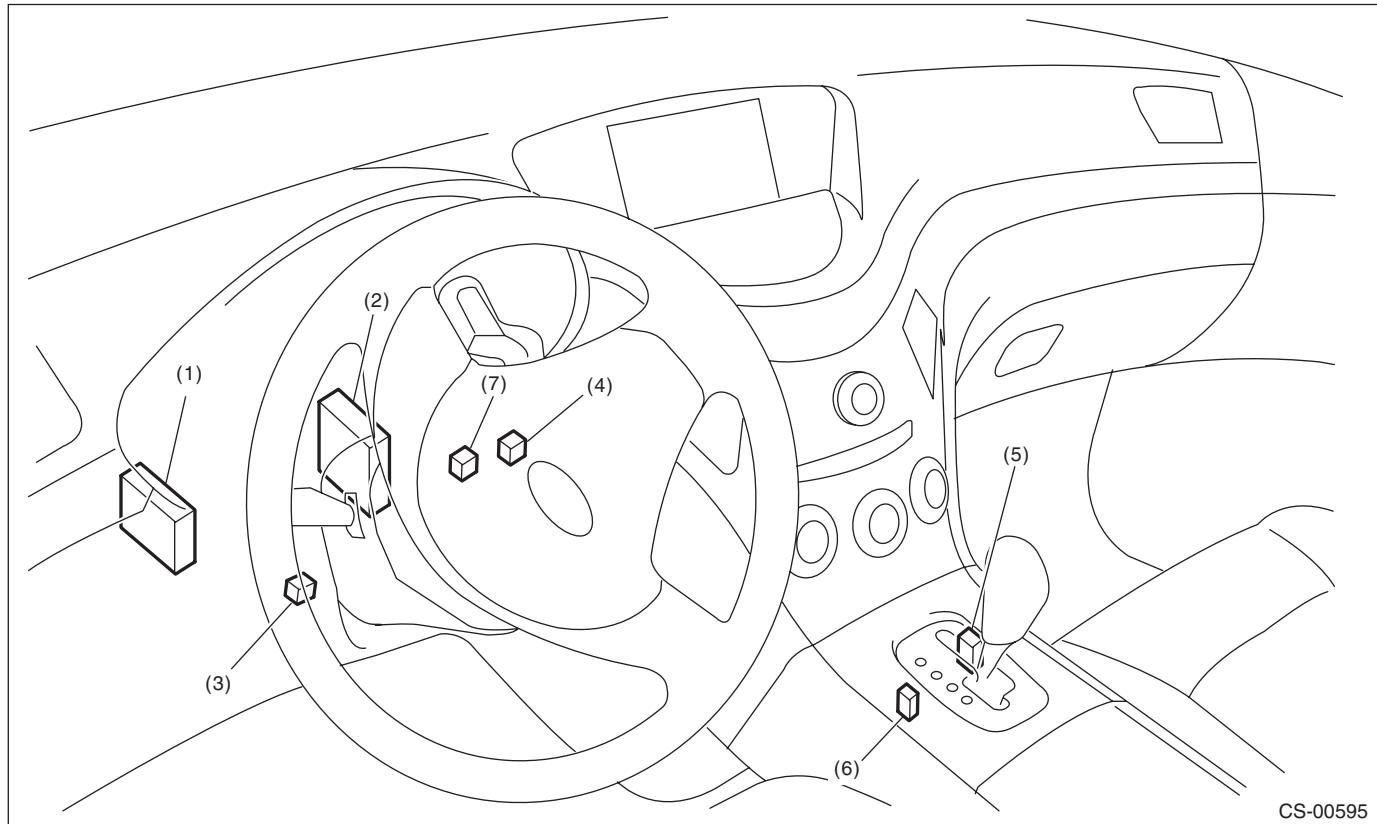


## 2. AT Shift Lock Control System

### A: LOCATION



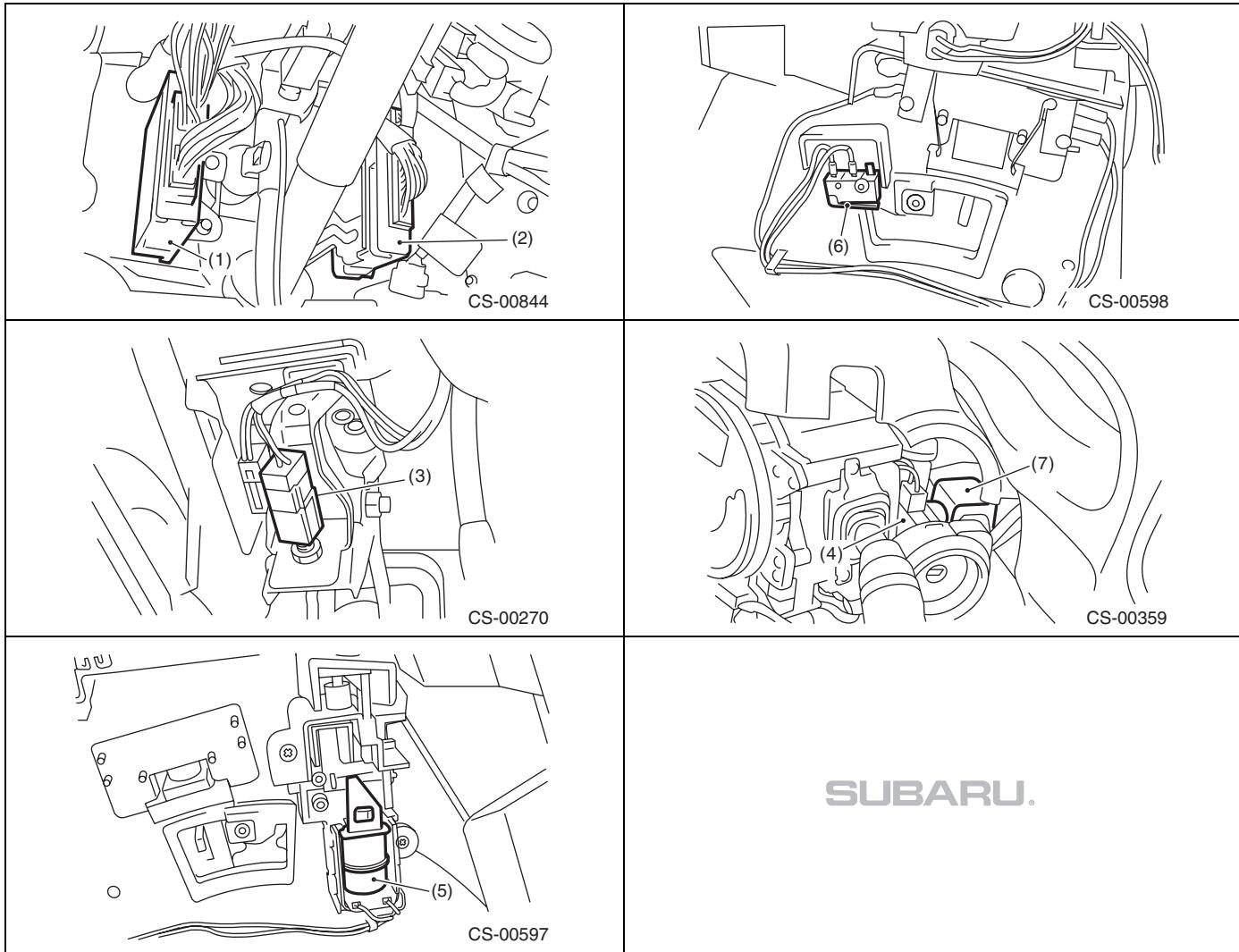
- (1) TCM ("P" range)
- (2) Body integrated unit
- (3) Stop light switch

- (4) Key cylinder (with built-in key warning switch)
- (5) Shift lock solenoid ASSY

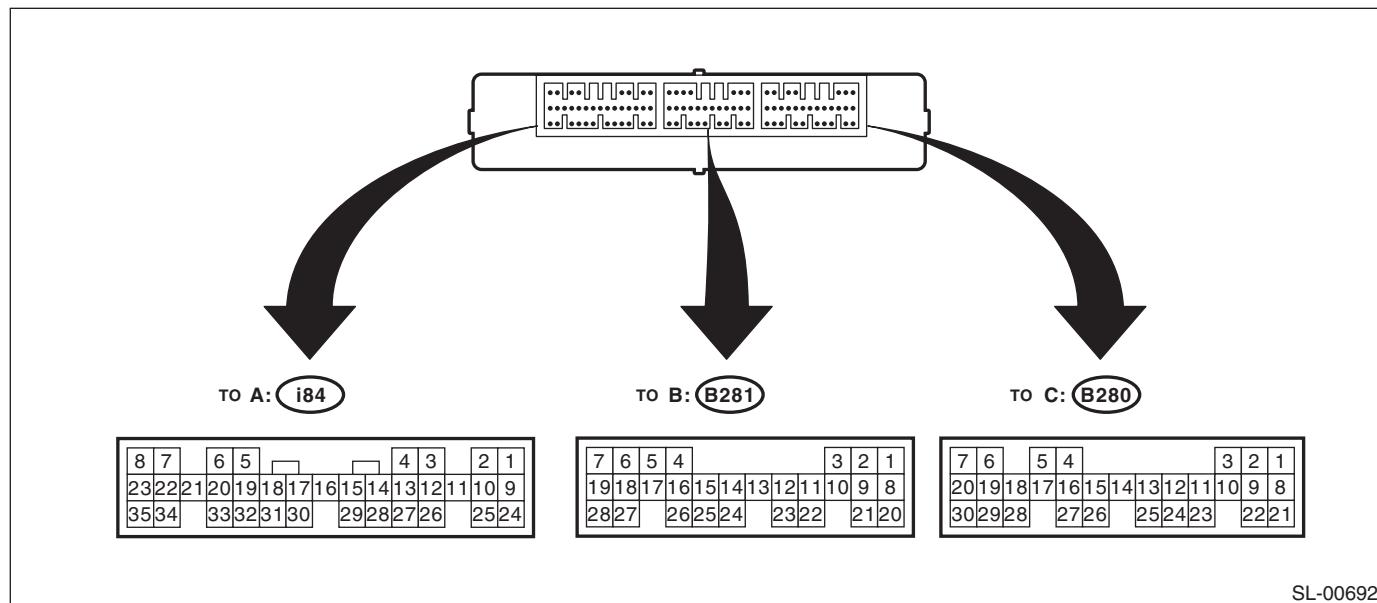
- (6) "P" range switch
- (7) Key lock solenoid

# AT Shift Lock Control System

## CONTROL SYSTEMS



## B: ELECTRICAL SPECIFICATION



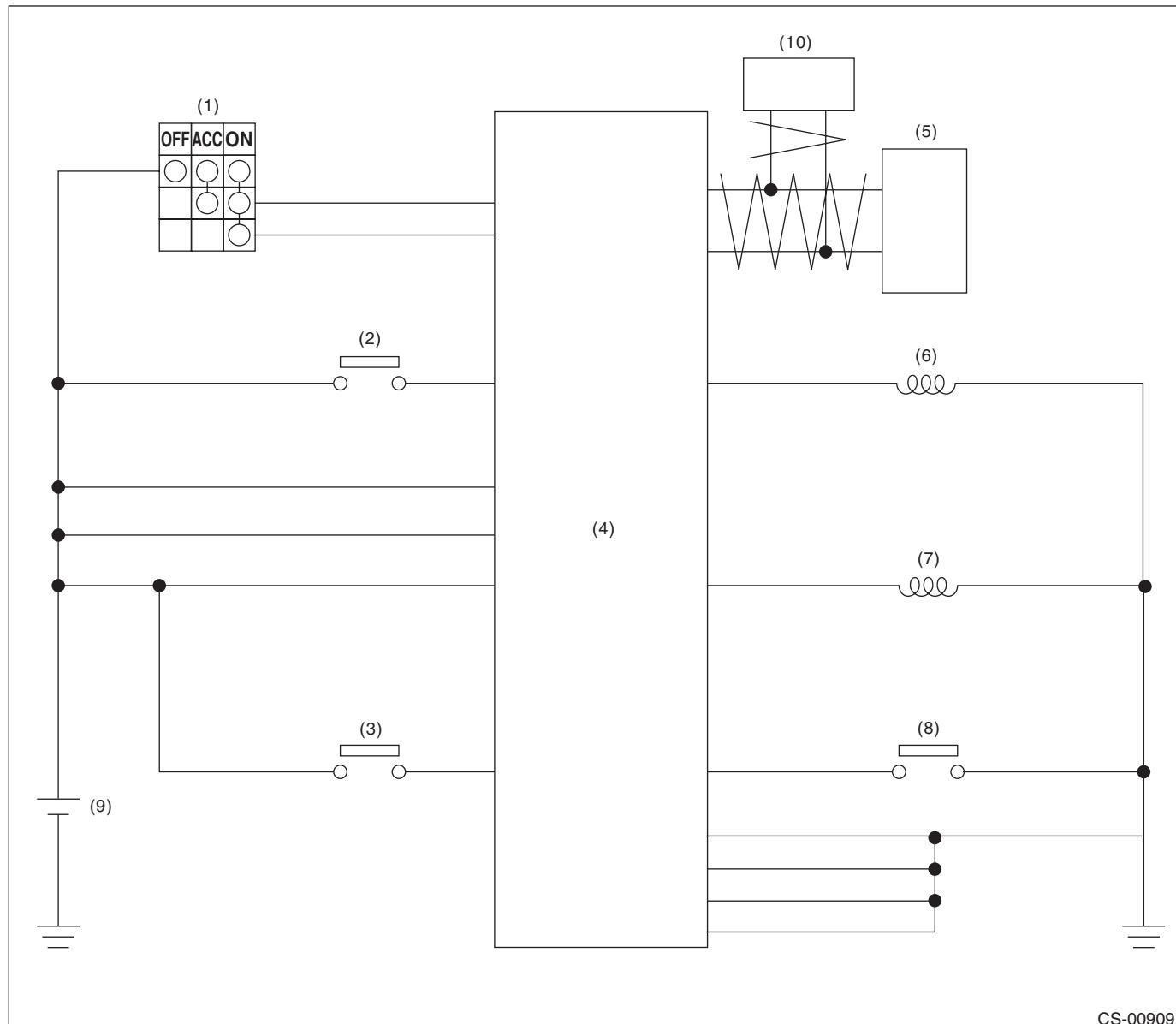
SL-00692

Item	To connector No.	Terminal No.	Input/Output signal	
			Measured value and measuring condition	
Battery power supply	B281	1	9 — 16 V	
		2		
	B280	7		
Ignition power supply	i84	1	10 — 15 V when ignition switch is at ON or START.	
ACC power supply	i84	24	10 — 15 V when ignition switch is at ACC.	
TCM ("P" range)	B280	20	Pulse signal	
	B280	30		
Stop light switch	B281	23	9 — 16 V when stop light switch is ON. 0 V when stop light switch is OFF.	
"P" range switch	B281	13	0 V when select lever is in "P" range. 9 — 16 V when select lever is in other positions than "P" range.	
Shift lock solenoid signal	B280	6	8.5 — 16 V when shift lock is released. 0 V when shift lock is operating.	
Key warning switch signal	B281	7	9 — 16 V when key is inserted. 0 V when key is removed.	
Key lock solenoid signal	B280	5	7.5 — 16 V when ignition switch is turned ON, with select lever in "P" range and brake switch ON. 0 V at other conditions than above.	
Ground	B280	22	—	
	i84	21		
	B281	8		
		9		

## AT Shift Lock Control System

## CONTROL SYSTEMS

## C: WIRING DIAGRAM



(1) Ignition switch	(5) TCM (shift range information)	(8) "P" range switch
(2) Stop light switch	(6) Key lock solenoid	(9) Battery
(3) Key warning switch	(7) Shift lock solenoid	(10) VDC (vehicle speed signal)
(4) Body integrated unit		

**D: INSPECTION****1. SHIFT LOCK OPERATION**

Step	Check	Yes	No
<b>1 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-13, SELECT LEVER CANNOT BE SHIFTED, INSPECTION, AT Shift Lock Control System.>	Go to step 2.
<b>2 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-15, SELECT LEVER CANNOT BE LOCKED, INSPECTION, AT Shift Lock Control System.>
<b>3 CHECK SHIFT LOCK.</b> Shift the select lever to "N" range.	While depressing the brake pedal with ignition switch OFF, is it possible to shift the select lever from "N" range to "R" range?	Go to step 4.	Inspect "SELECT LEVER SHIFT LOCK CANNOT BE RELEASED". <Ref. to CS-15, SELECT LEVER CANNOT BE LOCKED, INSPECTION, AT Shift Lock Control System.>
<b>4 CHECK KEY INTERLOCK.</b> Shift the select lever to the "P" range.	When the select lever is set to other than "P" range, can the ignition switch turned to the "LOCK" position?	Go to step 5.	Go to step 6.
<b>5 CHECK BACKUP POWER SUPPLY.</b> Inspect the backup power supply circuit. <Ref. to CS-11, 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 CANNOT BE LOCKED OR RELEASED". <Ref. to CS-17, KEY INTERLOCK DOES NOT LOCK OR RELEASE, INSPECTION, AT Shift Lock Control System.>	Repair the backup power supply circuit.

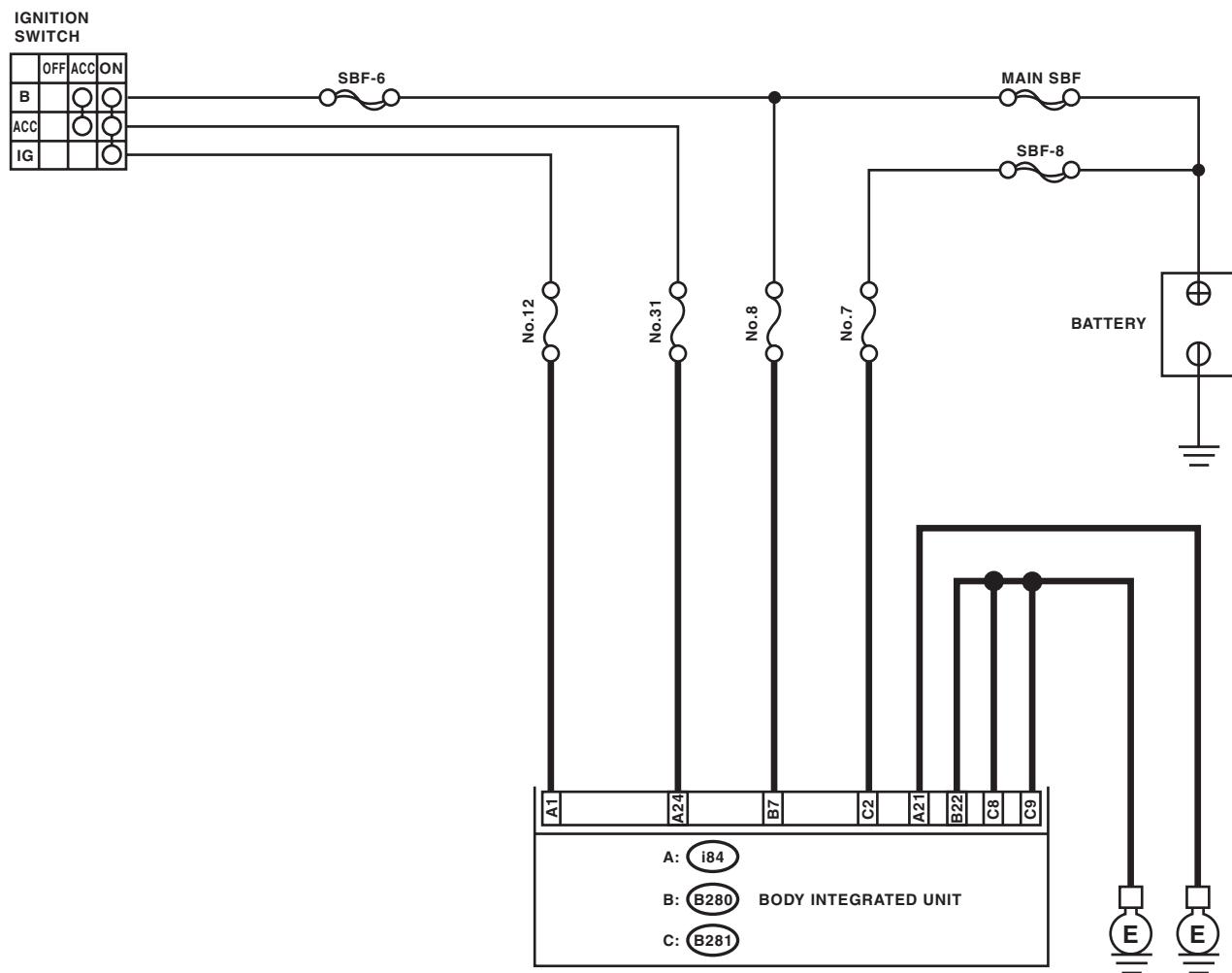
# AT Shift Lock Control System

## CONTROL SYSTEMS

---

Step	Check	Yes	No
6 <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 CAN-NOT BE LOCKED OR RELEASED". <Ref. to CS-17, KEY INTERLOCK DOES NOT LOCK OR RELEASE, INSPECTION, AT Shift Lock Control System.>

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



A: (184)

1 2	3 4		5 6	7 8
9 10 11	12 13 14	15 16	17 18 19 20	21 22 23
24 25	26 27 28 29	30 31 32 33	34 35	

B: (B280)

1 2 3		4 5	6 7
8 9 10	11 12 13	14 15 16 17	18 19 20
21 22	23 24 25	26 27	28 29 30

C: (B281)

1 2 3		4 5 6 7	
8 9 10 11	12 13 14	15 16 17 18 19	
20 21	22 23	24 25 26	27 28

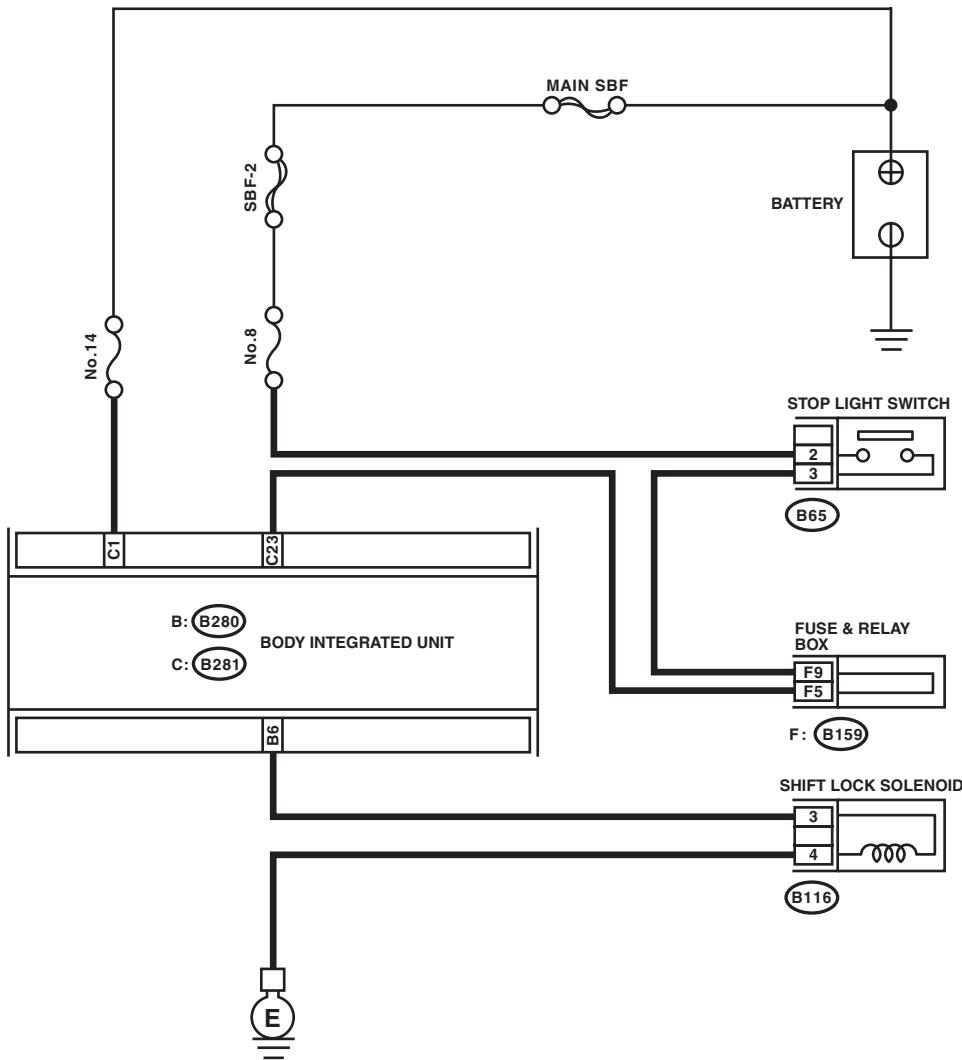
CS-00599

# AT Shift Lock Control System

## CONTROL SYSTEMS

Step	Check	Yes	No
<b>1 CHECK DTC OF BODY INTEGRATED UNIT.</b> Check DTC of the body integrated unit. <Ref. to LAN(diag)-28, OPERATION, Read Diagnostic Trouble Code (DTC).>	Is the DTC of power line displayed on body integrated unit?	Repair or replace it according to the DTC.	Go to step 2.
<b>2 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. <i>Connector &amp; terminal</i> <i>(i84) No. 21 — Chassis ground:</i> <i>(B280) No. 22 — Chassis ground:</i> <i>(B281) No. 8 — Chassis ground:</i> <i>(B281) No. 9 — 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.
<b>3 CHECK POOR CONTACT.</b>	Is there poor contact in the connector?	Repair the poor contact.	Check the body integrated unit.

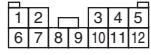
### 3. SELECT LEVER CANNOT BE SHIFTED



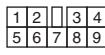
B65



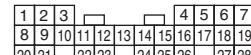
B116



F: B159



C: B281



B: B280



# AT Shift Lock Control System

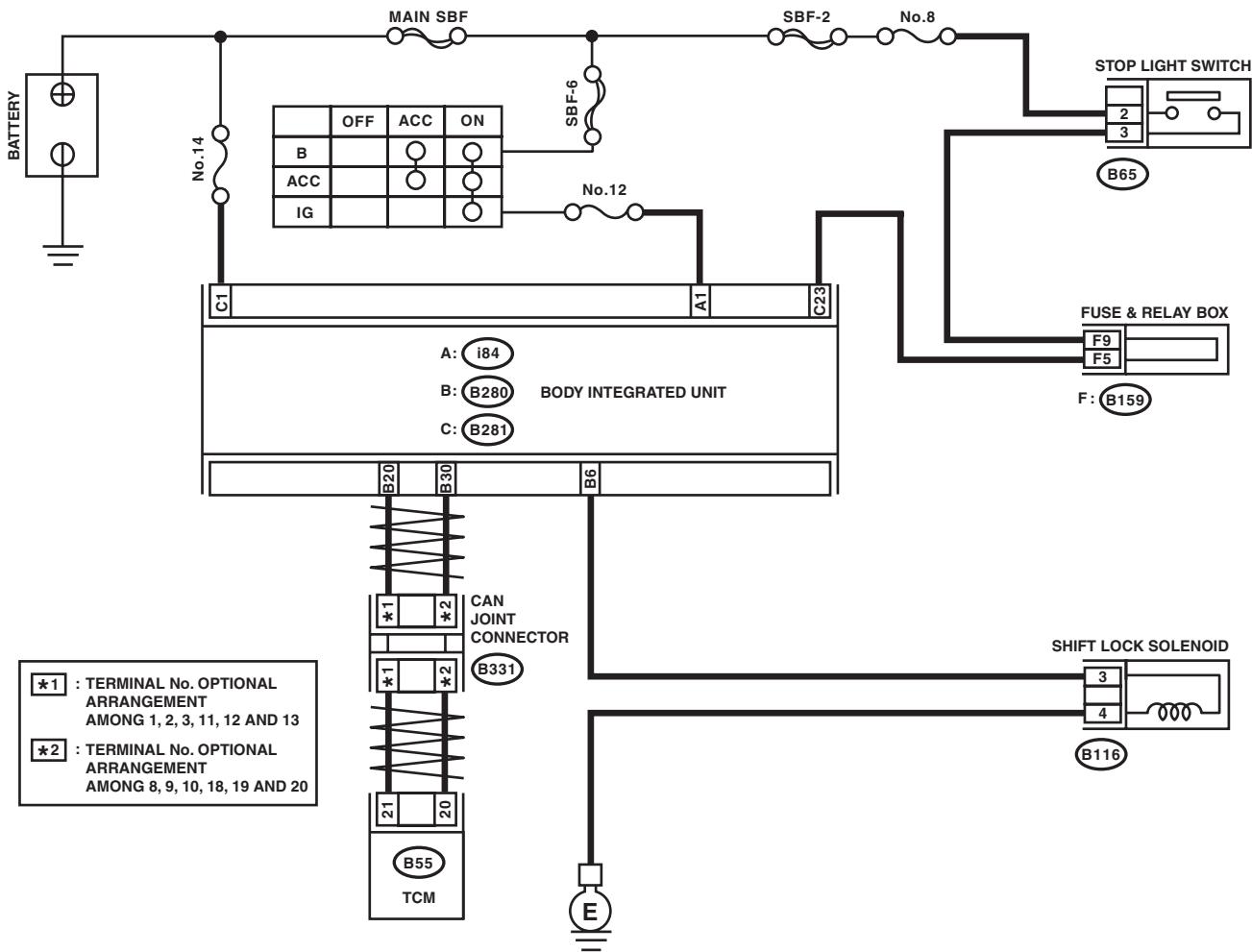
## CONTROL SYSTEMS

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 stop light switch from Subaru Select Monitor. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is "ON" displayed?	Go to step 2.	Go to step 3.
2 <b>CHECK DTC OF BODY INTEGRATED UNIT.</b> Check DTC of the body integrated unit. <Ref. to LAN(diag)-28, OPERATION, Read Diagnostic Trouble Code (DTC).>	Is DTC B0106 displayed?	Repair or replace it according to the DTC.	Go to step 6.
3 <b>CHECK STOP LIGHT SWITCH.</b> Depress the brake pedal.	Does the stop light illuminate?	Go to step 4.	Check the stop light system.
4 <b>CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND BODY INTEGRATED UNIT.</b> 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. <b>Connector &amp; terminal</b> <b>(B65) No. 3 — (B281) No. 23:</b>	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 5.
5 <b>CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND BODY INTEGRATED UNIT.</b> Measure the resistance of harness between stop light switch and chassis ground. <b>Connector &amp; terminal</b> <b>(B65) No. 3 — Chassis ground:</b>	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 7.
6 <b>CHECK SHIFT LOCK SOLENOID.</b> 1) Disconnect the connector of shift lock solenoid. 2) Connect the battery to connector terminal of shift lock solenoid, and operate the solenoid. <b>Terminals</b> <b>No. 3 (+) — No. 4 (-):</b>	Is the shift lock solenoid operating properly?	Go to step 7.	Replace the shift lock solenoid.
7 <b>CHECK SHIFT LOCK OPERATION.</b> 1) Connect all connectors. 2) Shift the select lever to the "P" range. 3) Shift the select lever from "P" range to "R" range.	Can the select lever shift from "P" range to "R" range?	Check the body integrated unit.	A temporary poor contact of connector or harness may be the cause.

# AT Shift Lock Control System

CONTROL SYSTEMS

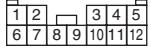
## 4. SELECT LEVER CANNOT BE LOCKED



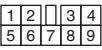
B65



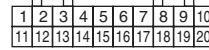
B116



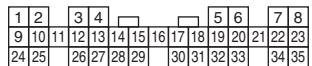
F: B159



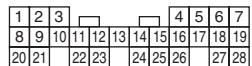
B331



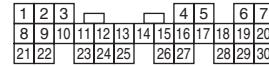
A: B184



C: B281



B: B280



CS-00969

# AT Shift Lock Control System

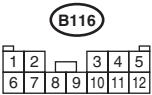
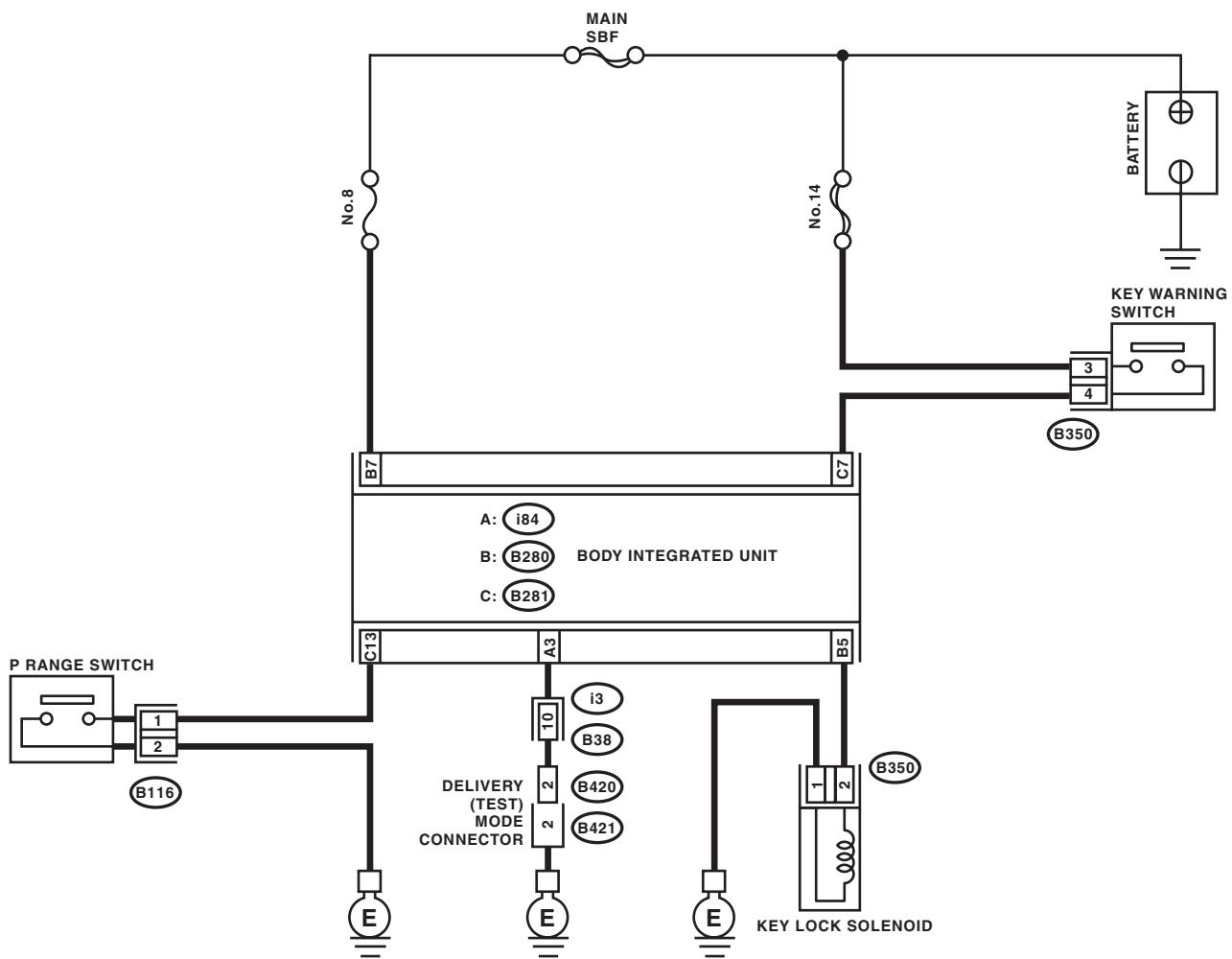
## CONTROL SYSTEMS

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) 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 2.	Check the TCM and body integrated unit.
2 <b>CHECK INPUT 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 "ON" displayed when the brake pedal is depressed and displayed "OFF" when not depressed?	Go to step 5.	Go to step 3.
3 <b>CHECK STOP LIGHT SWITCH.</b> Depress the brake pedal.	Does the stop light illuminate?	Go to step 4.	Check the stop light system.
4 <b>CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND BODY INTEGRATED UNIT.</b> 1) Depress the brake pedal. 2) Measure the voltage between body integrated unit and chassis ground. <i>Connector &amp; terminal</i> <i>(B281) No. 23 (+) — Chassis ground (-):</i>	Is the voltage 9 V or more?	Go to step 5.	Repair the open or short circuit of harness between the body integrated unit and stop light switch.
5 <b>CHECK DTC OF BODY INTEGRATED UNIT.</b> Check DTC of the body integrated unit. <Ref. to LAN(diag)-28, OPERATION, Read Diagnostic Trouble Code (DTC).>	Is DTC B0106 displayed?	Repair or replace it according to the DTC.	Go to step 6.
6 <b>CHECK SHIFT LOCK SOLENOID.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector of shift lock solenoid. 3) Connect the battery to connector terminal of shift lock solenoid, and operate the solenoid. <i>Terminals</i> <i>No. 3 (+) — No. 4 (-):</i>	Is the shift lock solenoid operating properly?	Go to step 7.	Replace the shift lock solenoid.
7 <b>CHECK OPERATION.</b> 1) Connect all connectors. 2) Turn the ignition switch to ON. (engine OFF) 3) Shift the select lever to the "P" range. 4) Depress the brake pedal. 5) Shift the select lever from "P" range to "R" range.	Can the select lever shift from "P" range to "R" range?	Go to step 8.	Check the body integrated unit.
8 <b>CHECK OPERATION.</b> 1) Shift the select lever to "N" range. 2) Depress the brake pedal. 3) Shift the select lever from "N" range to "R" range.	Can the select lever shift from "N" range to "R" range?	Go to step 9.	Check the body integrated unit.
9 <b>CHECK OPERATION.</b> 1) Turn the ignition switch to ACC. 2) Depress the brake pedal. 3) Turn the ignition switch to OFF. 4) Shift the select lever from "N" range to "R" range.	Can the select lever shift from "N" range to "R" range for certain amount of time after turning the ignition switch to OFF?	A temporary poor contact of connector or harness may be the cause.	Check the body integrated unit.

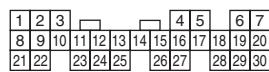
# AT Shift Lock Control System

CONTROL SYSTEMS

## 5. KEY INTERLOCK DOES NOT LOCK OR RELEASE



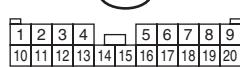
B: B280



C: B281



B38



A: i84



CS-00847

# AT Shift Lock Control System

## CONTROL SYSTEMS

Step	Check	Yes	No
<b>1 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) 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.
<b>2 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.
<b>3 CHECK DTC OF BODY INTEGRATED UNIT.</b> Check DTC of the body integrated unit. <Ref. to LAN(diag)-28, OPERATION, Read Diagnostic Trouble Code (DTC).>	Is DTC B0105 displayed?	Repair or replace it according to the DTC.	Check the body integrated unit.
<b>4 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. <i>Connector &amp; terminal (B350) No. 3 (+) — Chassis ground (-):</i>	Is the voltage 9 — 16 V?	Go to step 5.	Repair the open or short circuit of harness between battery and key warning switch.
<b>5 CHECK KEY WARNING SWITCH.</b> Measure the resistance between connector terminals of key warning switch. <i>Terminals No. 3 — No. 4:</i>	Is the resistance 1 MΩ or more?	Replace the key warning switch.	Go to step 6.
<b>6 CHECK KEY WARNING SWITCH.</b> 1) Remove the key. 2) Measure the resistance between connector terminals of key warning switch. <i>Terminals No. 3 — No. 4:</i>	Is the resistance 1 MΩ or more?	Go to step 7.	Replace the key warning switch.
<b>7 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. <i>Connector &amp; terminal (B281) No. 7 (+) — Chassis ground (-):</i>	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.
<b>8 CHECK HARNESS BETWEEN "P" RANGE SWITCH AND CHASSIS GROUND.</b> Measure the resistance of harness between "P" range switch and chassis ground. <i>Connector &amp; terminal (B116) No. 1 — Chassis ground:</i>	Is the resistance less than 1 Ω?	Go to step 9.	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
9 <b>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.  <i>Connector &amp; terminal</i> <i>(B116) No. 1 — (B281) No. 13:</i>	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.
10 <b>CHECK HARNESS BETWEEN "P" RANGE SWITCH AND CHASSIS GROUND.</b> Measure the resistance of harness between "P" range switch and chassis ground.  <i>Connector &amp; terminal</i> <i>(B116) No. 2 — 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 11.
11 <b>CHECK "P" RANGE SWITCH.</b> 1) Shift the select lever to the "P" range. 2) Measure the resistance between "P" range switch connector terminals.  <i>Terminals</i> <i>No. 2 — No. 1:</i>	Is the resistance less than 1 Ω?	Go to step 12.	Replace the "P" range switch.
12 <b>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.  <i>Terminals</i> <i>No. 2 — No. 1:</i>	Is the resistance 1 MΩ or more?	Go to step 13.	Replace the "P" range switch.
13 <b>CHECK OPERATION.</b> Inspect the backup power supply circuit. <Ref. to CS-11, 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.	Check the body integrated unit.
14 <b>CHECK DELIVERY (TEST) MODE CONNECTOR.</b> 1) Check that the delivery (test) mode connector is disconnected. 2) Measure the resistance between body integrated unit and chassis ground.  <i>Connector &amp; terminal</i> <i>(i84) No. 3 — Chassis ground:</i>	Is the resistance 1 MΩ or more?	Go to step 15.	Repair the short circuit in harness between body integrated unit and delivery (test) mode connector.
15 <b>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.