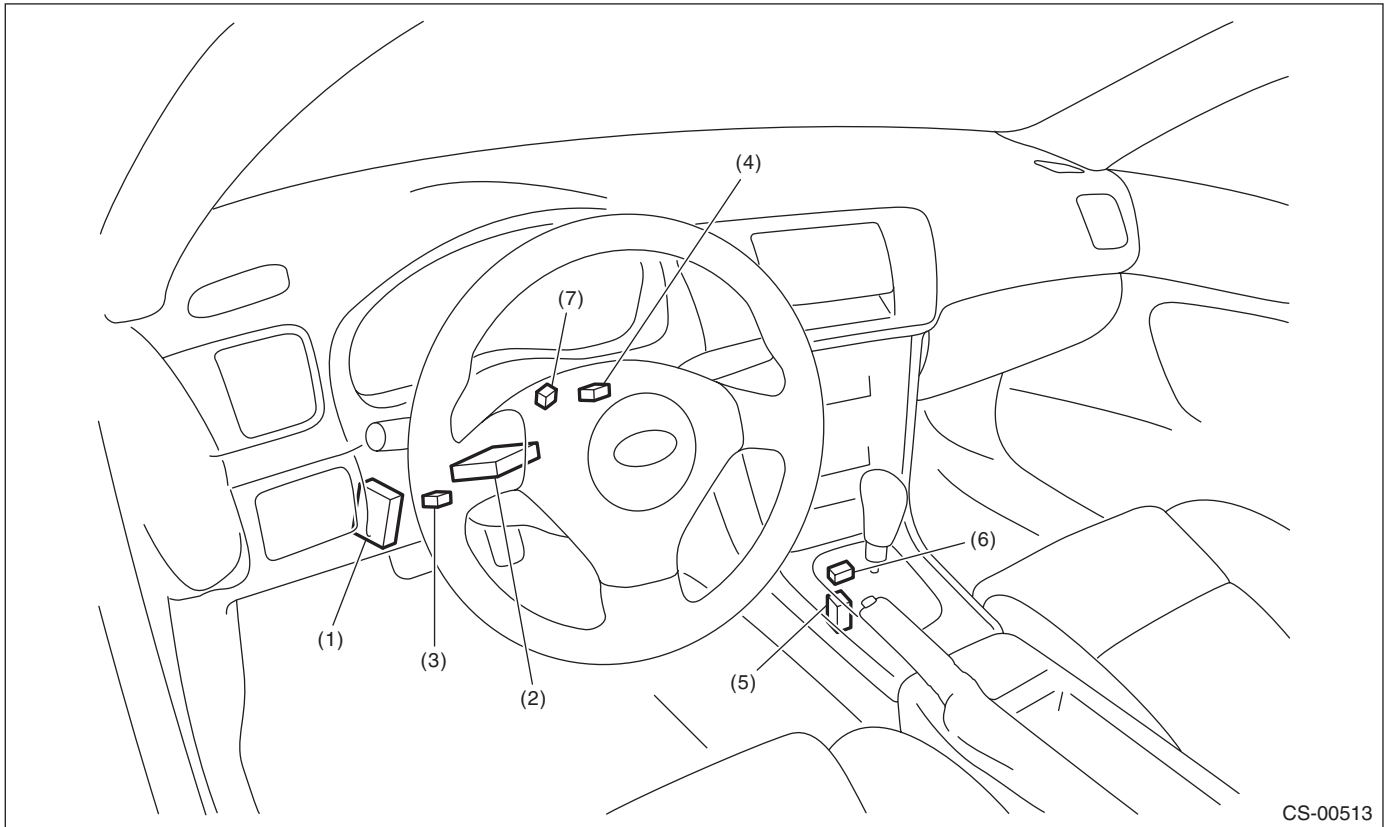


## 2. AT Shift Lock Control System

### A: LOCATION

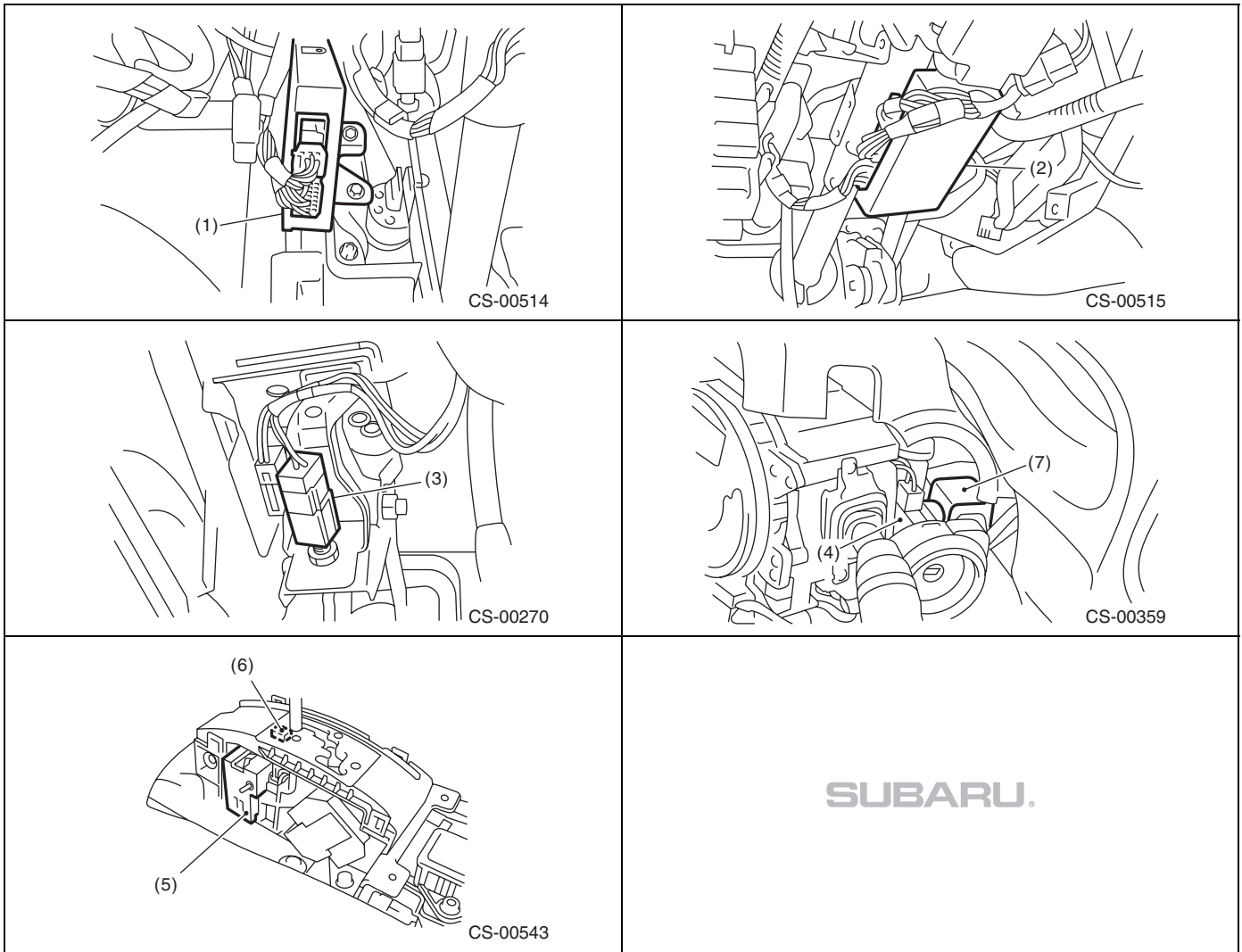


CS-00513

- |                          |                                                        |                       |
|--------------------------|--------------------------------------------------------|-----------------------|
| (1) TCM ("P" range)      | (4) Key cylinder<br>(with built-in key warning switch) | (6) "P" range switch  |
| (2) Body integrated unit | (5) Shift lock solenoid ASSY                           | (7) Key lock solenoid |
| (3) Stop light switch    |                                                        |                       |

# AT Shift Lock Control System

## CONTROL SYSTEMS

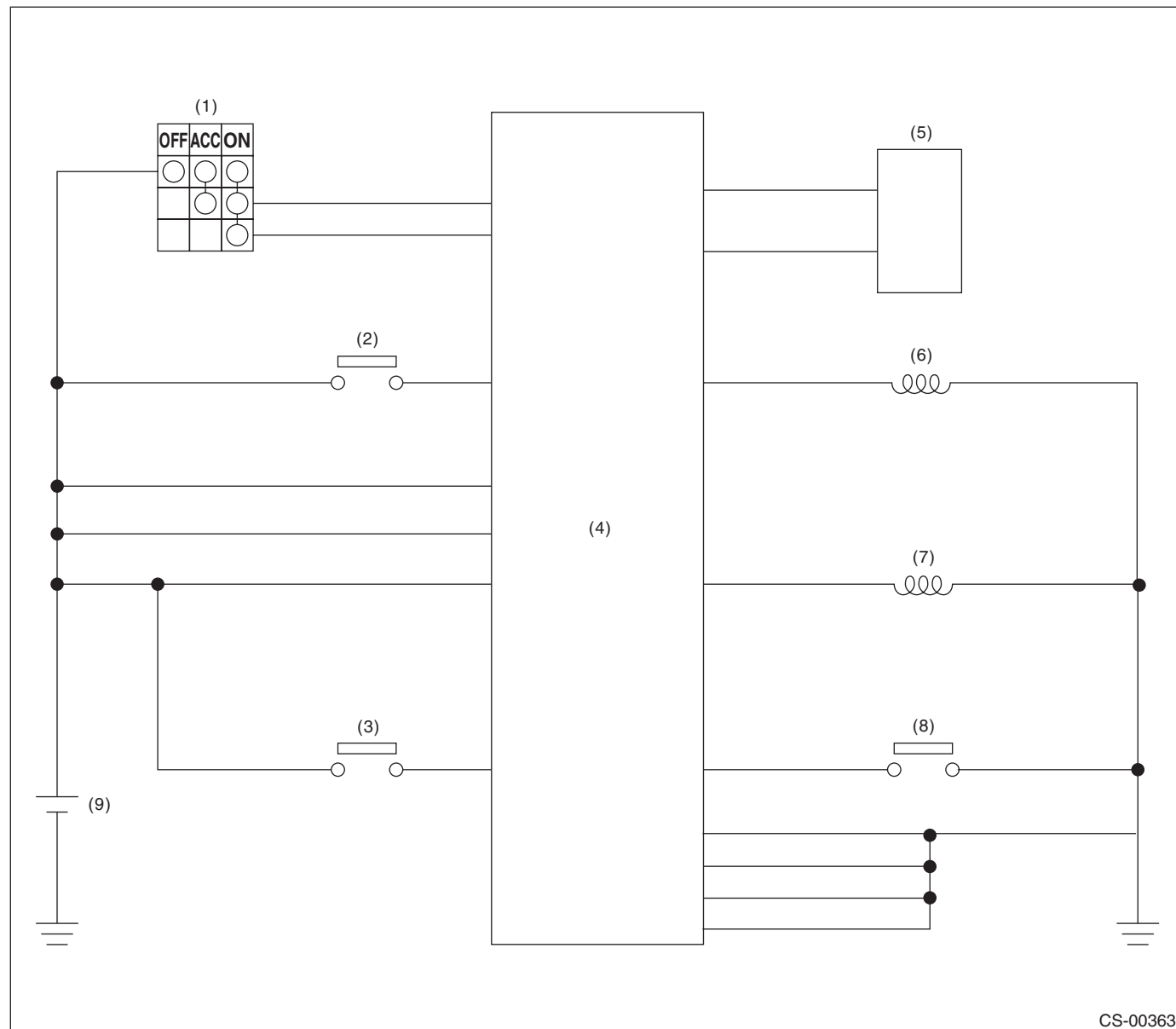




# AT Shift Lock Control System

CONTROL SYSTEMS

## C: WIRING DIAGRAM



## D: INSPECTION

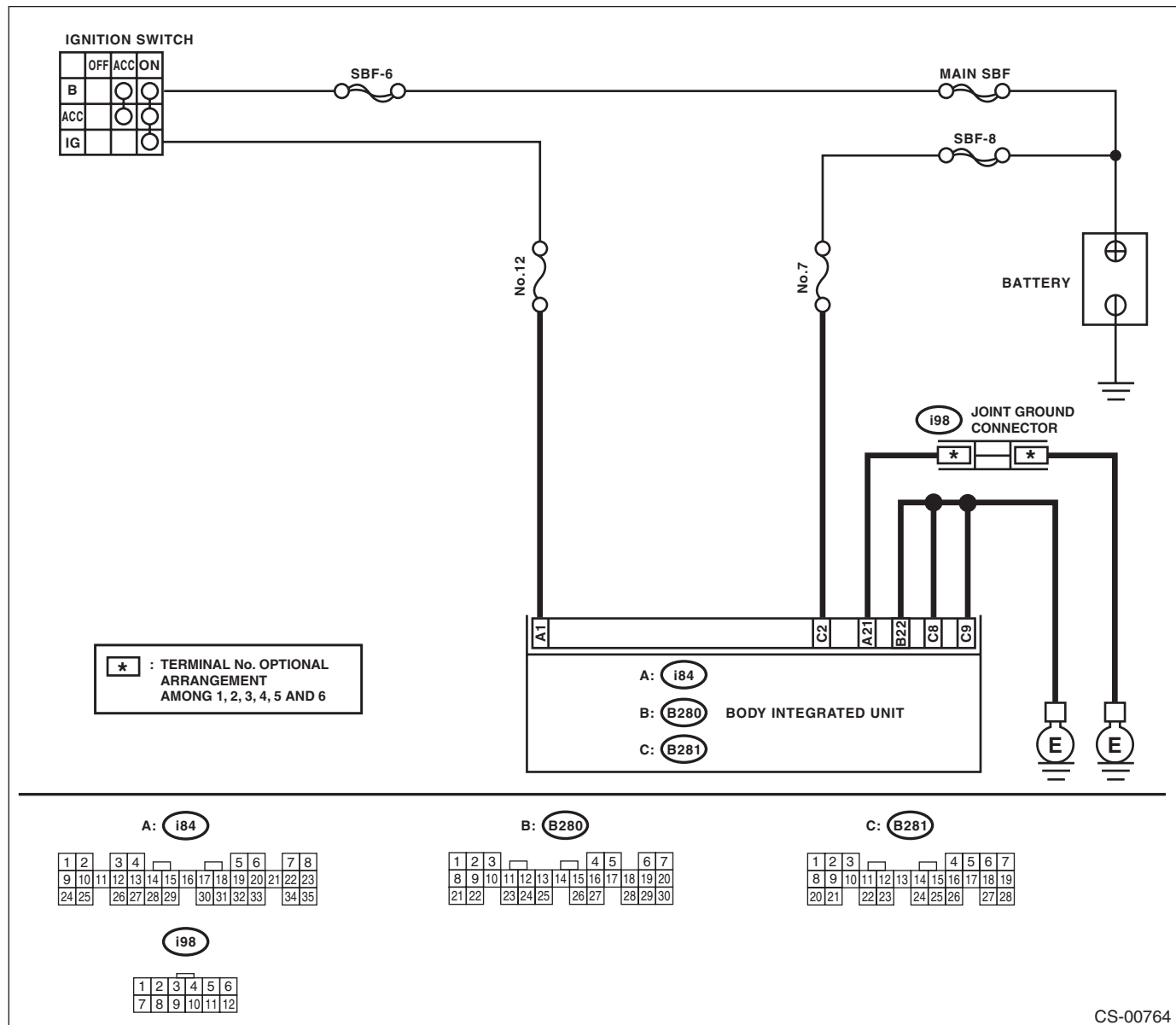
### 1. SHIFT LOCK OPERATION

Step	Check	Yes	No
1 <b>CHECK SHIFT LOCK.</b> 1) Turn the ignition switch to ON. 2) Shift the select lever to the "P" range.	While brake pedal is not depressed, is it possible to move the select lever from the "P" range to other ranges?	Inspect "SELECT LEVER CANNOT BE SHIFT LOCKED". <Ref. to CS-15, SELECT LEVER CANNOT BE SHIFTED, INSPECTION, AT Shift Lock Control System.>	Go to step 2.
2 <b>CHECK SHIFT LOCK.</b>	While brake pedal is depressed, is it possible to move the select lever from the "P" range to other ranges?	Go to step 3.	Inspect "SELECT LEVER SHIFT LOCK CANNOT BE RELEASED". <Ref. to CS-17, SHIFT LOCK OF SELECT LEVER CANNOT BE RELEASED., INSPECTION, AT Shift Lock Control System.>
3 <b>CHECK KEY INTERLOCK.</b>	When the select lever is set to other than "P" range, can the ignition switch be turned to the "LOCK" position?	Go to step 4.	Go to step 5.
4 <b>CHECK BACKUP POWER SUPPLY CIRCUIT.</b> Inspect the backup power supply circuit. <Ref. to CS-14, BODY INTEGRATED UNIT POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, AT Shift Lock Control System.>	Is the backup power supply circuit operating properly?	Perform the inspection of "KEY INTERLOCK DOES NOT BE LOCKED OR RELEASED". <Ref. to CS-17, SHIFT LOCK OF SELECT LEVER CANNOT BE RELEASED., INSPECTION, AT Shift Lock Control System.>	Repair the backup power supply circuit.
5 <b>CHECK KEY INTERLOCK.</b>	When the select lever is in the "P" range, can the ignition switch be turned to the "LOCK" position?	AT shift lock system is normal.	Perform the inspection of "KEY INTERLOCK DOES NOT BE LOCKED OR RELEASED". <Ref. to CS-17, SHIFT LOCK OF SELECT LEVER CANNOT BE RELEASED., INSPECTION, AT Shift Lock Control System.>

# AT Shift Lock Control System

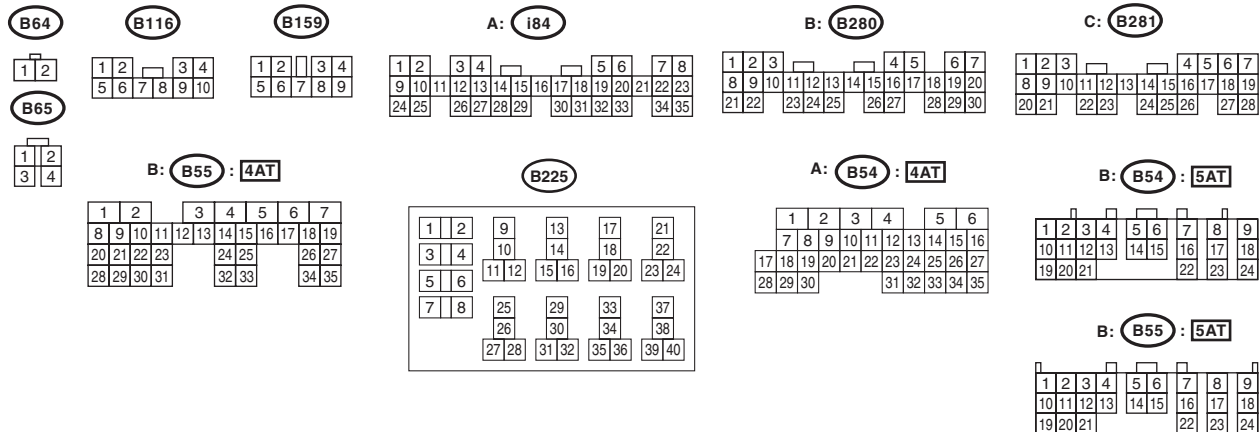
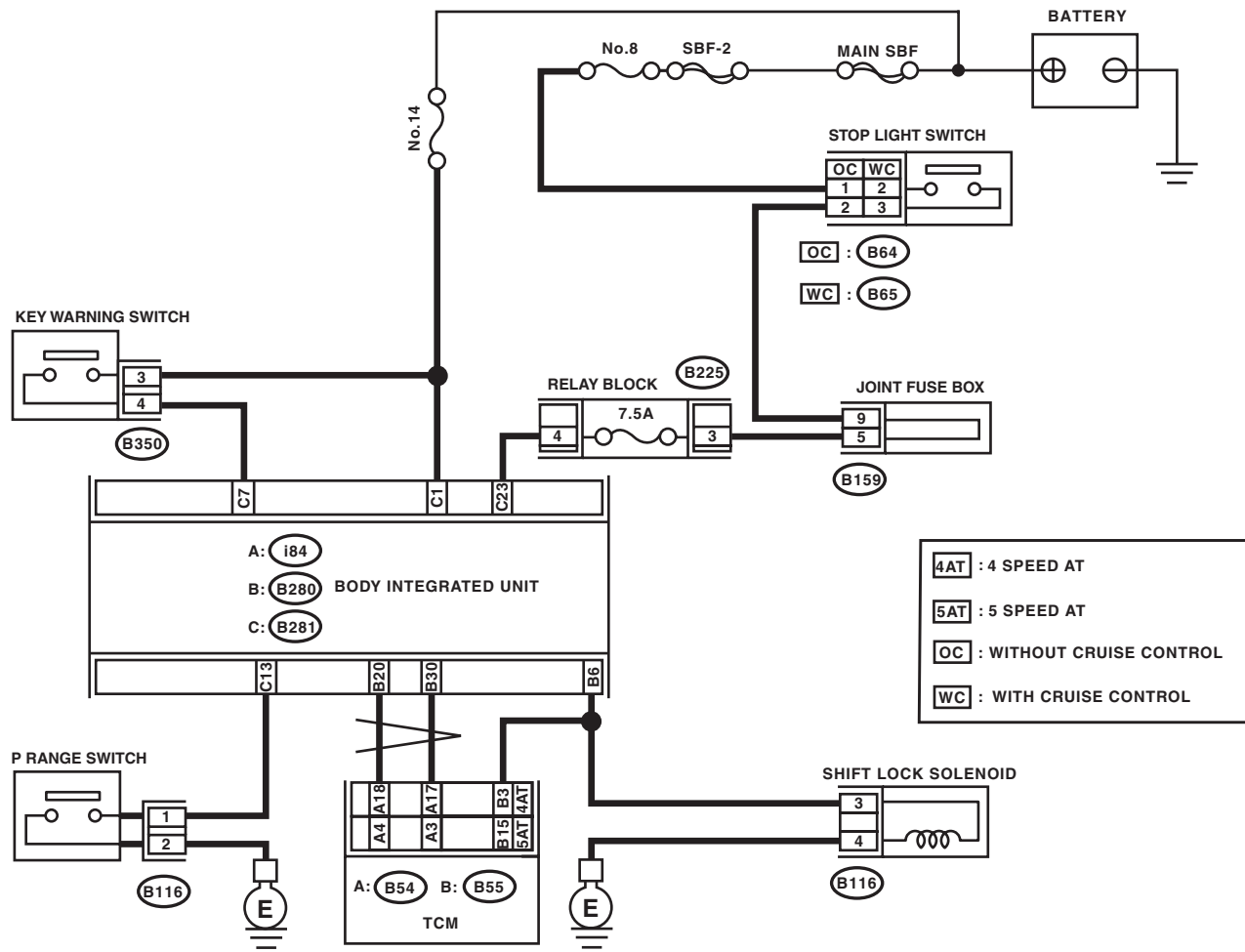
## CONTROL SYSTEMS

### 2. BODY INTEGRATED UNIT POWER SUPPLY AND GROUND CIRCUIT



Step	Check	Yes	No	
1	<b>CHECK DTC OF BODY INTEGRATED UNIT.</b> Check DTC of body integrated unit. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is the DTC of power line displayed on body integrated unit?	Repair or replace it according to the DTC.	Go to step 2.
2	<b>CHECK HARNESS CONNECTOR BETWEEN BODY INTEGRATED UNIT AND CHASSIS GROUND.</b> 1) Turn the ignition switch to OFF. 2) Measure the harness resistance between the body integrated unit and chassis ground. <b>Connector &amp; terminal</b> <b>(i84) No. 21 — Chassis ground:</b> <b>(B280) No. 22 — Chassis ground:</b> <b>(B281) No. 8 — Chassis ground:</b> <b>(B281) No. 9 — Chassis ground:</b>	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	<b>CHECK POOR CONTACT.</b>	Is there poor contact in connector?	Repair the poor contact.	Check the body integrated unit.

## 3. SELECT LEVER CANNOT BE SHIFTED



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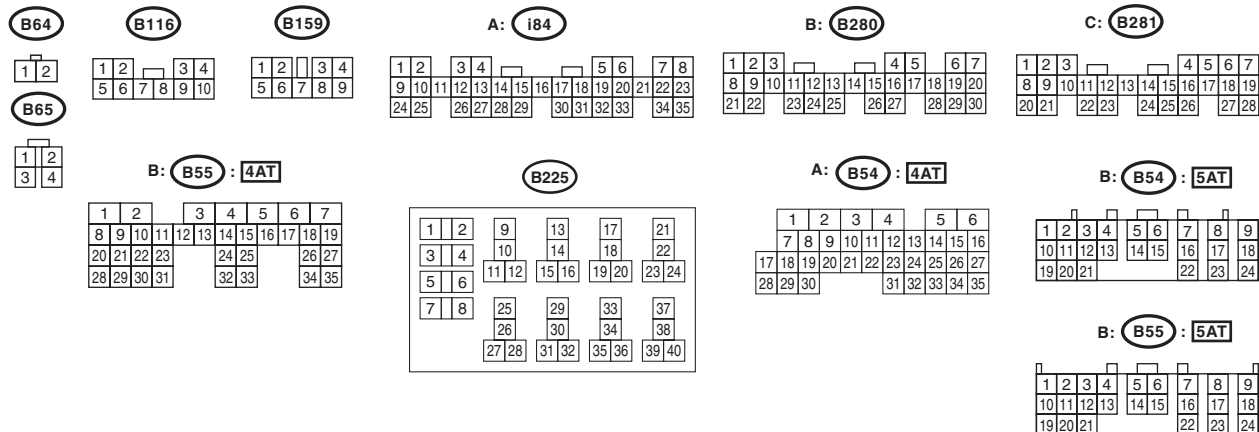
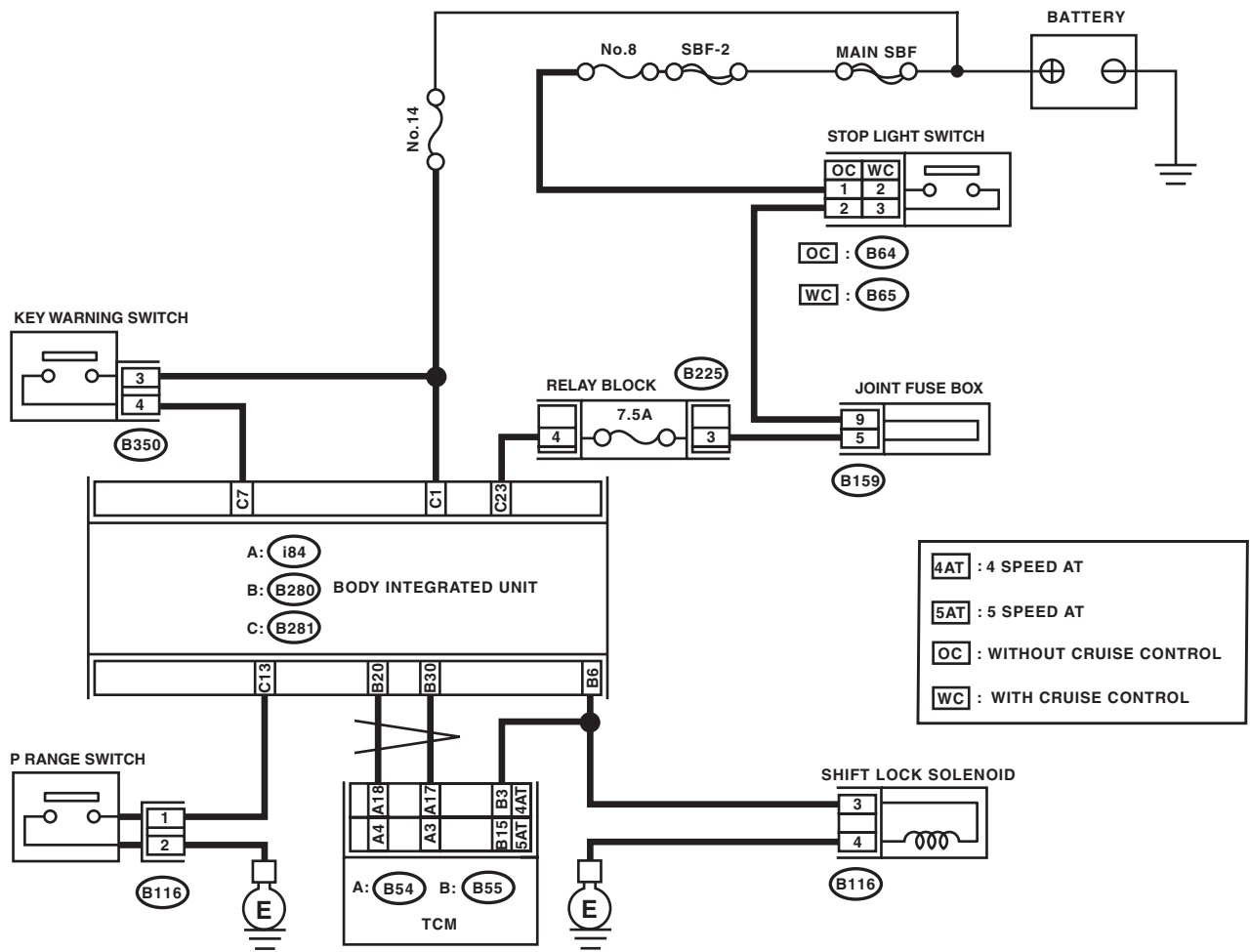
# AT Shift Lock Control System

## CONTROL SYSTEMS

Step	Check	Yes	No
<b>1 CHECK OUTPUT SIGNAL OF BODY INTEGRATED UNIT USING SUBARU SELECT MONITOR.</b> 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to the data link connector. 3) Turn the ignition switch and run the Subaru Select Monitor. 4) Read the output signal of shift lock solenoid from the Subaru Select Monitor. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is "OFF" displayed?	Go to step 4.	Go to step 2.
<b>2 CHECK OUTPUT SIGNAL OF BODY INTEGRATED UNIT USING SUBARU SELECT MONITOR.</b> Read the input signal of stop light switch from Subaru Select Monitor. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is "OFF" displayed?	Go to step 4.	Go to step 3.
<b>3 CHECK STOP LIGHT SWITCH INPUT SIGNAL.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from body integrated unit. 3) Turn the ignition switch to ON. 4) Measure the voltage between body integrated unit and chassis ground. <b>Connector &amp; terminal</b> <b>(B281) No. 23 (+) — Chassis ground (-):</b>	Is the voltage 9 V or more?	Check the stop light system.	Check the body integrated unit.
<b>4 CHECK SHIFT LOCK SOLENOID OUTPUT VOLTAGE.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector of shift lock solenoid. 3) Turn the ignition switch to ON. 4) Measure the voltage between the shift lock solenoid connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B116) No. 3 (+) — Chassis ground (-):</b>	Is the voltage 9 V or more?	Go to step 5.	Check the shift lock solenoid unit.
<b>5 CHECK SHIFT LOCK SOLENOID OUTPUT VOLTAGE.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from body integrated unit. 3) Turn the ignition switch to ON. 4) Measure the voltage between the shift lock solenoid connector terminal and chassis ground. <b>Connector &amp; terminal</b> <b>(B116) No. 3 (+) — Chassis ground (-):</b>	Is the voltage 9 V or more?	Go to step 6.	Check the body integrated unit.
<b>6 CHECK SHIFT LOCK SOLENOID OUTPUT VOLTAGE.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM. 3) Turn the ignition switch to ON. 4) Measure the voltage between the shift lock solenoid connector terminal and chassis ground. <b>Connector &amp; terminal</b> <b>(B116) No. 3 (+) — Chassis ground (-):</b>	Is the voltage 9 V or more?	Repair or replace the shorted circuit of harness between body integrated unit and shift lock solenoid.	Check the TCM.



## 4. SHIFT LOCK OF SELECT LEVER CANNOT BE RELEASED.



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# AT Shift Lock Control System

## CONTROL SYSTEMS

Step	Check	Yes	No
<b>1</b> <b>CHECK OUTPUT SIGNAL OF BODY INTEGRATED UNIT USING SUBARU SELECT MONITOR.</b> 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to the data link connector. 3) Turn the ignition switch and run the Subaru Select Monitor. 4) Depress the brake pedal. 5) Read the output signal of shift lock solenoid from the Subaru Select Monitor. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is "ON" displayed?	Go to step 11.	Go to step 2.
<b>2</b> <b>CHECK INPUT SIGNAL OF BODY INTEGRATED UNIT USING SUBARU SELECT MONITOR.</b> 1) Depress the brake pedal. 2) Read the input signal of stop light switch from Subaru Select Monitor. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is "ON" displayed?	Go to step 3.	Go to step 7.
<b>3</b> <b>CHECK INPUT SIGNAL OF BODY INTEGRATED UNIT USING SUBARU SELECT MONITOR.</b> Read the input signal of shift position from Subaru Select Monitor. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is "7" displayed?	Go to step 4.	Go to step 15.
<b>4</b> <b>CHECK INPUT SIGNAL OF BODY INTEGRATED UNIT USING SUBARU SELECT MONITOR.</b> Read the input signal of "P" range switch from the Subaru Select Monitor. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is "ON" displayed?	Go to step 5.	Go to step 8.
<b>5</b> <b>CHECK INPUT SIGNAL OF BODY INTEGRATED UNIT USING SUBARU SELECT MONITOR.</b> CHECK KEY WARNING SWITCH INPUT SIGNAL USING SUBARU SELECT MONITOR. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is "ON" displayed?	Go to step 6.	Go to step 17.
<b>6</b> <b>CHECK DTC OF BODY INTEGRATED UNIT.</b> Check DTC of the body integrated unit. <Ref. to LAN(diag)-25, OPERATION, Read Diagnostic Trouble Code (DTC).>	Is DTC displayed?	Repair or replace it according to the DTC.	Check the body integrated unit.
<b>7</b> <b>CHECK STOP LIGHT SWITCH INPUT SIGNAL.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from body integrated unit. 3) Depress the brake pedal. 4) Measure the voltage between the body integrated unit connector terminal and chassis ground. <b>Connector &amp; terminal</b> <b>(B281) No. 23 (+) — Chassis ground (-):</b>	Is the voltage 9 V or more?	Go to step 18.	Check the stop light system.

# AT Shift Lock Control System

## CONTROL SYSTEMS

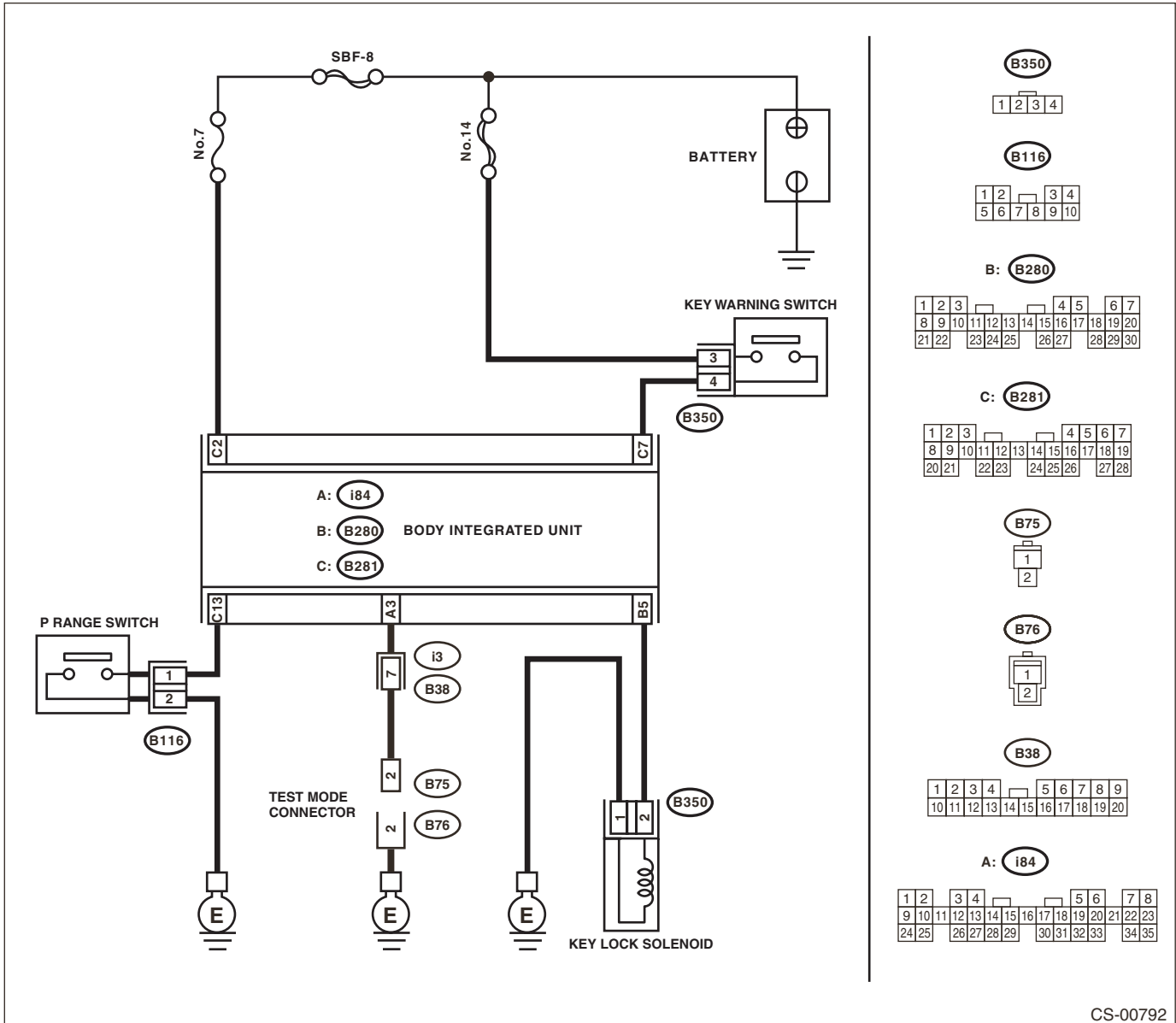
Step	Check	Yes	No
<b>8 CHECK "P" RANGE SWITCH.</b> 1) Shift the select lever to "P" range. 2) Turn the ignition switch to OFF. 3) Disconnect the connector of the "P" range switch. 4) Measure the resistance between "P" range switch connector terminals. <b>Terminals</b> <b>No. 1 — No. 2:</b>	Is the resistance less than 10 $\Omega$ ?	Go to step 9.	Replace the "P" range switch.
<b>9 CHECK HARNESS BETWEEN "P" RANGE SWITCH AND BODY INTEGRATED UNIT.</b> 1) Disconnect the connector from body integrated unit. 2) Measure the resistance of harness between "P" range switch and chassis ground. <b>Connector &amp; terminal</b> <b>(B281) No. 13 — (B116) No. 1:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 10.	Repair the open circuit of harness between the body integrated unit and the "P" range switch.
<b>10 CHECK HARNESS BETWEEN "P" RANGE SWITCH AND BODY INTEGRATED UNIT.</b> Measure the resistance between the body integrated unit and chassis ground. <b>Connector &amp; terminal</b> <b>(B281) No. 13 — Chassis ground:</b>	Is the resistance 1 M $\Omega$ or more?	Go to step 18.	Repair the short circuit of harness between body integrated unit and "P" range switch.
<b>11 CHECK OUTPUT POWER SUPPLY OF BODY INTEGRATED UNIT.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector of shift lock solenoid. 3) Turn the ignition switch to ON. 4) Measure the voltage between the shift lock solenoid connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B116) No. 3 (+) — Chassis ground (-):</b>	Is the voltage 9 V or more?	Go to step 14.	Go to step 12.
<b>12 CHECK HARNESS BETWEEN SHIFT LOCK SOLENOID AND BODY INTEGRATED UNIT.</b> Measure the resistance between shift lock solenoid and body integrated unit. <b>Connector &amp; terminal</b> <b>(B280) No. 6 — (B116) No. 3:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 13.	Repair the open circuit of harness between shift lock solenoid connector and body integrated unit.
<b>13 CHECK HARNESS BETWEEN SHIFT LOCK SOLENOID AND CHASSIS GROUND.</b> Measure the resistance of harness between shift lock solenoid and chassis ground. <b>Connector &amp; terminal</b> <b>(B280) No. 6 — Chassis ground:</b>	Is the resistance 1 M $\Omega$ or more?	Go to step 14.	Repair short circuit of harness between shift lock solenoid and chassis ground.
<b>14 CHECK SHIFT LOCK SOLENOID.</b> Connect the battery to the shift lock solenoid connector terminal, and then operate the solenoid. <b>Terminals</b> <b>No. 3 (+) — No. 4 (-):</b>	Does the shift lock solenoid operate normally?	Go to step 18.	Replace the shift lock solenoid unit.
<b>15 CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.</b> Read the input signal of "P" range from the Subaru Select Monitor. <Ref. to 4AT(diag)-15, OPERATION, Subaru Select Monitor.>	Is "ON" displayed?	Go to step 10.	Adjust the inhibitor switch and cable.

# AT Shift Lock Control System

## CONTROL SYSTEMS

Step	Check	Yes	No
<b>16 CHECK DTC OF BODY INTEGRATED UNIT.</b> Check DTC of the body integrated unit.	Is DTC displayed?	Repair or replace it according to the DTC.	Check the body integrated unit and TCM.
<b>17 CHECK KEY WARNING SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector of body integrated unit. 3) Measure the voltage between the body integrated unit harness connector terminal and chassis ground with the key inserted. <b>Connector &amp; terminal</b> <b>(B281) No. 23 (+) — Chassis ground (-):</b>	Is the voltage 9 V or more?	Go to step 18.	Check the key warning switch circuit.
<b>18 CHECK POOR CONTACT.</b>	Is there poor contact?	Repair or replace the poor contact of the connector terminal or harness.	Replace the body integrated unit.

## 5. KEY INTERLOCK DOES NOT LOCK OR RELEASE



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# AT Shift Lock Control System

## CONTROL SYSTEMS

	Step	Check	Yes	No
1	<b>CHECK INPUT SIGNAL OF BODY INTEGRATED UNIT USING SUBARU SELECT MONITOR.</b> 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to the data link connector. 3) Turn the ignition switch to ON and run the Subaru Select Monitor. 4) Depress the brake pedal. 5) Read the input signal of the key warning switch from the Subaru Select Monitor. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is "ON" displayed?	Go to step 2.	Go to step 4.
2	<b>CHECK INPUT SIGNAL OF BODY INTEGRATED UNIT USING SUBARU SELECT MONITOR.</b> 1) Shift the select lever to the "P" range. 2) Read the input signal of "P" range switch from Subaru Select Monitor. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is "ON" displayed?	Go to step 3.	Go to step 8.
3	<b>CHECK DTC OF BODY INTEGRATED UNIT.</b> Check DTC of the body integrated unit. <Ref. to LAN(diag)-25, OPERATION, Read Diagnostic Trouble Code (DTC).>	Is DTC (B0105) displayed?	Repair or replace it according to the DTC.	Check the body integrated unit.
4	<b>CHECK HARNESS BETWEEN BATTERY AND KEY WARNING SWITCH.</b> 1) Disconnect the connector of key warning switch. 2) Measure the voltage of harness between key warning switch and chassis ground. <b>Connector &amp; terminal</b> <b>(B350) No. 3 (+) — Chassis ground (-):</b>	Is the voltage 9 — 16 V?	Go to step 5.	Repair the open or short circuit of harness between battery and key warning switch.
5	<b>CHECK KEY WARNING SWITCH.</b> Measure the resistance between connector terminals of key warning switch. <b>Terminals</b> <b>No. 3 — No. 4:</b>	Is the resistance 1 M $\Omega$ or more?	Replace the key warning switch.	Go to step 6.
6	<b>CHECK KEY WARNING SWITCH.</b> 1) Remove the key. 2) Measure the resistance between connector terminals of key warning switch. <b>Terminals</b> <b>No. 3 — No. 4:</b>	Is the resistance 1 M $\Omega$ or more?	Go to step 7.	Replace the key warning switch.
7	<b>CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND KEY WARNING SWITCH.</b> 1) Disconnect the connector of body integrated unit. 2) Measure the voltage between body integrated unit and chassis ground. <b>Connector &amp; terminal</b> <b>(B281) No. 7 (+) — Chassis ground (-):</b>	Is the voltage 9 V or more?	Go to step 8.	Repair the open circuit of harness between body integrated unit and key warning switch.
8	<b>CHECK HARNESS BETWEEN "P" RANGE SWITCH AND CHASSIS GROUND.</b> Measure the resistance of harness between "P" range switch and chassis ground. <b>Connector &amp; terminal</b> <b>(B116) No. 1 — Chassis ground:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 9.	Repair the short circuit of harness between "P" range switch and body integrated unit.

Step	Check	Yes	No
<b>9 CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND “P” RANGE SWITCH.</b> 1) Disconnect the connector of the “P” range switch. 2) Measure the resistance of harness between the body integrated unit and the “P” range switch. <b>Connector &amp; terminal</b> <b>(B116) No. 1 — (B281) No. 13:</b>	Is the resistance 1 MΩ or more?	Repair the open circuit of harness between the body integrated unit and the “P” range switch.	Go to step 10.
<b>10 CHECK HARNESS BETWEEN “P” RANGE SWITCH AND CHASSIS GROUND.</b> Measure the resistance of harness between “P” range switch and chassis ground. <b>Connector &amp; terminal</b> <b>(B116) No. 2 — Chassis ground:</b>	Is the resistance 1 MΩ or more?	Repair the open circuit of harness between “P” range switch and chassis ground.	Go to step 11.
<b>11 CHECK “P” RANGE SWITCH.</b> 1) Shift the select lever to the “P” range. 2) Measure the resistance between “P” range switch connector terminals. <b>Terminals</b> <b>No. 2 — No. 1:</b>	Is the resistance less than 1 Ω?	Go to step 12.	Replace the “P” range switch.
<b>12 CHECK “P” RANGE SWITCH.</b> 1) Shift the select lever to other than “P” range. 2) Measure the resistance between “P” range switch connector terminals. <b>Terminals</b> <b>No. 2 — No. 1:</b>	Is the resistance 1 MΩ or more?	Go to step 13.	Replace the “P” range switch.
<b>13 CHECK BACKUP POWER SUPPLY CIRCUIT.</b> Inspect the backup power supply circuit. <Ref. to CS-14, BODY INTEGRATED UNIT POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, AT Shift Lock Control System.>	Is the backup power supply circuit operating properly?	Go to step 14.	Repair the backup power supply circuit.
<b>14 CHECK TEST MODE CONNECTOR.</b> 1) Check that the test mode connector is disconnected. 2) Measure the resistance between the body integrated unit and chassis ground. <b>Connector &amp; terminal</b> <b>(i84) No. 3 — Chassis ground:</b>	Is the resistance 1 MΩ or more?	Go to step 15.	Repair the short circuit of the harness between the body integrated unit and test mode connector.
<b>15 CHECK KEY LOCK SOLENOID.</b> 1) Disconnect the connector from the key lock solenoid. 2) Measure the resistance of key lock solenoid connector terminals. <b>Terminals</b> <b>No. 2 — No. 1:</b>	Is the resistance between 10 — 30 Ω?	Go to step 16.	Replace the key lock solenoid.
<b>16 CHECK OPERATION.</b> 1) Connect all connectors. 2) Operate the key lock solenoid.	Does the key lock solenoid operate normally?	A temporary poor contact of connector or harness may be the cause.	Check the body integrated unit.