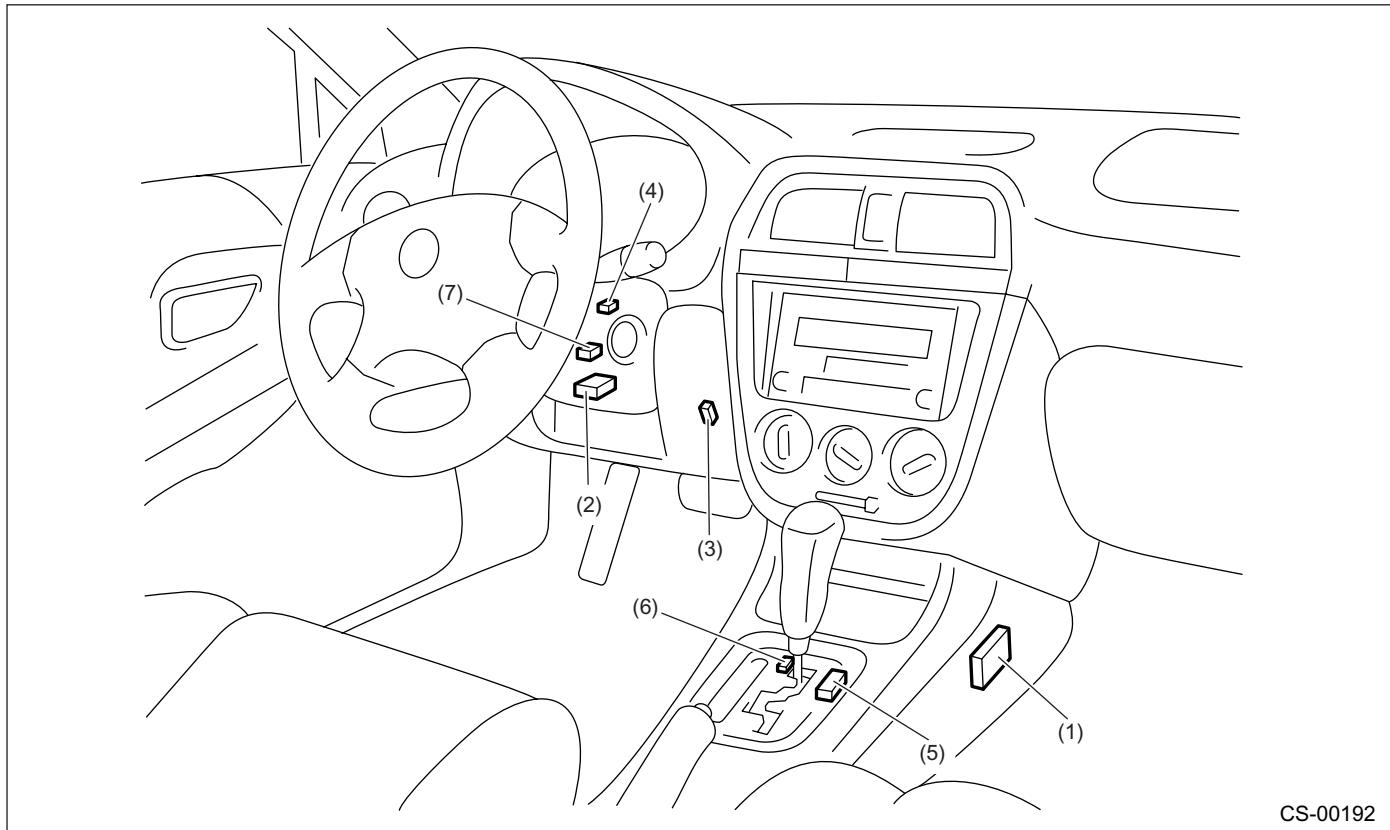


# AT SHIFT LOCK SYSTEM

## CONTROL SYSTEMS

### 2. AT Shift Lock System

#### A: LOCATION



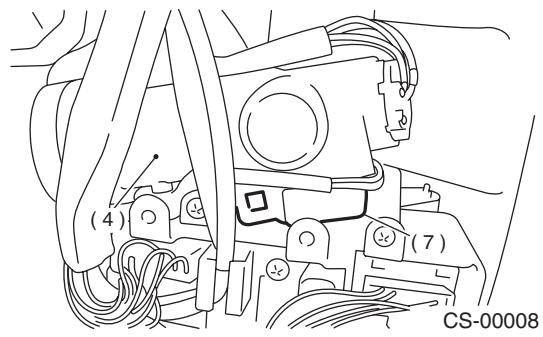
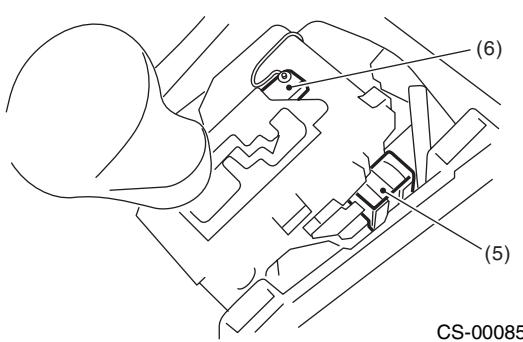
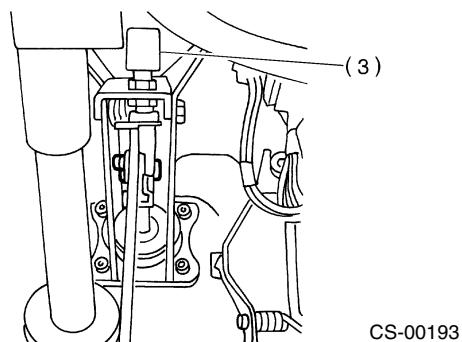
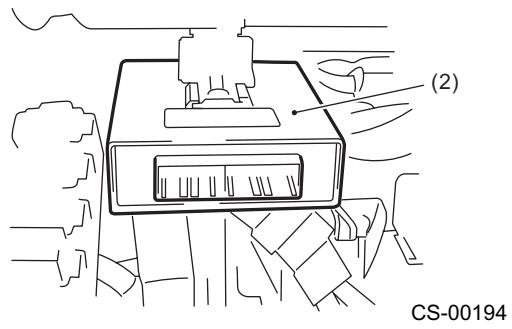
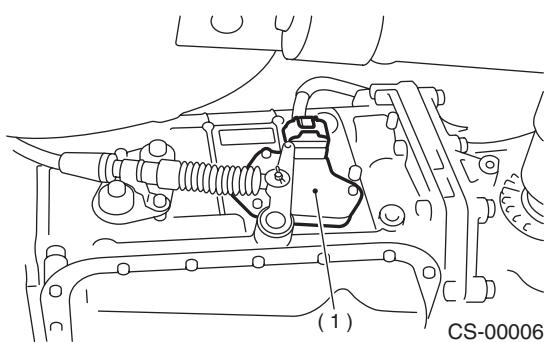
- (1) Inhibitor switch
- (2) Integrated module
- (3) Stop light switch

- (4) Key warning switch
- (5) Shift lock solenoid
- (6) "P" position switch

- (7) Key lock solenoid

# AT SHIFT LOCK SYSTEM

## CONTROL SYSTEMS



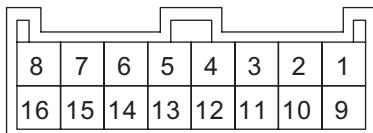
**SUBARU.**

# AT SHIFT LOCK SYSTEM

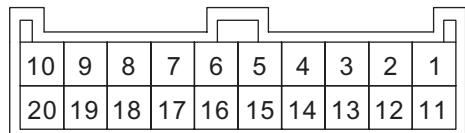
## CONTROL SYSTEMS

### B: ELECTRICAL SPECIFICATION

To B: **B281**



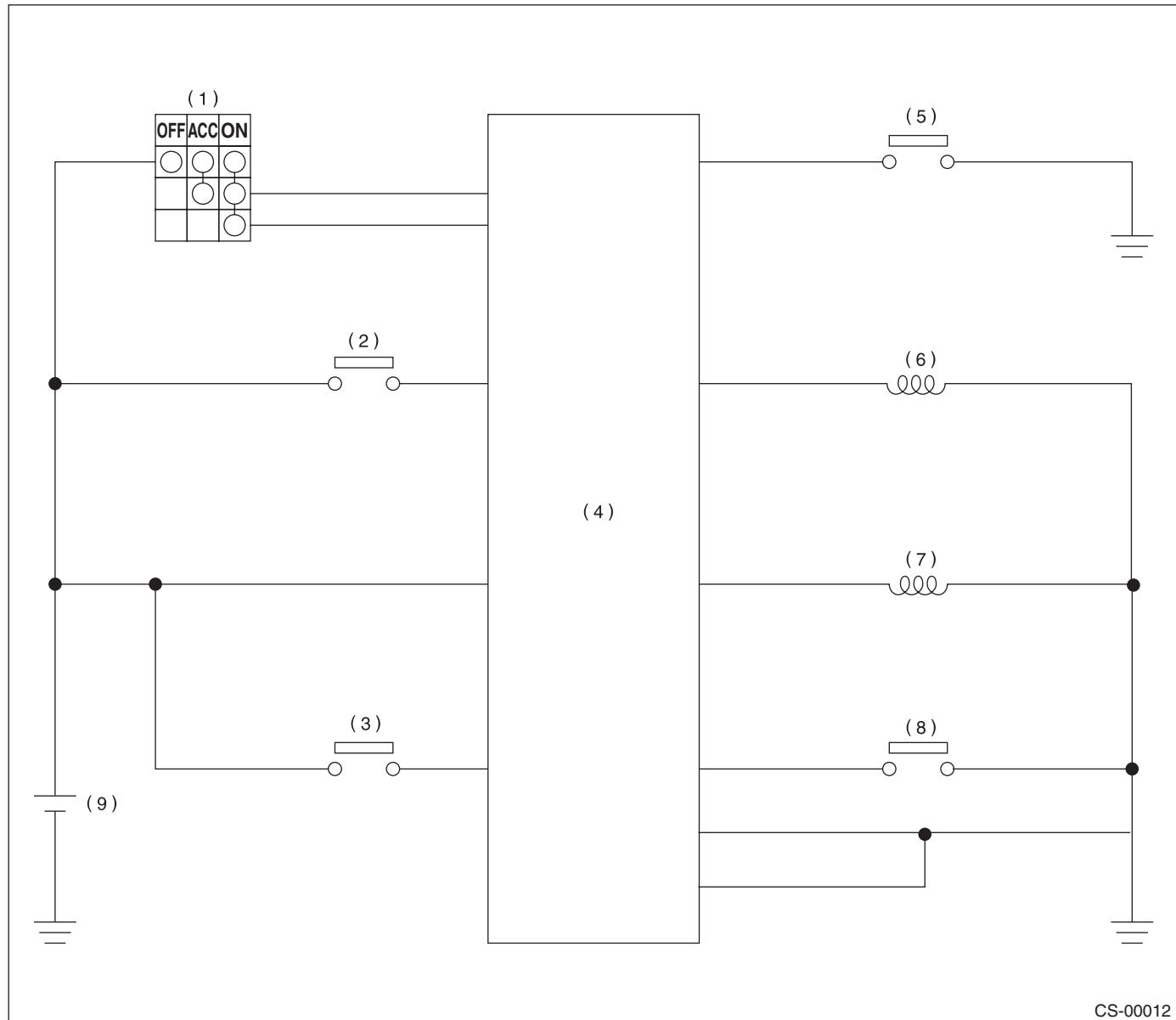
To A: **B280**



CS-00195

Contents	Connector No.	Terminal No.	Input/Output signal	
			Measured value and measuring conditions	
Battery power supply	B281	2	9 — 16 V	
Ignition power supply	B280	19	10 — 15 V when ignition switch is at ON or START.	
Ignition power supply	B280	10	10 — 15 V when ignition switch is at ACC.	
Inhibitor Switch ("P" position)	B280	5	0 V when select lever is in "P" position. 9 — 16 V when select lever is in other positions than "P" position.	
Stop light switch	B280	9	9 — 16 V when stop light switch is ON. 0 V when stop light switch is OFF.	
"P" position switch	B280	6	0 V when select lever is in "P" position. 9 — 16 V when select lever is in other positions than "P" position.	
Shift lock solenoid signal	B281	9	8.5 — 16 V when shift lock is released. 0 V when shift lock is operating.	
Key warning switch signal	B280	20	9 — 16 V when key is inserted. 0 V when key is removed.	
Key lock solenoid signal	B281	3	7.5 — 16 V when turning ignition switch to ON, select lever is in "P" position and brake switch is ON. 0 V at other conditions than above.	
Ground	B281	4	—	
Ground	B281	13	—	

## C: SCHEMATIC



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

- (4) Integrated module
- (5) Inhibitor switch
- (6) Key lock solenoid

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

# AT SHIFT LOCK SYSTEM

## CONTROL SYSTEMS

### D: INSPECTION

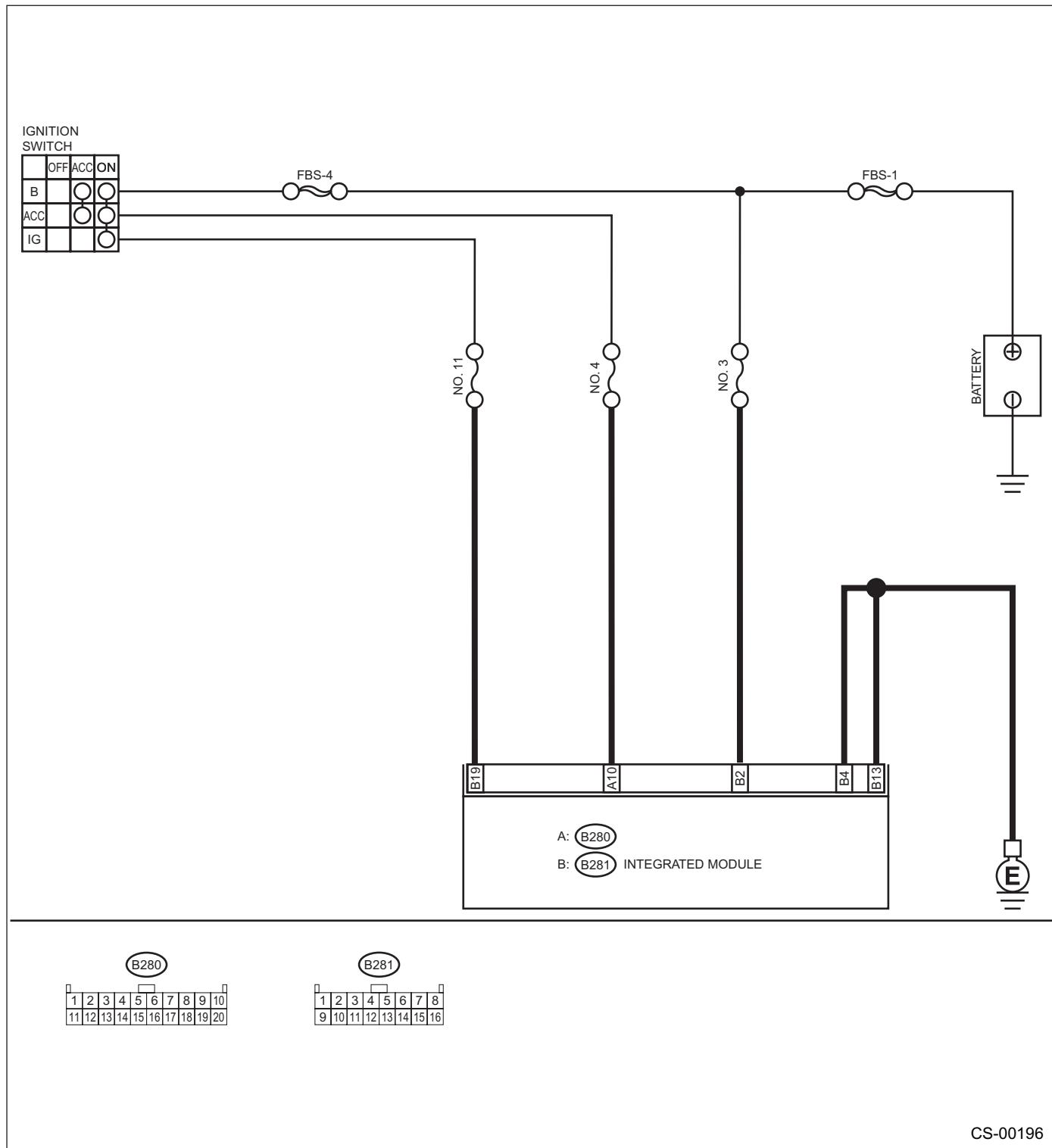
Step	Check	Yes	No
<b>1 CHECK SHIFT LOCK.</b> 1) Turn the ignition switch ON. 2) Move the select lever to "P" position. While brake pedal is depressed, can select lever move from "P" range to other positions?	The select lever can be moved.	Go to step 2.	Inspect "SELECT LEVER SHIFT LOCK CANNOT BE RELEASED". <Ref. to CS-18, SELECT LEVER SHIFT LOCK CANNOT BE RELEASED, INSPECTION, AT Shift Lock System. >
<b>2 CHECK SHIFT LOCK.</b> While brake pedal is not depressed, can select lever move from "P" range to other positions?	The select lever can be moved.	Inspect "SELECT LEVER CANNOT BE SHIFT LOCKED". <Ref. to CS-14, SELECT LEVER CANNOT BE SHIFT LOCKED, INSPECTION, AT Shift Lock System. >	Go to step 3.
<b>3 CHECK KEY INTERLOCK.</b> When select lever is in other than "P" position, does ignition switch turn to "LOCK" position?	The switch can be turned.	Inspect "KEY INTERLOCK DOES NOT BE LOCKED OR RELEASED". <Ref. to CS-22, KEY INTERLOCK DOES NOT LOCK OR RELEASE, INSPECTION, AT Shift Lock System. >	Go to step 4.
<b>4 CHECK KEY INTERLOCK.</b> When select lever is in "P" position, does ignition switch turn to "LOCK" position?	The switch can be turned.	AT shift lock system is normal.	Inspect "KEY INTERLOCK DOES NOT BE LOCKED OR RELEASED". <Ref. to CS-22, KEY INTERLOCK DOES NOT LOCK OR RELEASE, INSPECTION, AT Shift Lock System. >



## AT SHIFT LOCK SYSTEM

## CONTROL SYSTEMS

## 1. INTEGRATED MODULE POWER SUPPLY AND GROUND LINE WIRING DIAGRAM:



# AT SHIFT LOCK SYSTEM

## CONTROL SYSTEMS

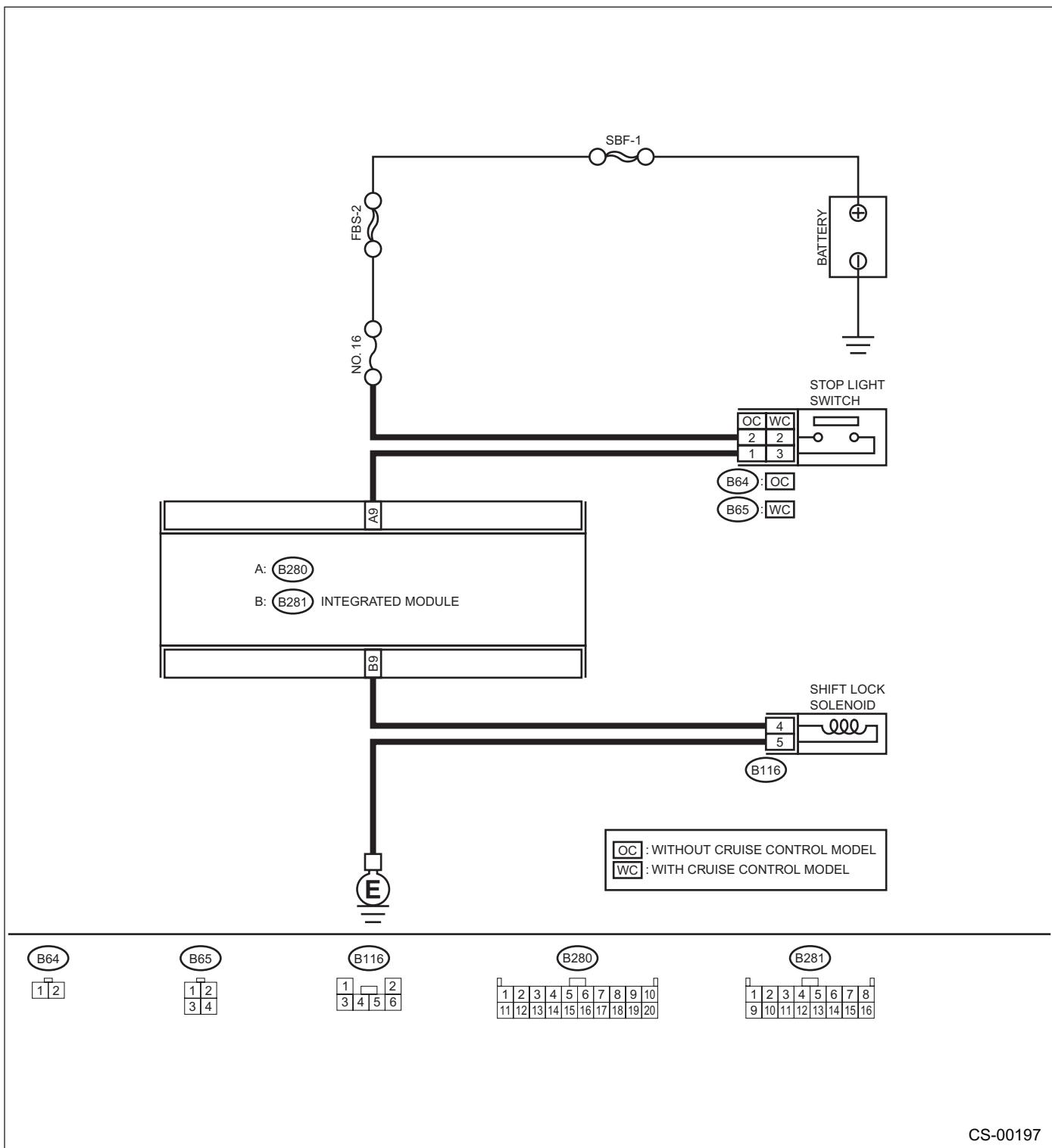
Step	Check	Yes	No
1	<b>CHECK FUSE (No. 3, 4 and 11).</b> Remove the fuse (No. 3, 4 and 11). Is the fuse (No. 3, 4 or 11) blown out?	The fuse is blown out.	Replace the fuse (No. 3, 4 or 11). If the replaced fuse (No. 3, 4 or 11) has blown out easily, repair short circuit in harness between fuse and integrated module.  Go to step 2.
2	<b>CHECK HARNESS CONNECTOR BETWEEN INTEGRATED MODULE AND BODY GROUND.</b> 1) Turn the ignition switch to OFF. 2) Measure the resistance of harness between integrated module and chassis ground.  <i>Connector &amp; terminal</i> <b>(B281) No. 4 — Chassis ground:</b> <b>(B281) No. 13 — Chassis ground:</b>  Is the measured value less than the specified value?	$1\ \Omega$	Go to step 3.  Repair open circuit in harness between integrated module and body ground.
3	<b>CHECK BATTERY POWER SUPPLY.</b> 1) Turn the ignition switch to ON (engine OFF). 2) Measure the voltages between integrated module and chassis ground.  <i>Connector &amp; terminal</i> <b>(B281) No. 1 (+) — Chassis ground (-):</b>  Is the measured value more than the specified value?	9 V	Go to step 4.  Repair open circuit harness between battery and integrated module, and poor contact in coupling connector.
4	<b>CHECK IGNITION POWER SUPPLY CIRCUIT.</b> 1) Turn the ignition switch to ACC. 2) Measure the voltage between integrated module and chassis ground.  <i>Connector &amp; terminal</i> <b>(B280) No. 10 (+) — Chassis ground (-):</b>  Is the measured value more than the specified value?	9 V	Go to step 5.  Repair open circuit harness between battery and integrated module, and poor contact in coupling connector.
5	<b>CHECK IGNITION POWER SUPPLY CIRCUIT.</b> 1) Turn the ignition switch to ON (engine OFF). 2) Measure the voltage between integrated module and chassis ground.  <i>Connector &amp; terminal</i> <b>(B281) No. 19 (+) — Chassis ground (-):</b>  Is the measured value more than the specified value?	9 V	Go to step 6.  Repair open circuit harness between battery and integrated module, and poor contact in coupling connector.
6	<b>CHECK POOR CONTACT.</b> Is there poor contact in power supply and ground line circuit?	There is a poor contact.	Repair poor contact.  Replace the integrated module.

## AT SHIFT LOCK SYSTEM

## CONTROL SYSTEMS

## 2. SELECT LEVER CANNOT BE SHIFT LOCKED

## WIRING DIAGRAM:



# AT SHIFT LOCK SYSTEM

## CONTROL SYSTEMS

Step	Check	Yes	No
1 <b>CHECK STOP LIGHT SWITCH.</b> Depress the brake pedal. Does the stop light turn ON?	The select lever can be moved.	Go to step 2.	Inspect the stop light system.
2 <b>CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND INTEGRATED MODULE.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the integrated and stoplight switch connector. 3) Measure the resistance of harness between stop light switch and integrated module.  <i>Connector &amp; terminal</i> <i>Without cruise control model</i> <i>(B64) No. 1 — (B280) No. 9:</i> <i>Without cruise control model</i> <i>(B65) No. 3 — (B280) No. 9:</i>  Is the measured value more than the specified value?	1 MΩ	Repair open circuit in harness between integrated module and stop light switch.	Go to step 3.
3 <b>CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND INTEGRATED MODULE.</b> Measure the resistance of harness between stop light switch and chassis ground.  <i>Connector &amp; terminal</i> <i>Without cruise control model</i> <i>(B64) No. 1 — Chassis ground:</i> <i>Without cruise control model</i> <i>(B65) No. 3 — Chassis ground:</i>  Is the measured value less than the specified value?	1 Ω	Repair short circuit in harness between integrated module and stop light switch.	Go to step 4.
4 <b>CHECK HARNESS BETWEEN INTEGRATED MODULE AND SHIFT LOCK SOLENOID.</b> 1) Disconnect the shift lock solenoid connector. 2) Measure the resistance of harness between integrated module and shift lock solenoid.  <i>Connector &amp; terminal</i> <i>(B116) No. 4 — (B281) No. 9:</i>  Is the measured value more than the specified value?	1 MΩ	Repair open circuit in harness between integrated module and shift lock solenoid.	Go to step 5.
5 <b>CHECK HARNESS BETWEEN INTEGRATED MODULE AND SHIFT LOCK SOLENOID.</b> Measure the resistance of harness between shift lock solenoid and chassis ground.  <i>Connector &amp; terminal</i> <i>(B116) No. 4 — Chassis ground:</i>  Is the measured value less than the specified value?	1 Ω	Repair short circuit in harness between integrated module and shift lock solenoid.	Go to step 6.
6 <b>CHECK HARNESS BETWEEN SHIFT LOCK SOLENOID AND CHASSIS GROUND.</b> Measure the resistance of harness between shift lock solenoid and chassis ground.  <i>Connector &amp; terminal</i> <i>(B116) No. 5 — Chassis ground:</i>  Is the measured value more than the specified value?	1 MΩ	Repair open circuit in harness between shift lock solenoid and body ground.	Go to step 7.

# AT SHIFT LOCK SYSTEM

## CONTROL SYSTEMS

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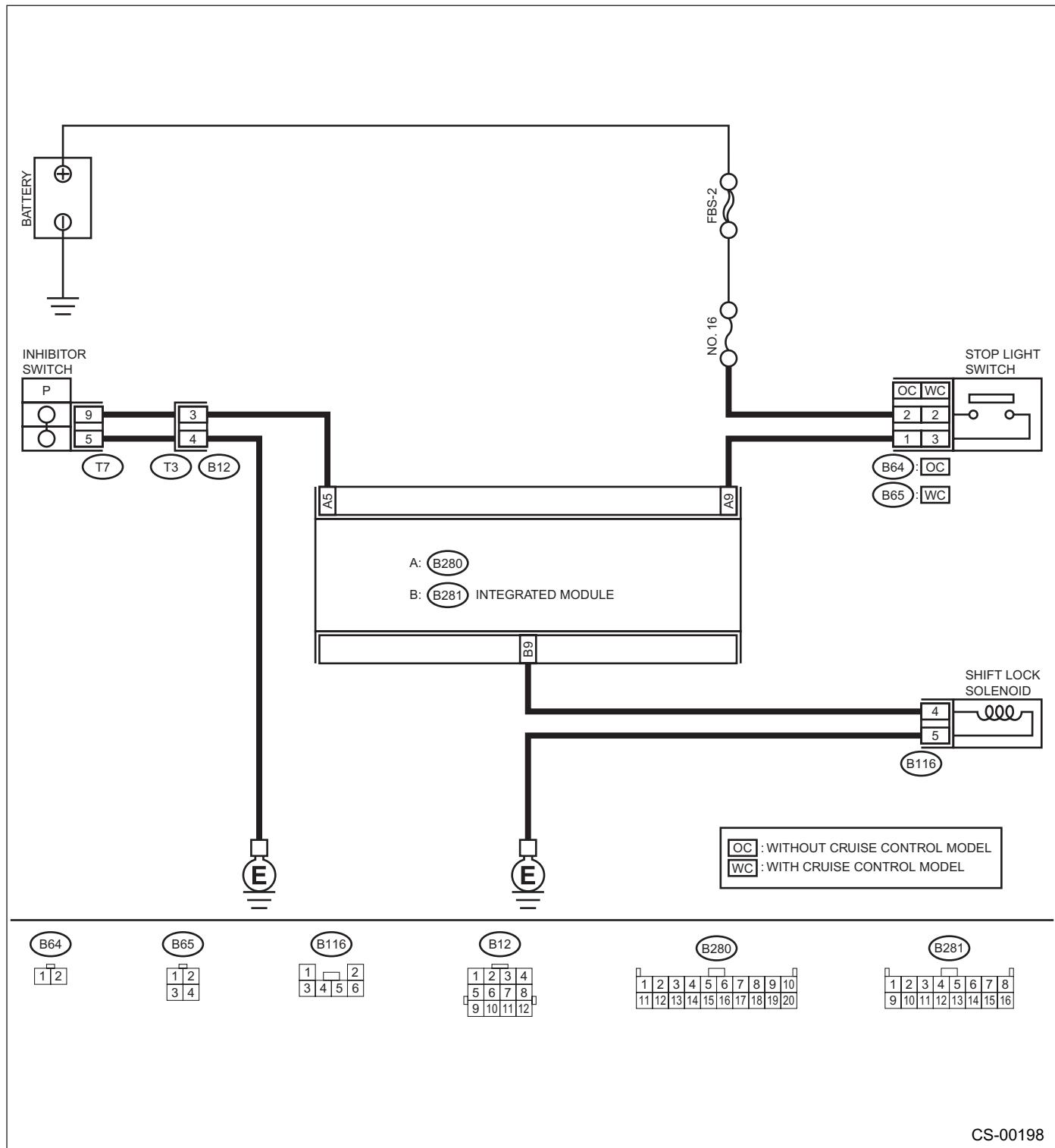
Step	Check	Yes	No
<b>7</b> <b>CHECK SHIFT LOCK SOLENOID.</b> Measure the resistance of shift lock solenoid connector terminals. <i>Terminal</i> <b>No. 4 — No. 5:</b> Is the measured value within the specified range?	Between 10 and 20 $\Omega$	Go to step <b>8</b> .	Replace the shift lock solenoid.
<b>8</b> <b>CHECK SHIFT LOCK SOLENOID.</b> Connect the battery with shift lock solenoid connector terminal and operate solenoid. <i>Terminal</i> <b>No. 4 (+) — No. 5 (-):</b> Does the shift lock solenoid operate properly?	The shift lock solenoid operates properly.	Go to step <b>9</b> .	Replace the shift lock solenoid.
<b>9</b> <b>CHECK POOR CONTACT.</b> Is there poor contact in key lock circuit?	There is a poor contact.	Repair poor contact.	Replace the integrated module.



## AT SHIFT LOCK SYSTEM

## CONTROL SYSTEMS

### **3. SELECT LEVER SHIFT LOCK CANNOT BE RELEASED WIRING DIAGRAM:**



# AT SHIFT LOCK SYSTEM

## CONTROL SYSTEMS

Step	Check	Yes	No
1 <b>CHECK INHIBITOR SWITCH.</b> 1)Turn the ignition switch to ON (engine OFF). 2)Move the select lever from "P" to "1" range. Combination meter indicator lamp and select lever "P", "R", "N", "3", "2" and "1" are correctly matched?	Correctly matched.	Go to step 2.	Adjust inhibitor switch and select cable.
2 <b>CHECK HARNESS BETWEEN INHIBITOR SWITCH AND INTEGRATED MODULE.</b> 1)Turn the ignition switch to OFF. 2)Disconnect the connector transmission harness and integrated module. 3)Measure the resistance of harness between integrated module and chassis ground.  <i>Connector &amp; terminal</i> <i>(B280) No. 5 — Chassis ground:</i> Is the measured value less than the specified value?	1 Ω	Repair short circuit in harness between integrated module and transmission connector.	Go to step 3.
3 <b>CHECK HARNESS BETWEEN INHIBITOR SWITCH AND INTEGRATED MODULE.</b> Measure the resistance of harness between integrated module and inhibitor switch.  <i>Connector &amp; terminal</i> <i>(B12) No. 3 — (B280) No. 5:</i> Is the measured value more than the specified value?	1 MΩ	Repair open circuit in harness between integrated module and transmission connector	Go to step 4.
4 <b>CHECK HARNESS BETWEEN INHIBITOR SWITCH AND CHASSIS GROUND.</b> Measure the resistance of harness between integrated module and chassis ground.  <i>Connector &amp; terminal</i> <i>(B12) No. 4 — Chassis ground:</i> Is the measured value less than the specified value?	1 Ω	Go to step 5.	Repair open circuit in harness between integrated module and chassis ground.
5 <b>CHECK INHIBITOR SWITCH.</b> 1)Move the select lever to "P" position. 2)Measure the resistance of transmission harness connector terminals.  <i>Connector &amp; terminal</i> <i>(T3) No. 3 — No. 4:</i> Is the measured value more than the specified value?	1 MΩ	Repair or replace inhibitor switch.	Go to step 6.
6 <b>CHECK OUTPUT SIGNAL FOR INTEGRATED MODULE.</b> 1)Connect all connectors. 2)Turn the ignition switch to ON. 3)Measure the voltage between integrated module and chassis ground.  <i>Connector &amp; terminal</i> <i>(B280) No. 5 (+) — Chassis ground (-):</i> Is the measured value within the specified range?	Between 9 and 16 V	Go to step 7.	Go to step 15.
7 <b>CHECK STOP LIGHT SWITCH.</b> Depress the brake pedal. Does the stop light turn on?	The stop light turns on.	Go to step 8.	Inspect stop light system.

# AT SHIFT LOCK SYSTEM

## CONTROL SYSTEMS

Step	Check	Yes	No
<b>8</b> <b>CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND AT SHIFT LOCK CONTROL MODULE.</b> 1)Depress the brake pedal. 2)Measure the voltage between integrated module and chassis ground. <b>Connector &amp; terminal</b> <b>(B280) No. 9 (+) — Chassis ground (-):</b> Is the measured value more than the specified value?	9 V	Go to step <b>9</b> .	Repair open or short circuit in harness between integrated module and stop light switch.
<b>9</b> <b>CHECK HARNESS BETWEEN INTEGRATED MODULE AND SHIFT LOCK SOLENOID.</b> 1)Turn the ignition switch to OFF. 2)Disconnect the connector from shift lock solenoid and integrated module. 3)Measure the resistance of harness between integrated module and shift lock solenoid. <b>Connector &amp; terminal</b> <b>(B281) No. 9 — (B116) No. 4:</b> Is the measured value more than the specified value?	1 MΩ	Repair open circuit in harness between integrated module and shift lock solenoid.	Go to step <b>10</b> .
<b>10</b> <b>CHECK HARNESS BETWEEN INTEGRATED MODULE AND SHIFT LOCK SOLENOID.</b> Measure the resistance of harness between shift lock solenoid and chassis ground. <b>Connector &amp; terminal</b> <b>(B281) No. 9 — Chassis ground:</b> Is the measured value less than the specified value?	10 Ω	Go to step <b>11</b> .	Repair short circuit in harness between integrated module and shift lock solenoid.
<b>11</b> <b>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>(B116) No. 5 — Chassis ground:</b> Is the measured value less than the specified value?	1 Ω	Go to step <b>12</b> .	Repair open circuit in harness between shift lock solenoid and chassis ground.
<b>12</b> <b>CHECK SHIFT LOCK SOLENOID.</b> Measure the resistance of shift lock solenoid connector terminals. <b>Terminal</b> <b>No. 4 — No. 5:</b> Is the measured value within the specified range?	Between 10 and 20 Ω	Go to step <b>13</b> .	Replace the shift lock solenoid.
<b>13</b> <b>CHECK SHIFT LOCK SOLENOID.</b> Connect the battery with shift lock solenoid connector terminal and operate solenoid. <b>Terminal</b> <b>No. 4 (+) — No. 5 (-):</b> Is shift lock solenoid operating properly?	The shift lock solenoid operates properly.	Go to step <b>14</b> .	Replace the shift lock solenoid.

# AT SHIFT LOCK SYSTEM

## CONTROL SYSTEMS

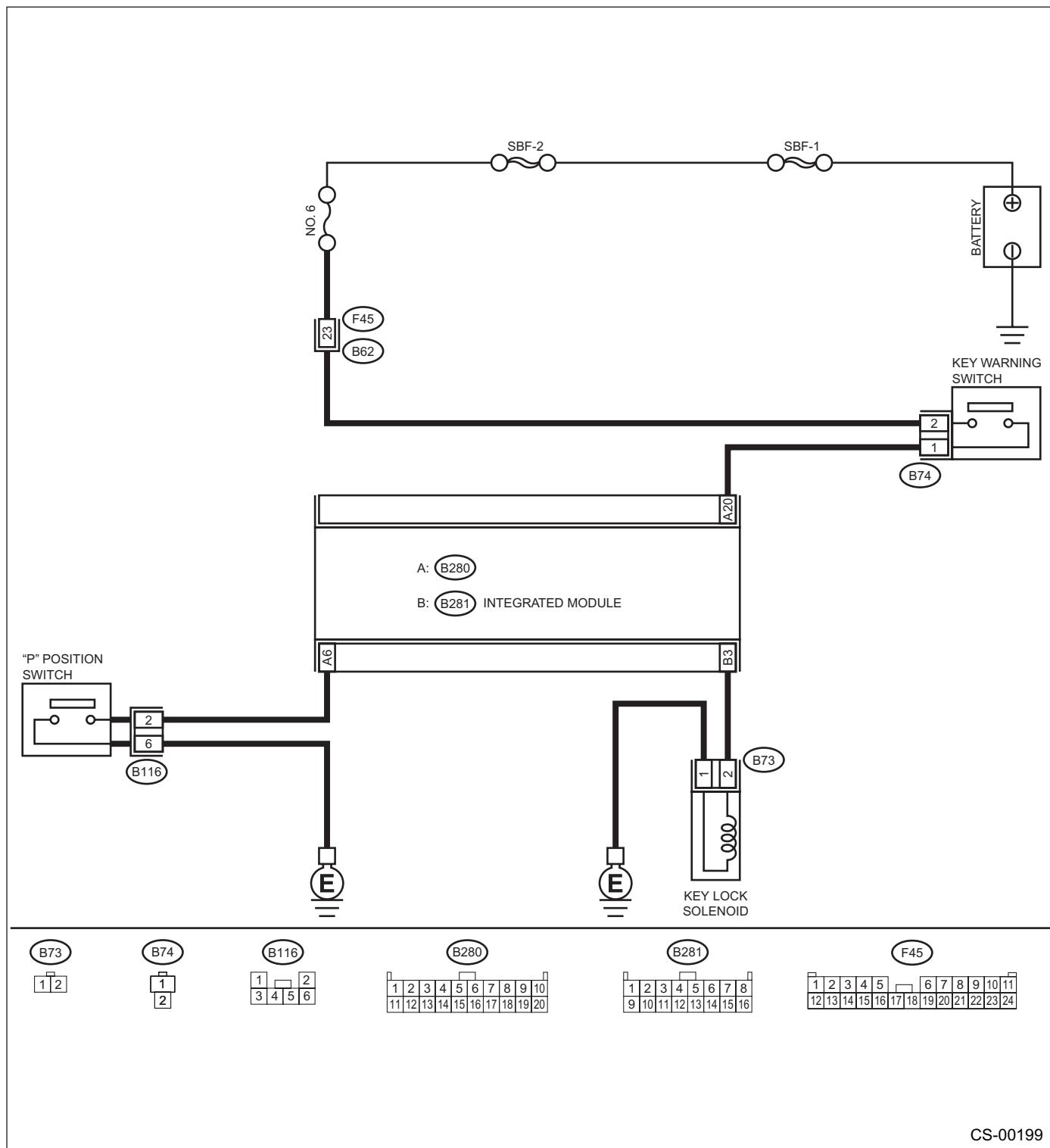
Step	Check	Yes	No
14 <b>CHECK OUTPUT SIGNAL FOR AT SHIFT LOCK CONTROL MODULE.</b> 1)Turn the ignition switch to ON (engine OFF). 2)Measure the voltage between integrated module and chassis ground. <i>Connector &amp; terminal</i> <i>(B281) No. 9 (+) — Chassis ground (-):</i> Is the measured value more than the specified value?	8.5 V	Go to step 15.	Replace the integrated module.
15 <b>CHECK POOR CONTACT.</b> Is there poor contact in key lock circuit?	There is a poor contact.	Repair poor contact.	Replace the integrated module.

# AT SHIFT LOCK SYSTEM

## CONTROL SYSTEMS

### 4. KEY INTERLOCK DOES NOT LOCK OR RELEASE

#### WIRING DIAGRAM:



CS-00199

# AT SHIFT LOCK SYSTEM

CONTROL SYSTEMS

Step	Check	Yes	No
<b>1 CHECK HARNESS BETWEEN BATTERY AND KEY WARNING SWITCH.</b> 1) Disconnect the connector key warning switch. 2) Measure the voltage of harness between key warning switch and chassis ground. <b>Connector &amp; terminal</b> <b>(B74) No. 2 — Chassis ground:</b> Is the measured value within the specified range?	Between 9 and 16 V	Go to step 2.	Repair open or short circuit in harness between battery and key warning switch.
<b>2 CHECK KEY WARNING SWITCH.</b> Measure the resistance of stop light switch connector terminals. <b>Terminal</b> <b>No. 1 — No. 2:</b> Is the measured value more than the specified value?	1 MΩ	Replace key warning switch.	Go to step 4.
<b>3 CHECK KEY WARNING SWITCH.</b> 1) Remove the key. 2) Measure the resistance of stop light switch connector terminals. <b>Terminal</b> <b>No. 1 — No. 2:</b> Is the measured value more than the specified value?	1 MΩ	Go to step 4.	Replace key warning switch.
<b>4 CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND KEY WARNING SWITCH.</b> 1) Disconnect the integrated module connector. 2) Measure the voltage of harness integrated module and chassis ground. <b>Connector &amp; terminal</b> <b>(B280) No. 20 — Chassis ground:</b> Is the measured value more than the specified value?	9 V	Go to step 5.	Repair open circuit in harness between integrated module and key warning switch.
<b>5 CHECK HARNESS BETWEEN INTEGRATED MODULE AND KEY LOCK SOLENOID.</b> 1) Disconnect the connector key lock solenoid. 2) Measure the resistance of harness between integrated module and key lock solenoid. <b>Connector &amp; terminal</b> <b>(B73) No. 2 — (B281) No. 3:</b> Is the measured value more than the specified value?	1 MΩ	Repair open circuit in harness between integrated module and key lock solenoid.	Go to step 6.
<b>6 CHECK HARNESS BETWEEN INTEGRATED MODULE AND KEY LOCK SOLENOID.</b> Measure the resistance of harness between integrated module and chassis ground. <b>Connector &amp; terminal</b> <b>(B281) No. 3 — Chassis ground:</b> Is the measured value more than the specified value?	1 Ω	Go to step 7.	Repair short circuit in harness between integrated module and key lock solenoid.

# AT SHIFT LOCK SYSTEM

## CONTROL SYSTEMS

Step	Check	Yes	No
<b>7</b> <b>CHECK HARNESS BETWEEN KEY LOCK SOLENOID AND CHASSIS GROUND.</b> Measure the resistance of harness between key lock solenoid and chassis ground. <b>Connector &amp; terminal</b> <b>(B73) No. 1 — Chassis ground:</b> Is the measured value less than the specified value?	$10\ \Omega$	Go to step <b>8</b> .	Repair open circuit in harness between key lock solenoid and chassis ground.
<b>8</b> <b>CHECK KEY LOCK SOLENOID.</b> Measure the resistance of key lock solenoid connector terminals. <b>Connector &amp; terminal</b> <b>(B73) No. 1 — No. 2:</b> Is the measured value within the specified range?	Between 4 and 8 $\Omega$	Go to step <b>14</b> .	Replace the key lock solenoid.
<b>9</b> <b>CHECK HARNESS BETWEEN "P" POSITION SWITCH AND CHASSIS GROUND.</b> Measure the resistance of harness between "P" position switch and chassis ground. <b>Connector &amp; terminal</b> <b>(B116) No. 2 — Chassis ground:</b> Is the measured value less than the specified value?	$1\ \Omega$	Go to step <b>10</b> .	Repair short circuit in harness between "P" position switch and integrated module.
<b>10</b> <b>CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND "P" POSITION SWITCH.</b> 1) Disconnect the connector from "P" position switch. 2) Measure the resistance of harness between integrated module and "P" position switch. <b>Connector &amp; terminal</b> <b>(B116) No. 2 — (B280) No. 6:</b> Is the measured value more than the specified value?	$1\ M\Omega$	Repair open circuit in harness between integrated module and "P" position switch.	Go to step <b>11</b> .
<b>11</b> <b>CHECK HARNESS BETWEEN "P" POSITION SWITCH AND CHASSIS GROUND.</b> Measure the resistance of harness "P" position switch and chassis ground. <b>Connector &amp; terminal</b> <b>(B116) No. 6 — Chassis ground:</b> Is the measured value more than the specified value?	$1\ M\Omega$	Go to step <b>12</b> .	Repair open circuit in harness between "P" position switch and chassis ground.
<b>12</b> <b>CHECK "P" POSITION SWITCH.</b> 1) Move the select lever to "P" position. 2) Measure resistance between "P" position switch connector terminals. <b>Terminal</b> <b>No. 2 — No. 6:</b> Is the measured value less than the specified value?	$1\ \Omega$	Go to step <b>13</b> .	Replace the "P" position switch.

# AT SHIFT LOCK SYSTEM

## CONTROL SYSTEMS

Step	Check	Yes	No
13 <b>CHECK "P" POSITION SWITCH.</b> 1)Move the select lever to other than "P" position. 2)Measure resistance between "P" position switch connector terminals.  <i>Terminal</i> <i>No. 2 — No. 6:</i> Is the measured value more than the specified value?	1 MΩ	Go to step 14.	Replace the "P" position switch.
14 <b>CHECK OUTPUT SIGNAL FOR INTEGRATED MODULE.</b> 1)Connect all connectors. 2)Turn the ignition switch to ON (engine OFF). 3)Move the select lever to "P" position. 4)Press the brake pedal. 5)Measure the voltage between integrated module connector and chassis ground.  <i>Connector &amp; terminal</i> <i>(B281) No. 3 (+) — Chassis ground (-):</i> Is the measured value within the specified range?	Between 7.5 and 16 V	Go to step 15.	Replace the integrated module.
15 <b>CHECK POOR CONTACT.</b> Is there poor contact in AT shift lock circuit?	There is a poor contact.	Repair poor contact.	Replace the integrated module.