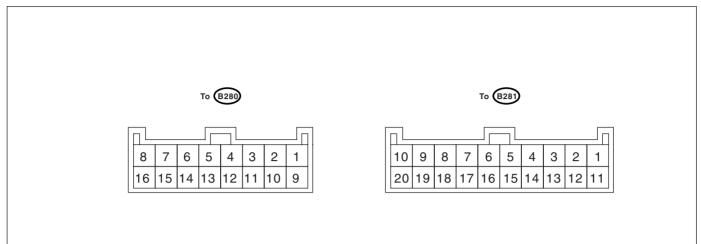
# 3. AT Shift Lock Control System

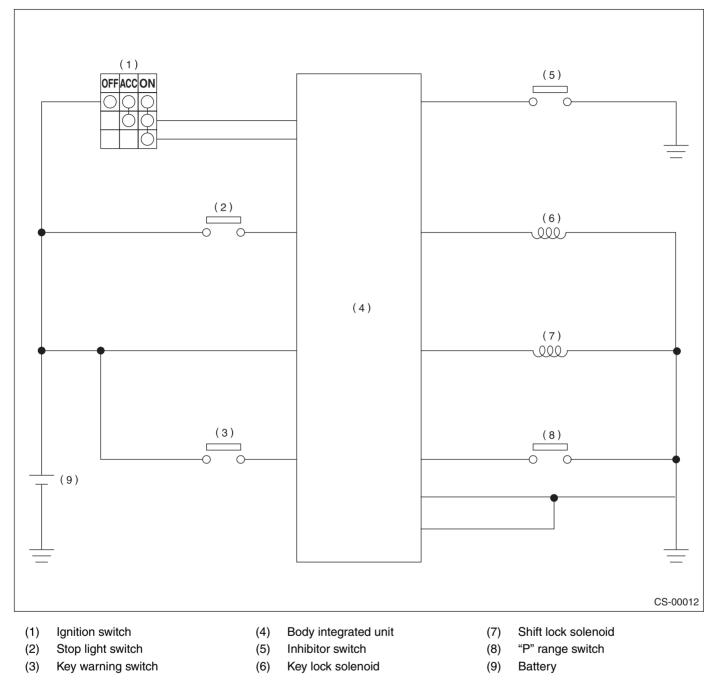
### A: ELECTRICAL SPECIFICATION



CS-00086

Contents	To Connector No.	Terminal No.	Input/Output signal
Contents	TO CONNECTOR NO.	Terminar NO.	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	<ul><li>9 — 16 V when stop light switch is ON.</li><li>0 V when stop light switch is OFF.</li></ul>
"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	<ul><li>9 — 16 V when key is inserted.</li><li>0 V when key is removed.</li></ul>
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**

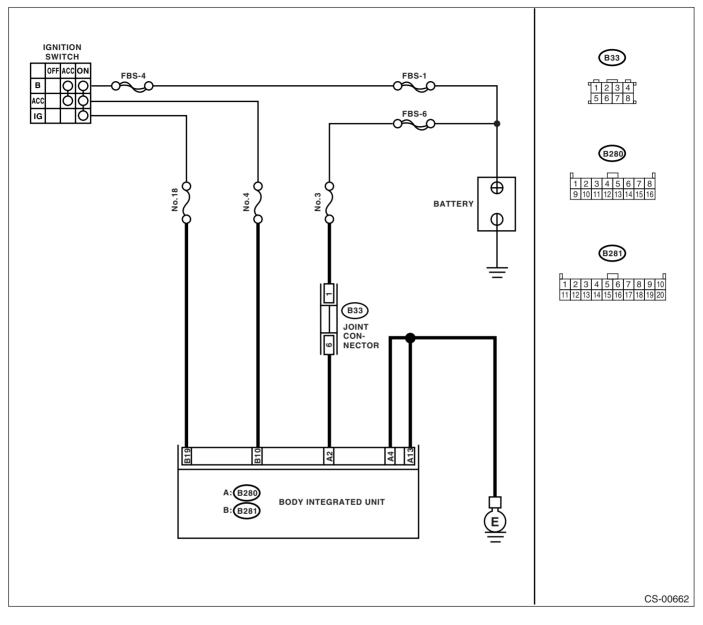


### C: INSPECTION

### **1. SHIFT LOCK OPERATION**

	Step	Check	Yes	No
1	<ul> <li>CHECK SHIFT LOCK.</li> <li>1) Turn the ignition switch to ON.</li> <li>2) Move the select lever to "P" range.</li> </ul>	While brake pedal is not depressed, can the select lever move from "P" range to other ranges?	Inspect "SELECT LEVER SHIFT LOCK CANNOT BE RELEASED". <ref. cs-15,<br="" to="">SHIFT LOCK OF SELECT LEVER CANNOT BE RELEASED., INSPECTION, AT Shift Lock Control System.&gt;</ref.>	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. cs-13,<br="" to="">SELECT LEVER CANNOT BE SHIFTED, INSPECTION, AT Shift Lock Control System.&gt;</ref.>
3	CHECK KEY INDICATOR LOCK.	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.&gt;</ref. 	Go to step 4.
4	CHECK KEY INDICATOR LOCK.	Is the ignition switch turned to the "LOCK" position when the select lever is set to the "P" range?	AT shift lock con- trol system is nor- mal.	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.&gt;</ref. 

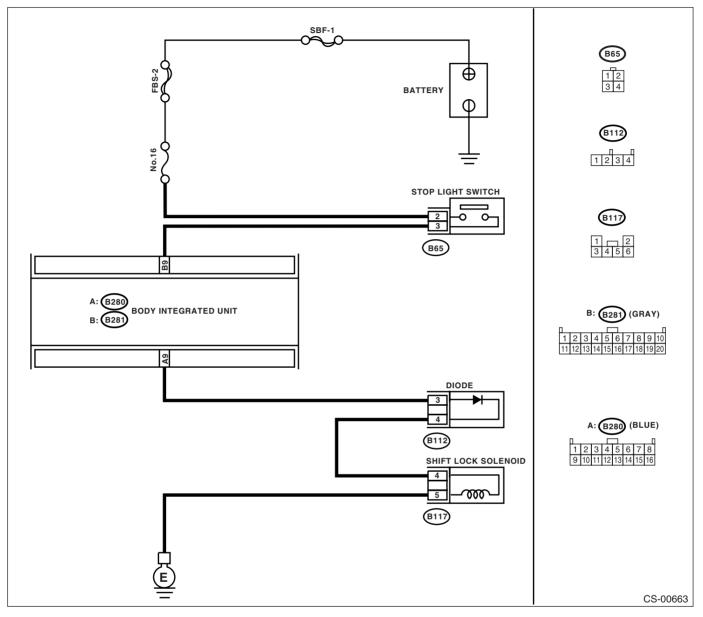
### 2. BODY INTEGRATED UNIT POWER SUPPLY AND GROUND CIRCUIT



Step	Check	Yes	No
1 CHECK FUSE. Remove 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.

	Step	Check	Yes	No
2	<ul> <li>CHECK HARNESS CONNECTOR BETWEEN BODY INTEGRATED UNIT AND CHASSIS GROUND.</li> <li>1) Turn the ignition switch to OFF.</li> <li>2) Measure the harness resistance between the body integrated unit and chassis ground. <i>Connector &amp; terminal</i> (B280) No. 4 — Chassis ground: (B280) No. 13 — Chassis ground:</li> </ul>	Is the resistance less than 1 $\Omega$ ?	Go to step 3.	Repair the open circuit of harness between the body integrated unit and chassis ground.
3	<ul> <li>CHECK BATTERY POWER SUPPLY.</li> <li>1) Turn the ignition switch to ON. (Engine OFF)</li> <li>2) Check the voltage between body integrated unit and chassis ground.</li> <li>Connector &amp; terminal</li> <li>(B280) No. 2 (+) — Chassis ground (-):</li> </ul>	Is the voltage more than 9 V?	Go to step <b>4</b> .	Repair the open circuit harness between battery and body inte- grated unit, and poor contact in connector.
4	<ul> <li>CHECK IGNITION POWER SUPPLY CIRCUIT.</li> <li>1) Turn the ignition switch to ACC.</li> <li>2) Check the voltage between body integrated unit and chassis ground.</li> <li>Connector &amp; terminal</li> <li>(B281) No. 10 (+) — Chassis ground (-):</li> </ul>	Is the voltage more than 9 V?	Go to step <b>5</b> .	Repair the open circuit harness between battery and body inte- grated unit, and poor contact in connector.
5	<ul> <li>CHECK IGNITION POWER SUPPLY CIR- CUIT.</li> <li>1) Turn the ignition switch to ON. (Engine OFF)</li> <li>2) Measure the voltage between body inte- grated unit and chassis ground.</li> <li>Connector &amp; terminal (B281) No. 19 (+) — Chassis ground (-):</li> </ul>	Is the voltage more than 9 V?	Go to step <b>6</b> .	Repair the open circuit harness between battery and body inte- grated unit, and poor contact in connector.
6	CHECK POOR CONTACT.	Is there poor contact in con- nector?	Repair the poor contact.	Replace the body integrated unit.

### 3. SELECT LEVER CANNOT BE SHIFTED



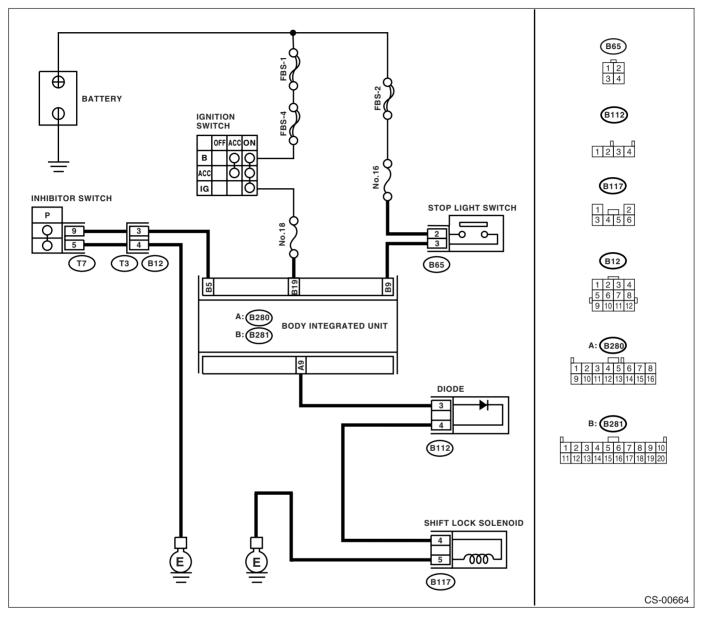
	Step	Check	Yes	No
1	CHECK STOP LIGHT SWITCH. Depress the brake pedal.	Does the stop light illuminate?	Go to step 2.	Check the stop light system.
2	<ul> <li>CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND BODY INTEGRATED UNIT.</li> <li>1) Turn the ignition switch to OFF.</li> <li>2) Disconnect the connectors of body inte- grated unit and stop light switch.</li> <li>3) Measure the resistance of harness between stop light switch and body integrated unit.</li> <li>Connector &amp; terminal (B65) No. 3 — (B281) No. 9:</li> </ul>	Is the resistance more than 1 M $\Omega$ ?	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.	Is the resistance less than 1 $\Omega$ ?	Repair the short circuit of harness	Go to step 4.
	Measure the resistance of harness between		between the body	
	stop light switch and chassis ground.		integrated unit and	
	Connector & terminal		stop light switch.	
	(B65) No. 3 — Chassis ground:			
4	CHECK HARNESS BETWEEN BODY INTE-	Is the resistance more than 1	Repair the open	Go to step 5.
	GRATED UNIT AND SHIFT LOCK SOLE-	ΜΩ?	circuit of harness	
	NOID.		between body inte-	
	1) Disconnect the connector of shift lock sole-		grated unit and	
	noid.		shift lock solenoid.	
	2) Measure the harness resistance between			
	body integrated unit and the shift lock solenoid.			
	Connector & terminal			
	(B117) No. 4 — (B280) No. 9:			
5	CHECK HARNESS BETWEEN BODY INTE-	Is the resistance less than 1	Repair the short	Go to step 6.
	GRATED UNIT AND SHIFT LOCK SOLE-	Ω?	circuit of harness	
	NOID.		between the body	
	Measure the resistance of harness between		integrated unit and	
	shift lock solenoid and chassis ground.		shift lock solenoid.	
	Connector & terminal			
	(B117) No. 4 — Chassis ground:			<b>•</b> • • <b>•</b>
6	CHECK HARNESS BETWEEN SHIFT LOCK	Is the resistance more than 1	Repair open circuit	Go to step 7.
	SOLENOID AND CHASSIS GROUND.	ΜΩ?	of harness	
	Measure the resistance of harness between		between shift lock	
	shift lock solenoid and chassis ground.		solenoid and chas-	
	Connector & terminal		sis ground.	
7	(B117) No. 5 — Chassis ground: CHECK SHIFT LOCK SOLENOID.	Is the resistance between 20	Go to step 8.	Replace the shift
/	Measure the resistance of the shift lock sole-	and 40 $\Omega$ ?		lock solenoid.
	noid connector terminals.			IUCK SUIEITUIU.
	Terminals			
	No. 4 — No. 5:			
8	CHECK SHIFT LOCK SOLENOID.	Is the shift lock solenoid oper-	Go to step 9.	Replace the shift
0	Connect the battery to connector terminal of	ating properly?		lock solenoid.
	shift lock solenoid, and operate the solenoid.			IOUR SUICHUIU.
	Terminals			
	No. 4 (+) — No. 5 (–):			
9	CHECK POOR CONTACT.	Is there poor contact in con-	Repair the poor	Replace the body
<b>.</b>		nector?	contact.	integrated unit.

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



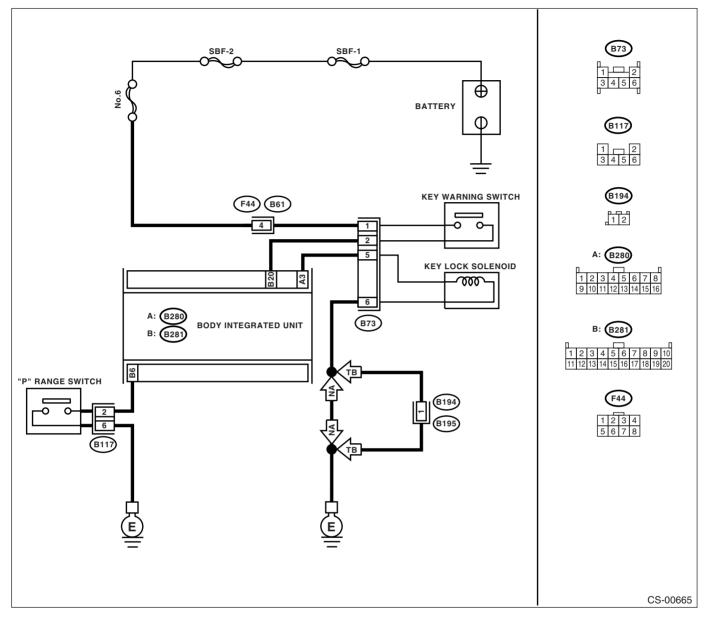
	Step	Check	Yes	No
1	CHECK INHIBITOR SWITCH 1) Turn the ignition switch to ON. (Engine OFF) 2) Move the select lever from "P" to "1" range.	Combination meter indicator lamp and select lever "P", "R", "N", "3", "2" and "1" are cor- rectly matched?	Go to step 2.	Adjust inhibitor switch and select cable.
2	<ul> <li>CHECK IGNITION POWER SUPPLY CIRCUIT.</li> <li>1) Turn the ignition switch to ON. (Engine OFF)</li> <li>2) Measure the voltage between body integrated unit and chassis ground.</li> <li>Connector &amp; terminal (B281) No. 19 (+) — Chassis ground (-):</li> </ul>	Is the voltage more than 9 V?	Go to step 3.	Repair the open circuit harness between battery and body inte- grated unit, and poor contact in connector.

	Step	Check	Yes	No
3	CHECK HARNESS BETWEEN THE INHIBI- TOR SWITCH AND THE BODY INTEGRATED	Is the resistance less than 1 $\Omega$ ?	Repair the short circuit of harness	Go to step 4.
	UNIT.	22 :	between the body	
	<ol> <li>Turn the ignition switch to OFF.</li> </ol>		integrated unit and	
	<ol><li>Disconnect the transmission harness and</li></ol>		transmission con-	
	body integrated unit connector.		nector.	
	3) Measure the harness resistance between			
	the body integrated unit and chassis ground.			
	Connector & terminal			
	(B280) No. 5 — Chassis ground:			<u> </u>
4	CHECK HARNESS BETWEEN THE INHIBI-	Is the resistance more than 1 MΩ?	Repair the open wire of harness	Go to step 5.
	TOR SWITCH AND THE BODY INTEGRATED UNIT.	IVIS 2 ?	between the body	
	Measure the resistance of harness between		integrated unit and	
	body integrated unit and inhibitor switch.		transmission con-	
	Connector & terminal		nector.	
	(B12) No. 3 — (B281) No. 5:			<b>D</b>
5	CHECK HARNESS BETWEEN INHIBITOR	Is the resistance less than 1	Go to step 6.	Repair the open
	SWITCH AND CHASSIS GROUND.	Ω?		circuit of harness
	Measure the harness resistance between the			between the body
	body integrated unit and chassis ground. Connector & terminal			integrated unit and chassis ground.
	(B12) No. 4 — Chassis ground:			chassis ground.
6	CHECK INHIBITOR SWITCH	Is the resistance more than 1	Repair or replace	Go to step 7.
ľ	1) Move the select lever to "P" range.	$M\Omega$ ?	inhibitor switch.	
	2) Measure the resistance between transmis-			
	sion harness connector terminals.			
	Connector & terminal			
	(T3) No. 3 — No. 4:			
7	CHECK OUTPUT SIGNAL OF BODY INTE-	Is the voltage 9 — 16 V?	Go to step 8.	Go to step 16.
	GRATED UNIT.			
	<ol> <li>Connect all the connectors.</li> </ol>			
	2) Turn the ignition switch to ON.			
	3) Measure the voltage between body inte-			
	grated unit and chassis ground. Connector & terminal			
8	(B281) No. 5 (+) — Chassis ground (–): CHECK STOP LIGHT SWITCH.	Does the stop light illuminate?	Go to stop <b>0</b>	Check the stop
0	Depress the brake pedal.	Does the stop light indiminate?	Go to step <b>9</b> .	light system.
9		Is the voltage more than 9 V?	Go to step 10.	Repair the open or
Ŭ	SWITCH AND AT SHIFT LOCK CONTROL			short circuit of har-
	MODULE.			ness between the
	1) Depress the brake pedal.			body integrated
	2) Measure the voltage between body inte-			unit and stop light
	grated unit and chassis ground.			switch.
	Connector & terminal			
	(B281) No. 9 (+) — Chassis ground (–):			
10	CHECK HARNESS BETWEEN BODY INTE-	Is the resistance more than 1	Repair the open	Go to step 11.
	GRATED UNIT AND SHIFT LOCK SOLE-	ΜΩ?	circuit of harness	
	NOID.		between body inte-	
	1) Turn the ignition switch to OFF.		grated unit and	
	2) Disconnect the shift lock solenoid and body		shift lock solenoid.	
	integrated unit connector.			
	3) Measure the harness resistance between			
	body integrated unit and the shift lock solenoid.			
	Connector & terminal			
	(B280) No. 9 — (B117) No. 4:			

### AT Shift Lock Control System

	Step	Check	Yes	No
11	CHECK HARNESS BETWEEN BODY INTE-	Is the resistance less than 10	Go to step 12.	Repair the short
	GRATED UNIT AND SHIFT LOCK SOLE-	$\Omega$ ?		circuit of harness
	NOID.	22:		between the body
	Measure the resistance of harness between			integrated unit and
	shift lock solenoid and chassis ground.			shift lock solenoid.
	Connector & terminal			
	(B280) No. 9 — Chassis ground:			
12	CHECK HARNESS BETWEEN SHIFT LOCK	Is the resistance less than 1	Go to step 13.	Repair open circuit
•-	SOLENOID AND CHASSIS GROUND.	$\Omega$ ?		of harness
	Measure the resistance of harness between			between shift lock
	shift lock solenoid and chassis ground.			solenoid and chas-
	Connector & terminal			sis ground.
	(B117) No. 5 — Chassis ground:			5
13	CHECK SHIFT LOCK SOLENOID.	Is the resistance between 20	Go to step 14.	Replace the shift
	Measure the resistance of the shift lock sole-	and 40 Ω?		lock solenoid.
	noid connector terminals.			
	Terminals			
	No. 4 — No. 5:			
14	CHECK SHIFT LOCK SOLENOID.	Is the shift lock solenoid oper-	Go to step 15.	Replace the shift
	Connect the battery to connector terminal of	ating properly?		lock solenoid.
	shift lock solenoid, and operate the solenoid.			
	Terminals			
	No. 4 (+) — No. 5 (–):			
15	CHECK OUTPUT SIGNAL FOR AT SHIFT	Is the voltage more than 8.5 V?	Go to step 16.	Replace the body
	LOCK CONTROL MODULE.			integrated unit.
	1) Turn the ignition switch to ON. (Engine			
	OFF)			
	2) Measure the voltage between body inte-			
	grated unit and chassis ground.			
	Connector & terminal			
10	(B280) No. 9 (+) — Chassis ground (–):		Demoin the mean	Deplese the hort
16	CHECK POOR CONTACT.	Is there poor contact in con- nector?	Repair the poor	Replace the body
		nector?	contact.	integrated unit.

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



	Step	Check	Yes	No
1	<ul> <li>CHECK HARNESS BETWEEN BATTERY AND KEY WARNING SWITCH.</li> <li>1) Disconnect the connector of key warning switch.</li> <li>2) Measure the voltage of harness between key warning switch and chassis ground.</li> <li>Connector &amp; terminal (B73) No. 1 (+) — Chassis ground (-):</li> </ul>	Is the voltage 9 — 16 V?	Go to step 2.	Repair the open or short circuit of har- ness between bat- tery and key warning switch.
2	CHECK KEY WARNING SWITCH. Measure the resistance between connector terminals of key warning switch. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance more than 1 $M\Omega$ ?	Replace the key warning switch.	Go to step <b>3</b> .

## AT Shift Lock Control System

	Step	Check	Yes	No
3	CHECK KEY WARNING SWITCH.	Is the resistance more than 1	Go to step 4.	Replace the key
	1) Remove the key.	ΜΩ?		warning switch.
	2) Measure the resistance between connector			-
	terminals of key warning switch.			
	Terminals			
	No. 1 — No. 2:			
4	CHECK HARNESS BETWEEN AT SHIFT	Is the voltage more than 9 V?	Go to step 5.	Repair the open
	LOCK CONTROL MODULE AND KEY			circuit of harness
	WARNING SWITCH.			between body inte-
	<ol> <li>Disconnect the body integrated unit con-</li> </ol>			grated unit and key
	nector.			warning switch.
	<ol><li>Measure the voltage between body inte-</li></ol>			
	grated unit and chassis ground.			
	Connector & terminal			
	(B281) No. 20 (+) — Chassis ground (–):			
5	CHECK HARNESS BETWEEN BODY INTE-	Is the resistance more than 1	Repair the open	Go to step 6.
		ΜΩ?	circuit of harness	
	1) Disconnect the connector key lock sole-		between body inte-	
	noid.		grated unit and key	
	2) Measure the harness resistance between		lock solenoid.	
	body integrated unit and the key lock solenoid.			
	Connector & terminal			
-	(B73) No. 5 — (B280) No. 3:			<b>D</b>
6	CHECK HARNESS BETWEEN BODY INTE-	Is the resistance more than	Go to step 7.	Repair the short of
	GRATED UNIT AND KEY LOCK SOLENOID.	1Ω?		the harness
	Measure the harness resistance between the			between body inte-
	body integrated unit and chassis ground. Connector & terminal			grated unit and key lock solenoid.
				lock solenoid.
7	(B280) No. 3 — Chassis ground: CHECK HARNESS BETWEEN KEY LOCK	Is the resistance less than 10	Co to stop 9	Denair anan airauit
<i>'</i>	SOLENOID AND CHASSIS GROUND.	$\Omega$ ?	Go to step 8.	Repair open circuit or the poor contact
	Measure the resistance of harness between	\$27		of the harness
	key lock solenoid and chassis ground.			between key lock
	Connector & terminal			solenoid and chas-
	(B73) No. 6 — Chassis ground:			sis ground.
8	CHECK KEY LOCK SOLENOID.	Is the resistance between 4	Go to step 9.	Replace the key
Ŭ	Measure the resistance of key lock solenoid	and 8 $\Omega$ ?		lock solenoid.
	connector terminals.			
	Terminals			
	No. 1 — No. 2:			
9	CHECK HARNESS BETWEEN "P" RANGE	Is the resistance less than 1	Go to step 10.	Repair the short
	SWITCH AND CHASSIS GROUND.	$\Omega$ ?		circuit of harness
	Measure the resistance of harness between			between "P" range
	"P" range switch and chassis ground.			switch and body
	Connector & terminal			integrated unit.
	(B117) No. 2 — Chassis ground:			5
10	CHECK HARNESS BETWEEN AT SHIFT	Is the resistance more than 1	Repair the open	Go to step 11.
	LOCK CONTROL MODULE AND "P" RANGE	ΜΩ?	circuit of harness	
	SWITCH.		between body inte-	
	1) Disconnect the connector of "P" range		grated unit and "P"	
	switch.		range switch.	
	2) Measure the resistance of harness			
	between body integrated unit and "P" range			
	switch.			
	Connector & terminal			
1	(B117) No. 2 — (B281) No. 6:			

	Step	Check	Yes	No
11	CHECK HARNESS BETWEEN "P" RANGE SWITCH AND CHASSIS GROUND. Measure the resistance of harness between "P" range switch and chassis ground. Connector & terminal (B117) No. 6 — Chassis ground:	Is the resistance more than 1 $M\Omega$ ?	Repair the open circuit of harness between "P" range switch and chas- sis ground.	Go to step 12.
12	<ul> <li>CHECK "P" RANGE SWITCH.</li> <li>1) Move the select lever to "P" range.</li> <li>2) Measure the resistance between "P" range switch connector terminals.</li> <li><i>Terminals</i></li> <li><i>No. 2 - No. 6:</i></li> </ul>	Is the resistance less than 1 $\Omega$ ?	Go to step 13.	Replace the "P" range switch.
13	<ul> <li>CHECK "P" RANGE SWITCH.</li> <li>1) Set the select lever to other than "P" range.</li> <li>2) Measure the resistance between "P" range switch connector terminals.</li> <li><i>Terminals</i></li> <li><i>No. 2 — No. 6:</i></li> </ul>	Is the resistance more than 1 $M\Omega$ ?	Go to step 14.	Replace the "P" range switch.
14	<ul> <li>CHECK OUTPUT SIGNAL OF BODY INTE- GRATED UNIT.</li> <li>1) Disconnect all connectors.</li> <li>2) Turn the ignition switch to ON. (Engine OFF)</li> <li>3) Move the select lever to "P" range.</li> <li>4) Depress the brake pedal.</li> <li>5) Measure the voltage between body inte- grated unit connector and chassis ground.</li> <li>Connector &amp; terminal (B280) No. 3 (+) — Chassis ground (-):</li> </ul>	Is the voltage 7.5 — 16 V?	Go to step <b>15</b> .	Replace the body integrated unit.
15	CHECK POOR CONTACT.	Is there poor contact in con- nector?	Repair the poor contact.	Replace the body integrated unit.