range switch and chassis ground.	Go to step 12.
12 CHECK “P” RANGE SWITCH. 1) Move the select lever to “P” range. 2) Measure the resistance between “P” range switch connector terminals. <i>Terminals No. 2 — No. 6:</i>	Is the resistance less than 1 Ω?	Go to step 13.	Replace the “P” range switch.
13 CHECK “P” RANGE SWITCH. 1) Set the select lever to other than “P” range. 2) Measure the resistance between “P” range switch connector terminals. <i>Terminals No. 2 — No. 6:</i>	Is the resistance 1 MΩ or more?	Go to step 14.	Replace the “P” range switch.
14 CHECK OUTPUT SIGNAL OF BODY INTEGRATED UNIT. 1) Disconnect all connectors. 2) Turn the ignition switch to ON. (engine OFF) 3) Move the select lever to “P” range. 4) Depress the brake pedal. 5) Measure the voltage between body integrated unit connector and chassis ground. <i>Connector & terminal (B280) No. 3 (+) — Chassis ground (-):</i>	Is the voltage 7.5 — 16 V?	Go to step 15.	Replace the body integrated unit.
15 CHECK POOR CONTACT.	Is there poor contact of the connector?	Repair the poor contact.	Replace the body integrated unit.