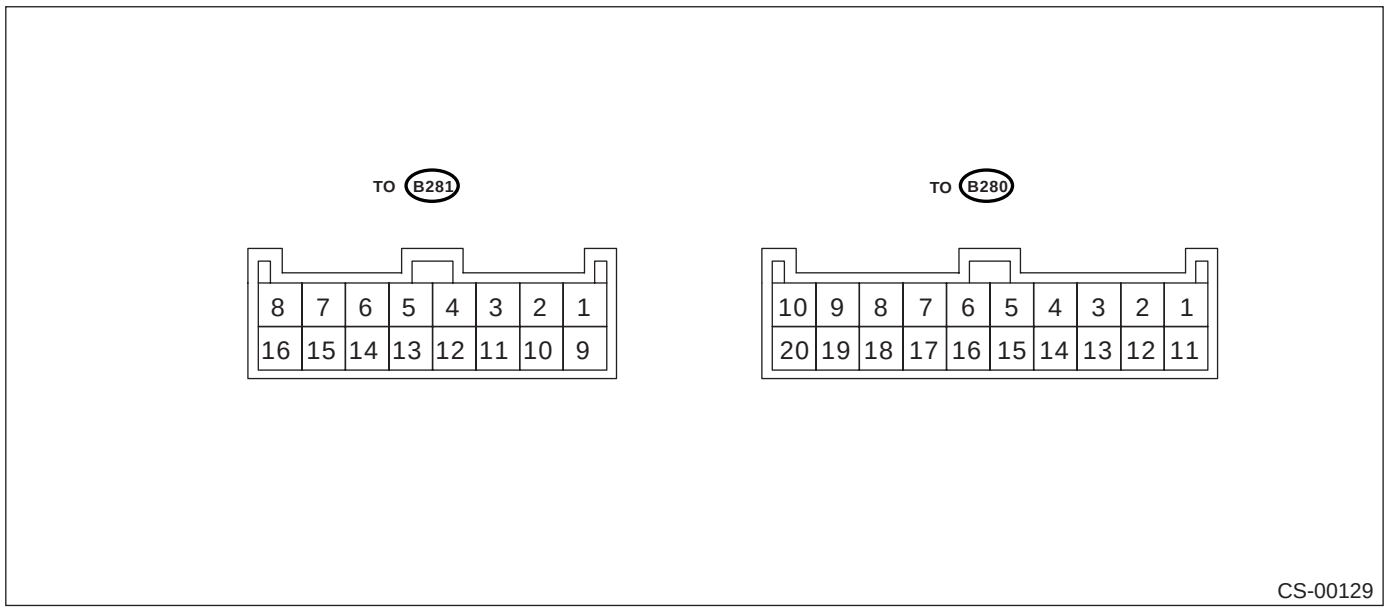
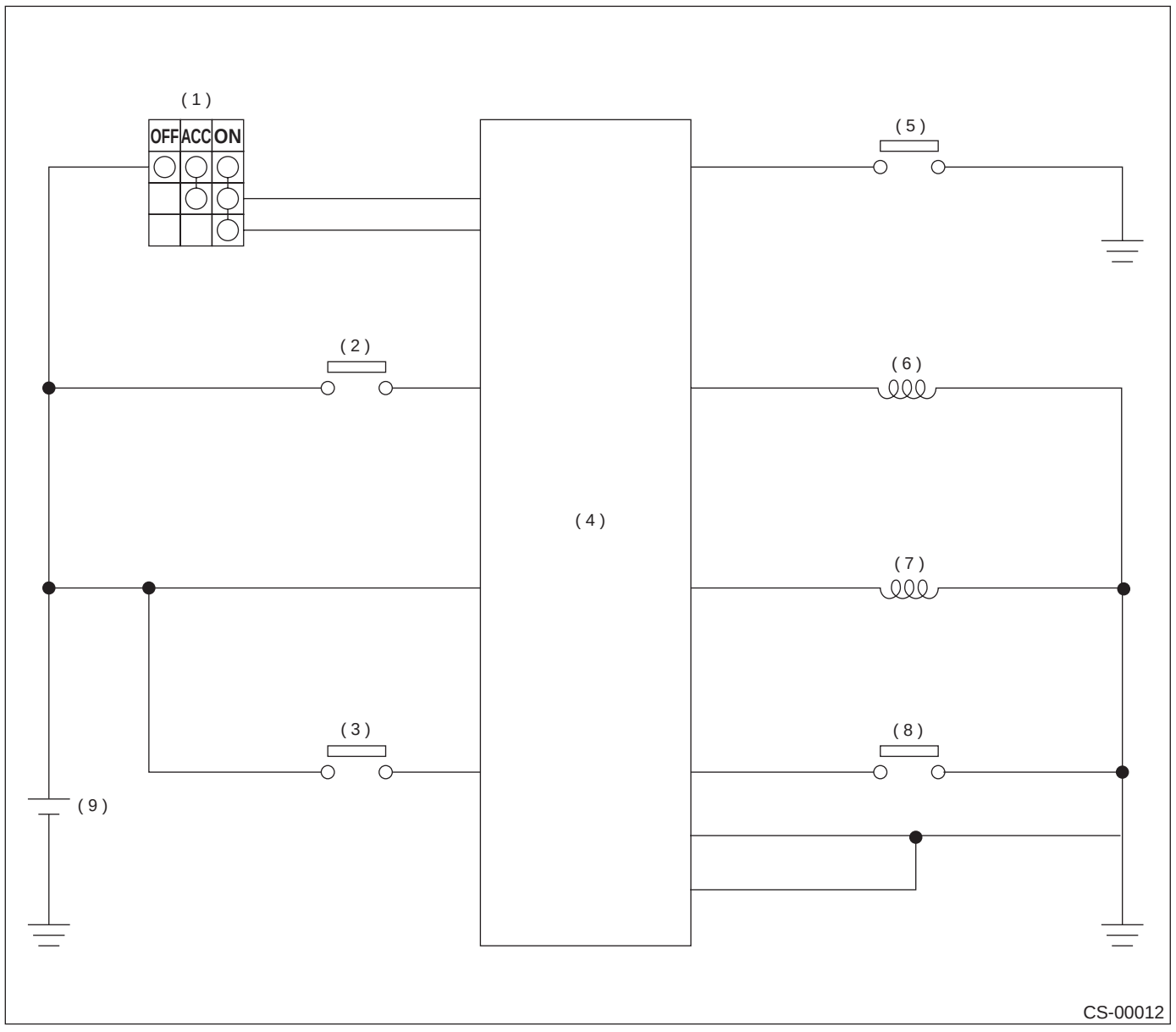
3. AT Shift Lock System

A: ELECTRICAL SPECIFICATION



Contents	To 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.
ACC power supply	B280	10	10 — 15 V when ignition switch is at ACC or ON.
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	Pulse is output when switching key lock between locked and unlocked. 0 V at other conditions than above.
Ground	B281	4	—
Ground	B281	13	—

B: SCHEMATIC



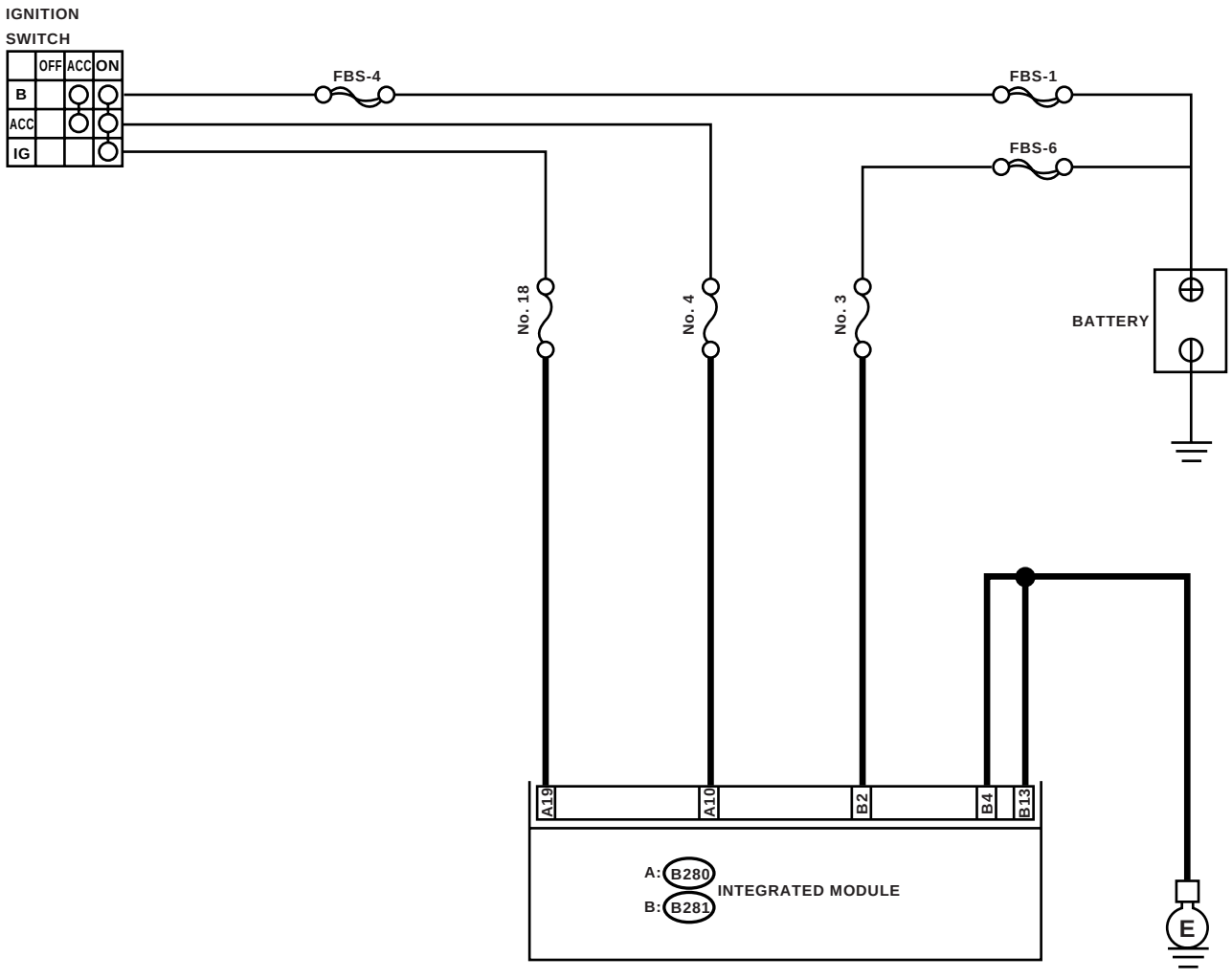
(1) Ignition switch
(2) Stop light switch
(3) Key warning switch
(4) Integrated module
(5) Inhibitor switch
(6) Key lock solenoid
(7) Shift lock solenoid
(8) “P” position switch
(9) Battery

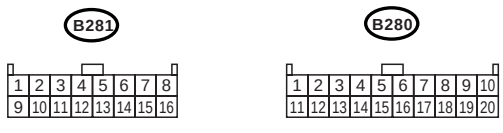
C: INSPECTION

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

1. INTEGRATED MODULE POWER SUPPLY AND GROUND LINE

WIRING DIAGRAM:



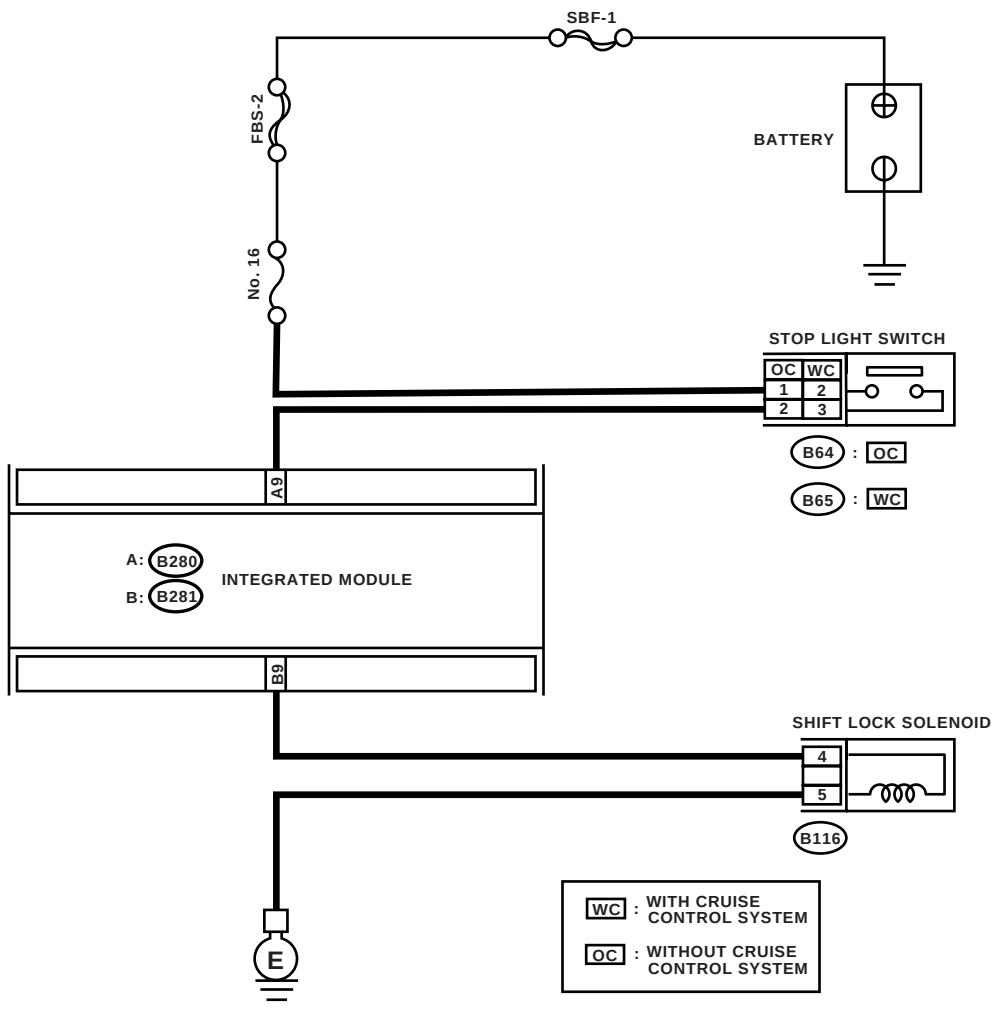


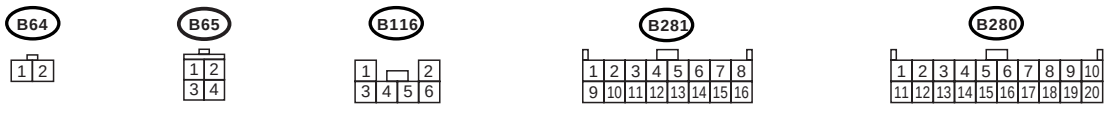
CS-00130

	Step	Value	Yes	No
1	**CHECK FUSE.** Remove the fuse (No. 3, 4 and 18). Is the fuse (No. 3, 4 or 18) blown out?	Fuse is blown out.	Replace the fuse (No. 3, 4 or 18). If the replaced fuse (No. 3, 4 or 18) has blown out easily, repair short circuit in harness between fuse and integrated module.	Go to step **2.**
2	**CHECK HARNESS CONNECTOR BETWEEN INTEGRATED MODULE AND BODY GROUND.** 1) Turn the ignition switch to OFF. 2) Measure the resistance of harness between integrated module and chassis ground. ***Connector & terminal*** ***(B281) No. 4 — Chassis ground:*** ***(B281) No. 13 — Chassis ground:*** Is the measured value less than specified value?	1 Ω	Go to step **3.**	Repair the open circuit in harness between integrated module and body ground.
3	**CHECK BATTERY POWER SUPPLY.** 1) Turn the ignition switch to ON (engine OFF). 2) Measure the voltages between integrated module and chassis ground. ***Connector & terminal*** ***(B281) No. 2 (+) — Chassis ground (-):*** Is the measured value more than specified value?	9 V	Go to step **4.**	Repair the open circuit harness between battery and integrated module, and poor contact in coupling connector.
4	**CHECK IGNITION POWER SUPPLY CIRCUIT.** 1) Turn the ignition switch to ACC. 2) Measure the voltage between integrated module and chassis ground. ***Connector & terminal*** ***(B280) No. 10 (+) — Chassis ground (-):*** Is the measured value more than specified value?	9 V	Go to step **5.**	Repair the open circuit harness between battery and integrated module, and poor contact in coupling connector.
5	**CHECK IGNITION POWER SUPPLY CIRCUIT.** 1) Turn the ignition switch to ON (engine OFF). 2) Measure the voltage between integrated module and chassis ground. ***Connector & terminal*** ***(B280) No. 19 (+) — Chassis ground (-):*** Is the measured value more than specified value?	9 V	Go to step **6.**	Repair the open circuit harness between battery and integrated module, and poor contact in coupling connector.
6	**CHECK POOR CONTACT.** Is there poor contact in power supply and ground line circuit?	Poor contact in connector.	Repair the poor contact.	Replace the integrated module.

2. SELECT LEVER CANNOT BE SHIFT LOCKED

WIRING DIAGRAM:





CS-00131

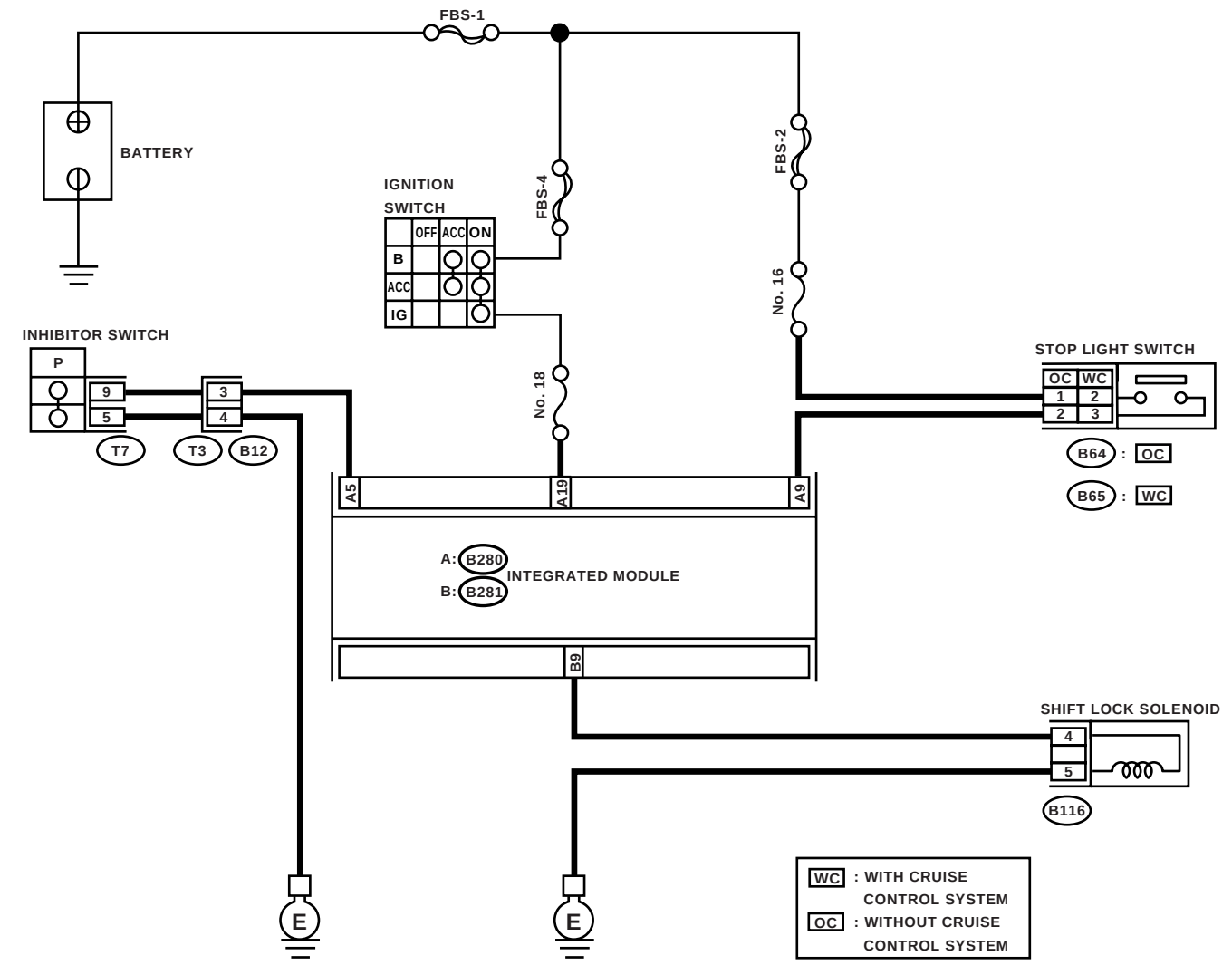
	Step	Value	Yes	No
1	**CHECK STOP LIGHT SWITCH.** Depress the brake pedal. Does the stop light turn on?	Stop light turns on.	Go to step **2.**	Inspect the stop light system.
2	**CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND INTEGRATED MODULE.** 1) Turn the ignition switch to OFF. 2) Disconnect the integrated module and stop-light switch connector. 3) Measure the resistance of harness between stop light switch and integrated module. ***Connector & terminal*** ***Without cruise control system*** ***(B64) No. 2 — (B280) No. 9:*** ***With cruise control system*** ***(B65) No. 3 — (B280) No. 9:*** Is the measured value more than specified value?	1 MΩ	Repair the open circuit in harness between integrated module and stop light switch.	Go to step **3.**
3	**CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND INTEGRATED MODULE.** Measure the resistance of harness between stop light switch and chassis ground. ***Connector & terminal*** ***Without cruise control system*** ***(B64) No. 2 — Chassis ground:*** ***With cruise control system*** ***(B65) No. 3 — Chassis ground:*** Is the measured value less than specified value?	1 Ω	Repair the short circuit in harness between integrated module and stop light switch.	Go to step **4.**
4	**CHECK HARNESS BETWEEN INTEGRATED MODULE AND SHIFT LOCK SOLENOID.** 1) Disconnect the shift lock solenoid connector. 2) Measure the resistance of harness between integrated module and shift lock solenoid. ***Connector & terminal*** ***(B117) No. 4 — (B281) No. 9:*** Is the measured value more than specified value?	1 MΩ	Repair the open circuit in harness between integrated module and shift lock solenoid.	Go to step **5.**
5	**CHECK HARNESS BETWEEN INTEGRATED MODULE AND SHIFT LOCK SOLENOID.** Measure the resistance of harness between shift lock solenoid and chassis ground. ***Connector & terminal*** ***(B116) No. 4 — Chassis ground:*** Is the measured value less than specified value?	1 Ω	Repair the short circuit in harness between integrated module and shift lock solenoid.	Go to step **6.**
6	**CHECK HARNESS BETWEEN SHIFT LOCK SOLENOID AND CHASSIS GROUND.** Measure the resistance of harness between shift lock solenoid and chassis ground. ***Connector & terminal*** ***(B116) No. 5 — Chassis ground:*** Is the measured value more than specified value?	1 MΩ	Repair the open circuit in harness between shift lock solenoid and body ground.	Go to step **7.**

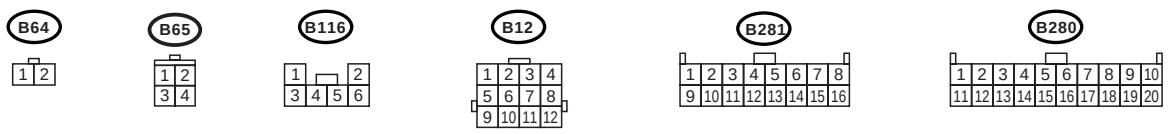
Step		Value	Yes	No
7	**CHECK SHIFT LOCK SOLENOID.** Measure the resistance of shift lock solenoid connector terminals. ***Terminal*** ***No. 4 — No. 5:*** Is the measured value within specified value?	20 — 40 Ω	Go to step **8.**	Replace the shift lock solenoid.
8	**CHECK SHIFT LOCK SOLENOID.** Connect the battery with shift lock solenoid connector terminal and operate solenoid. ***Terminal*** ***No. 4 (+) — No. 5 (-):*** Does the shift lock solenoid operate properly?	Shift lock solenoid operates.	Go to step **9.**	Replace the shift lock solenoid.
9	**CHECK POOR CONTACT.** Is there poor contact in key lock circuit?	Poor contact in connector.	Repair the poor contact.	Replace the integrated module.

MEMO:

3. SELECT LEVER SHIFT LOCK CANNOT BE RELEASED

WIRING DIAGRAM:





CS-00132

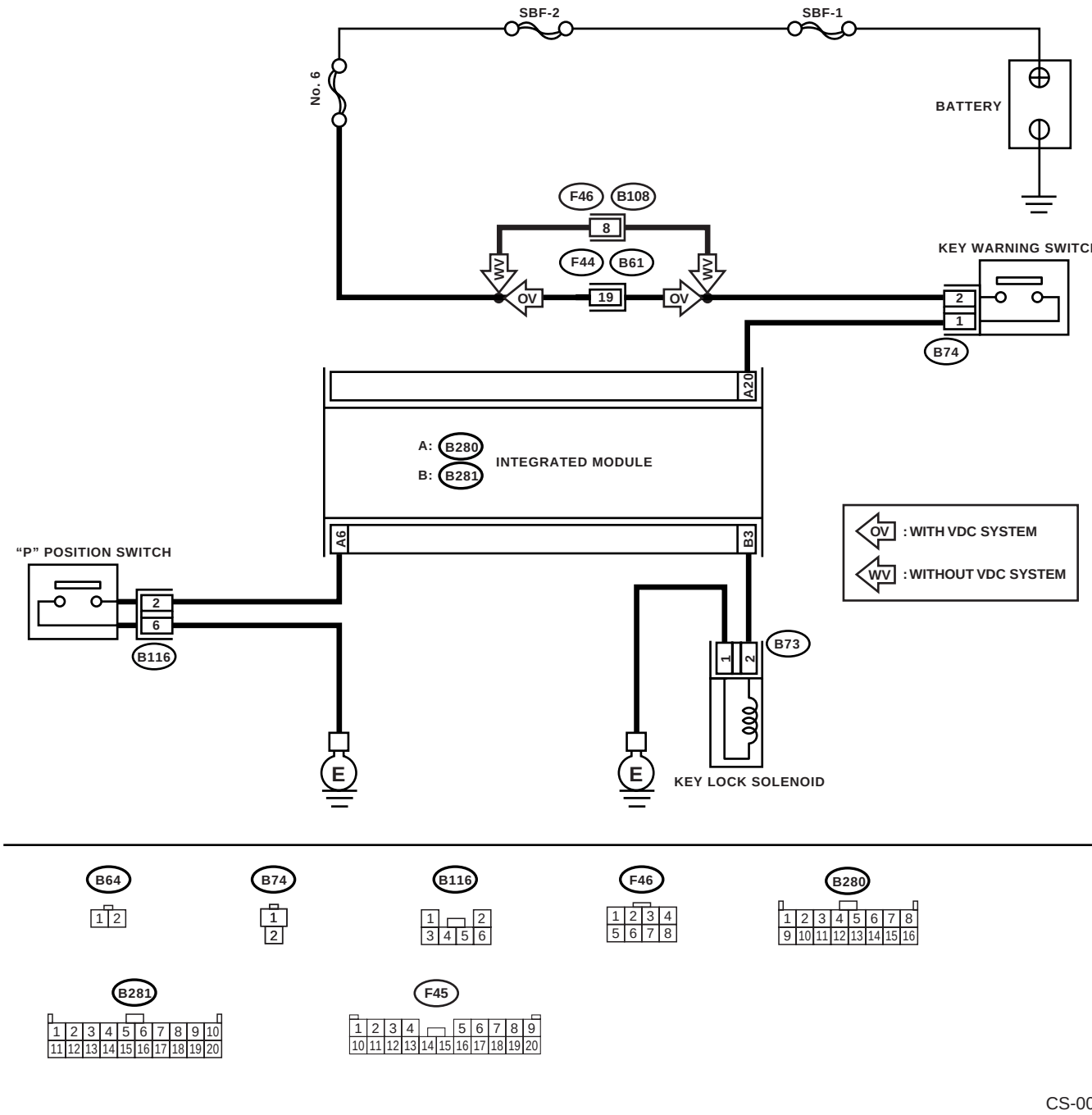
	Step	Value	Yes	No
1	**CHECK INHIBITOR SWITCH.** 1) Turn the ignition switch to ON (engine OFF). 2) Move the select lever from “P” to “1” range. Are combination meter indicator light and select lever “P”, “R”, “N”, “3”, “2” and “1” correctly matched?	Select lever and indicator light correctly match.	Go to step **2.**	Adjust the 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 integrated module and chassis ground. ***Connector & terminal*** ***(B280) No. 19 (+) — Chassis ground (-):*** Is the measured value more than specified value?	9 V	Go to step **3.**	Repair the open circuit harness between battery and integrated module, and poor contact in coupling connector.
3	**CHECK HARNESS BETWEEN INHIBITOR SWITCH AND INTEGRATED MODULE.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector of transmission harness and integrated module. 3) Measure the resistance of harness between integrated module and chassis ground. ***Connector & terminal*** ***(B281) No. 5 — Chassis ground:*** Is the measured value less than specified value?	1 Ω	Repair the short circuit in harness between integrated module and transmission connector.	Go to step **4.**
4	**CHECK HARNESS BETWEEN INHIBITOR SWITCH AND INTEGRATED MODULE.** Measure the resistance of harness between integrated module and inhibitor switch. ***Connector & terminal*** ***(B12) No. 3 — (B280) No. 5:*** Is the measured value more than specified value?	1 MΩ	Repair the open circuit in harness between integrated module and transmission connector	Go to step **5.**
5	**CHECK HARNESS BETWEEN INHIBITOR SWITCH AND CHASSIS GROUND.** Measure the resistance of harness between integrated module and chassis ground. ***Connector & terminal*** ***(B12) No. 4 — Chassis ground:*** Is the measured value less than specified value?	1 Ω	Go to step **6.**	Repair the open circuit in harness between integrated module and chassis ground.
6	**CHECK INHIBITOR SWITCH.** 1) Move the select lever to “P” position. 2) Measure the resistance of transmission harness connector terminals. ***Connector & terminal*** ***(T3) No. 3 — No. 4:*** Is the measured value more than specified value?	1 MΩ	Repair or replace the inhibitor switch.	Go to step **7.**

	Step	Value	Yes	No
7	**CHECK OUTPUT SIGNAL FOR INTEGRATED MODULE.** 1) Connect all connectors. 2) Turn the ignition switch to ON. 3) Measure the voltage between integrated module and chassis ground. ***Connector & terminal*** ***(B280) No. 5 (+) — Chassis ground (-):*** Is the measured value within specified value?	9 — 16 V	Go to step **8.**	Go to step **16.**
8	**CHECK STOP LIGHT SWITCH.** Depress the brake pedal. Does the stop light turn on?	Stop light turns on.	Go to step **9.**	Inspect 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 integrated module and chassis ground. ***Connector & terminal*** ***(B280) No. 9 (+) — Chassis ground (-):*** Is the measured value more than specified value?	9 V	Go to step **10.**	Repair the open or short circuit in harness between integrated module and stop light switch.
10	**CHECK HARNESS BETWEEN INTEGRATED MODULE AND SHIFT LOCK SOLENOID.** 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. ***Connector & terminal*** ***(B281) No. 9 — (B117) No. 4:*** Is the measured value more than specified value?	1 MΩ	Repair the open circuit in harness between integrated module and shift lock solenoid.	Go to step **11.**
11	**CHECK HARNESS BETWEEN INTEGRATED MODULE AND SHIFT LOCK SOLENOID.** Measure the resistance of harness between shift lock solenoid and chassis ground. ***Connector & terminal*** ***(B281) No. 9 — Chassis ground:*** Is the measured value less than specified value?	10 Ω	Go to step **12.**	Repair the short circuit in harness between integrated module and shift lock solenoid.
12	**CHECK HARNESS BETWEEN SHIFT LOCK SOLENOID AND CHASSIS GROUND.** Measure the resistance of harness between shift lock solenoid and chassis ground. ***Connector & terminal*** ***(B116) No. 5 — Chassis ground:*** Is the measured value less than specified value?	1 Ω	Go to step **13.**	Repair the open circuit in harness between shift lock solenoid and chassis ground.
13	**CHECK SHIFT LOCK SOLENOID.** Measure the resistance of shift lock solenoid connector terminals. ***Terminal*** ***No. 4 — No. 5:*** Is the measured value within specified value?	20 — 40 Ω	Go to step **14.**	Replace the shift lock solenoid.

Step		Value	Yes	No
14	**CHECK SHIFT LOCK SOLENOID.** Connect the battery with shift lock solenoid connector terminal and operate solenoid. ***Terminal*** ***No. 4 (+) — No. 5 (-):*** Is the shift lock solenoid operating properly?	Shift lock solenoid operates.	Go to step **15.**	Replace the shift lock solenoid.
15	**CHECK OUTPUT SIGNAL FOR AT SHIFT LOCK CONTROL MODULE.** 1) Turn the ignition switch to ON (engine OFF). 2) Measure the voltage between integrated module and chassis ground. ***Connector & terminal*** ***(B281) No. 9 (+) — Chassis ground (-):*** Is the measured value more than specified value?	8.5 V	Go to step **16.**	Replace the integrated module.
16	**CHECK POOR CONTACT.** Is there poor contact in key lock circuit?	Poor contact in connector.	Repair the poor contact.	Replace the integrated module.

4. KEY INTERLOCK DOES NOT LOCK OR RELEASE

WIRING DIAGRAM:



CS-00133

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

	Step	Value	Yes	No
7	**CHECK HARNESS BETWEEN KEY LOCK SOLENOID AND CHASSIS GROUND.** Measure the resistance of harness between key lock solenoid and chassis ground. ***Connector & terminal*** ***(B73) No. 1 — Chassis ground:*** Is the measured value less than specified value?	10 Ω	Go to step **8.**	Repair the open circuit in harness between key lock solenoid and chassis ground.
8	**CHECK KEY LOCK SOLENOID.** Measure the resistance of key lock solenoid connector terminals. ***Terminal*** ***No. 1 — No. 2:*** Is the measured value within specified value?	4 — 8 Ω	Go to step **14.**	Replace the key lock solenoid.
9	**CHECK HARNESS BETWEEN “P” POSITION SWITCH AND CHASSIS GROUND.** Measure the resistance of harness between “P” position switch and chassis ground. ***Connector & terminal*** ***(B116) No. 2 — Chassis ground:*** Is the measured value less than specified value?	1 Ω	Go to step **10.**	Repair the short circuit in harness between “P” position switch and integrated module.
10	**CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND “P” POSITION SWITCH.** 1) Disconnect the connector from “P” position switch. 2) Measure the resistance of harness between integrated module and “P” position switch. ***Connector & terminal*** ***(B116) No. 2 — (B281) No. 6:*** Is the measured value more than specified value?	1 MΩ	Repair the open circuit in harness between integrated module and “P” position switch.	Go to step **11.**
11	**CHECK HARNESS BETWEEN “P” POSITION SWITCH AND CHASSIS GROUND.** Measure the resistance of harness “P” position switch and chassis ground. ***Connector & terminal*** ***(B116) No. 6 — Chassis ground:*** Is the measured value more than specified value?	1 MΩ	Go to step **12.**	Repair the open circuit in harness between “P” position switch and chassis ground.
12	**CHECK “P” POSITION SWITCH.** 1) Move the select lever to “P” position. 2) Measure resistance between “P” position switch connector terminals. ***Terminal*** ***No. 2 — No. 6:*** Is the measured value less than specified value?	1 Ω	Go to step **13.**	Replace the “P” position switch.

Step		Value	Yes	No
13	**CHECK “P” POSITION SWITCH.** 1) Move the select lever to other than “P” position. 2) Measure resistance between “P” position switch connector terminals. ***Terminal*** ***No. 2 — No. 6:*** Is the measured value more than specified value?	1 MΩ	Go to step **14.**	Replace the “P” position switch.
14	**CHECK OUTPUT SIGNAL FOR INTEGRATED MODULE.** 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. ***Connector & terminal*** ***(B281) No. 3 (+) — Chassis ground (-):*** Is the measured value within specified value?	7.5 — 16 V	Go to step **15.**	Replace the integrated module.
15	**CHECK POOR CONTACT.** Is there poor contact in AT shift lock circuit?	Poor contact in connector.	Repair the poor contact.	Replace the integrated module.