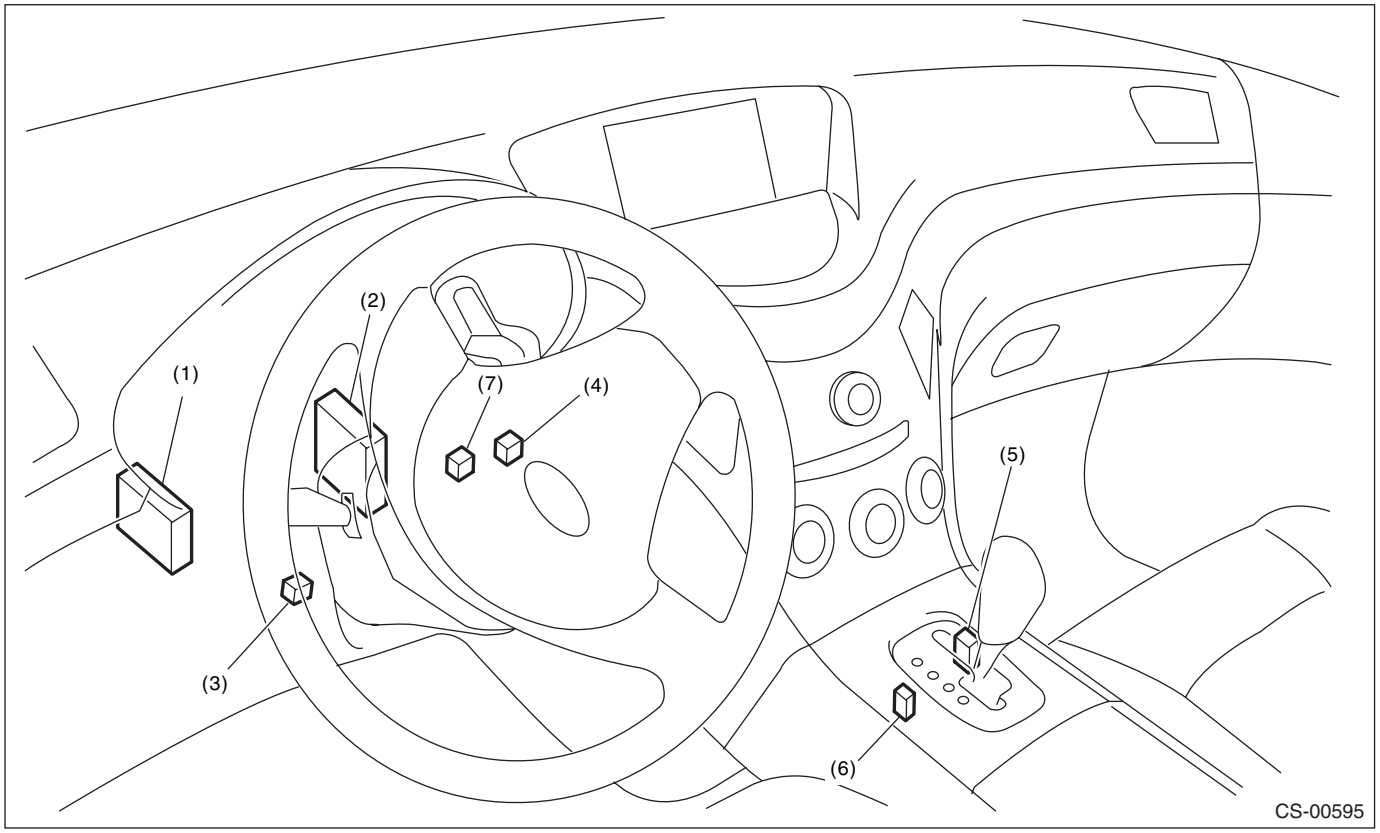
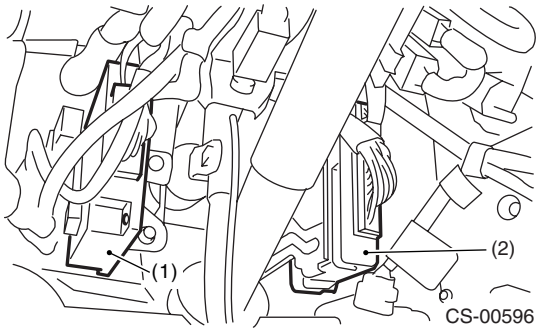
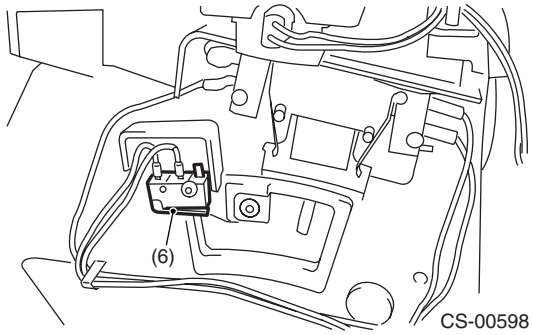
# 2. AT Shift Lock Control System

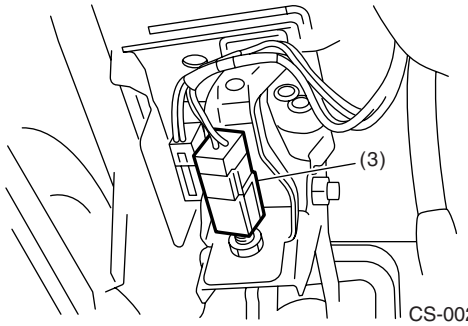
## A: LOCATION

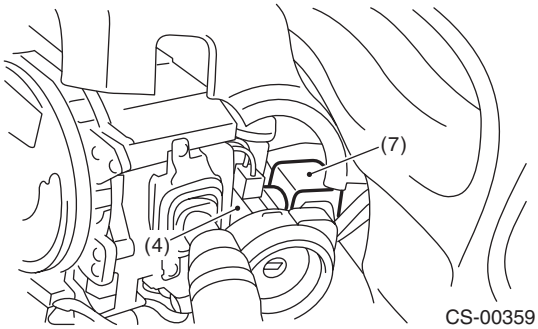


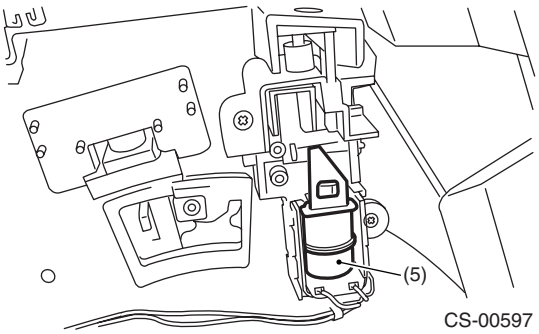

(1) TCM (“P” range)
(2) Body integrated unit
(3) Stop light switch
(4) Key cylinder (with built-in key warning switch)
(5) Shift lock solenoid ASSY
(6) “P” range switch
(7) Key lock solenoid


(1)
(2)
CS-00596

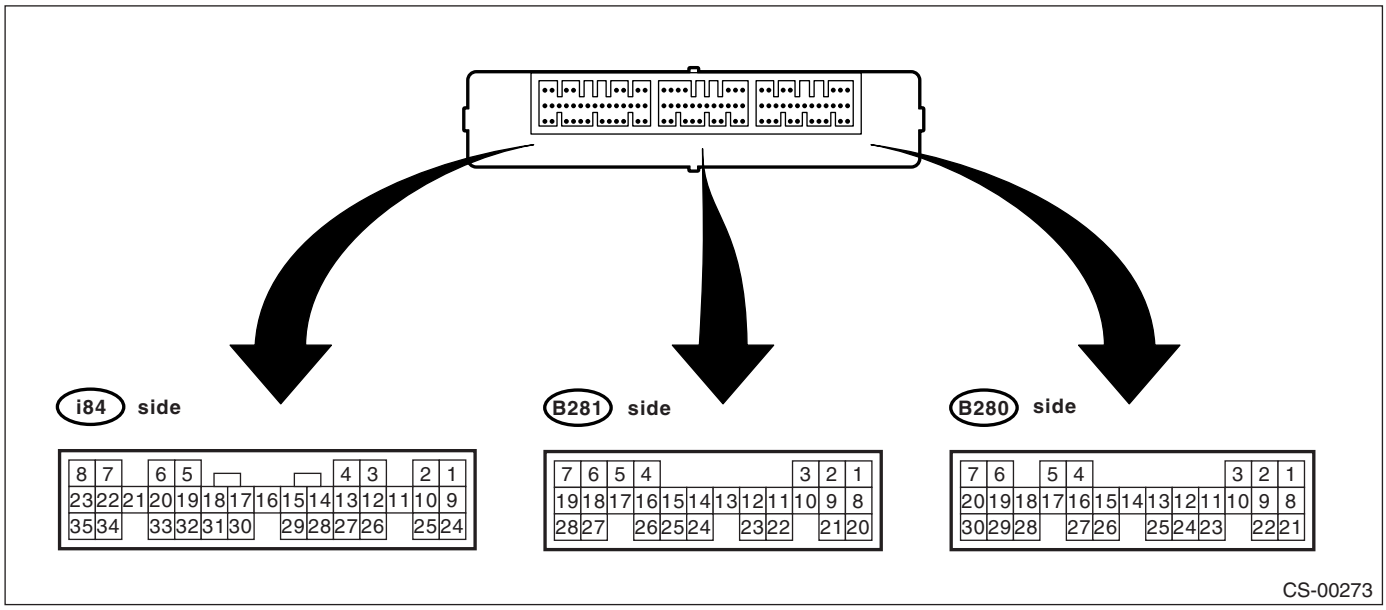

(6)
CS-00598


(3)
CS-00270


(7)
(4)
CS-00359

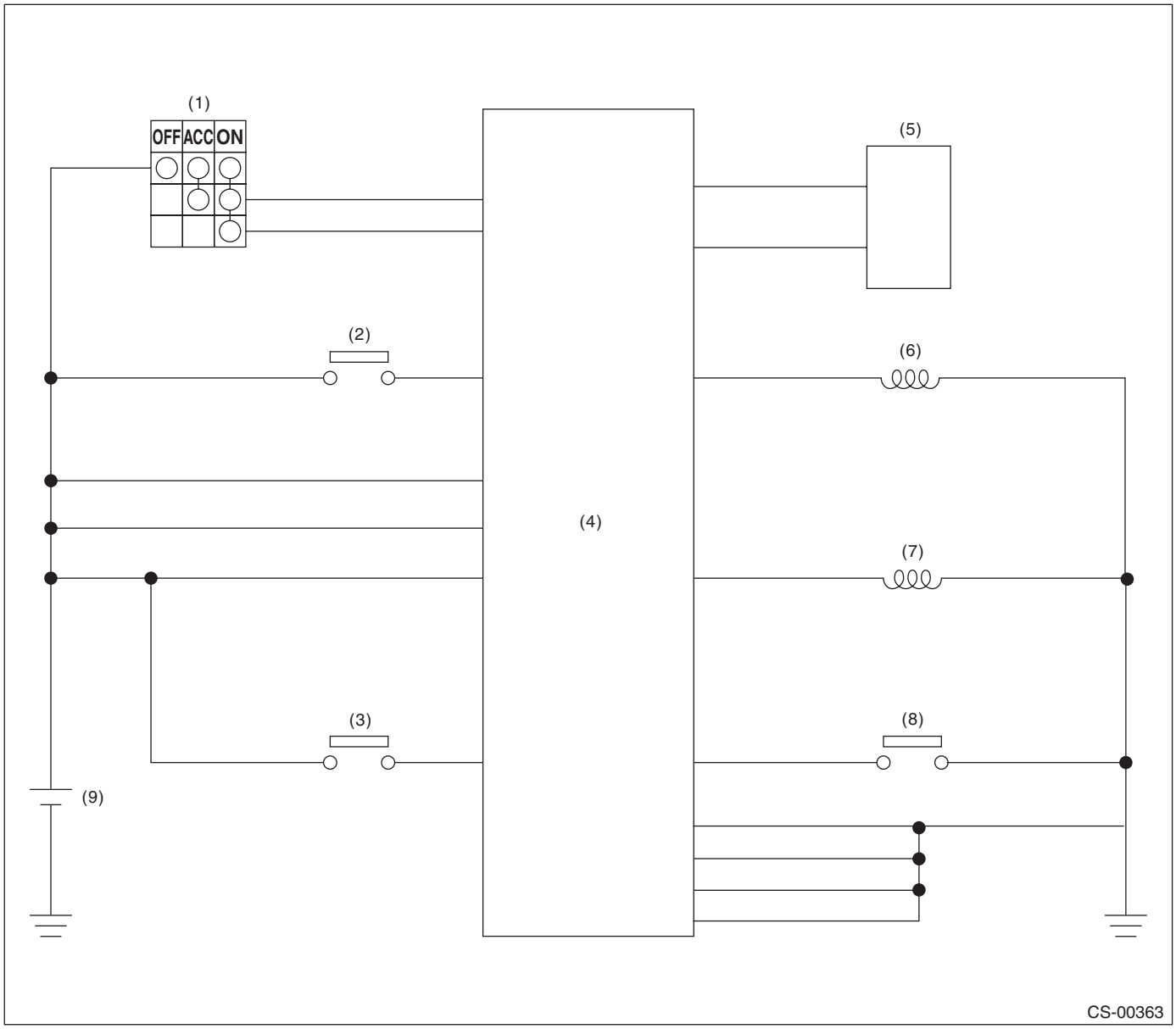

(5)
CS-00597

## B: ELECTRICAL SPECIFICATION




| Item | To connector No. | Terminal No. | Input/Output signal<br>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.<br>0 V when stop light switch is OFF. |
| “P” range switch | B281 | 13 | 0 V when select lever is in “P” range.<br>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.<br>0 V when shift lock is operating. |
| Key warning switch signal | B281 | 7 | 9 — 16 V when key is inserted.<br>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.<br>0 V at other conditions than above. |
| Ground | B280 | 22 | — |
| | i84 | 21 | |
| | B281 | 8 | |
| | | 9 | |

## C: WIRING DIAGRAM



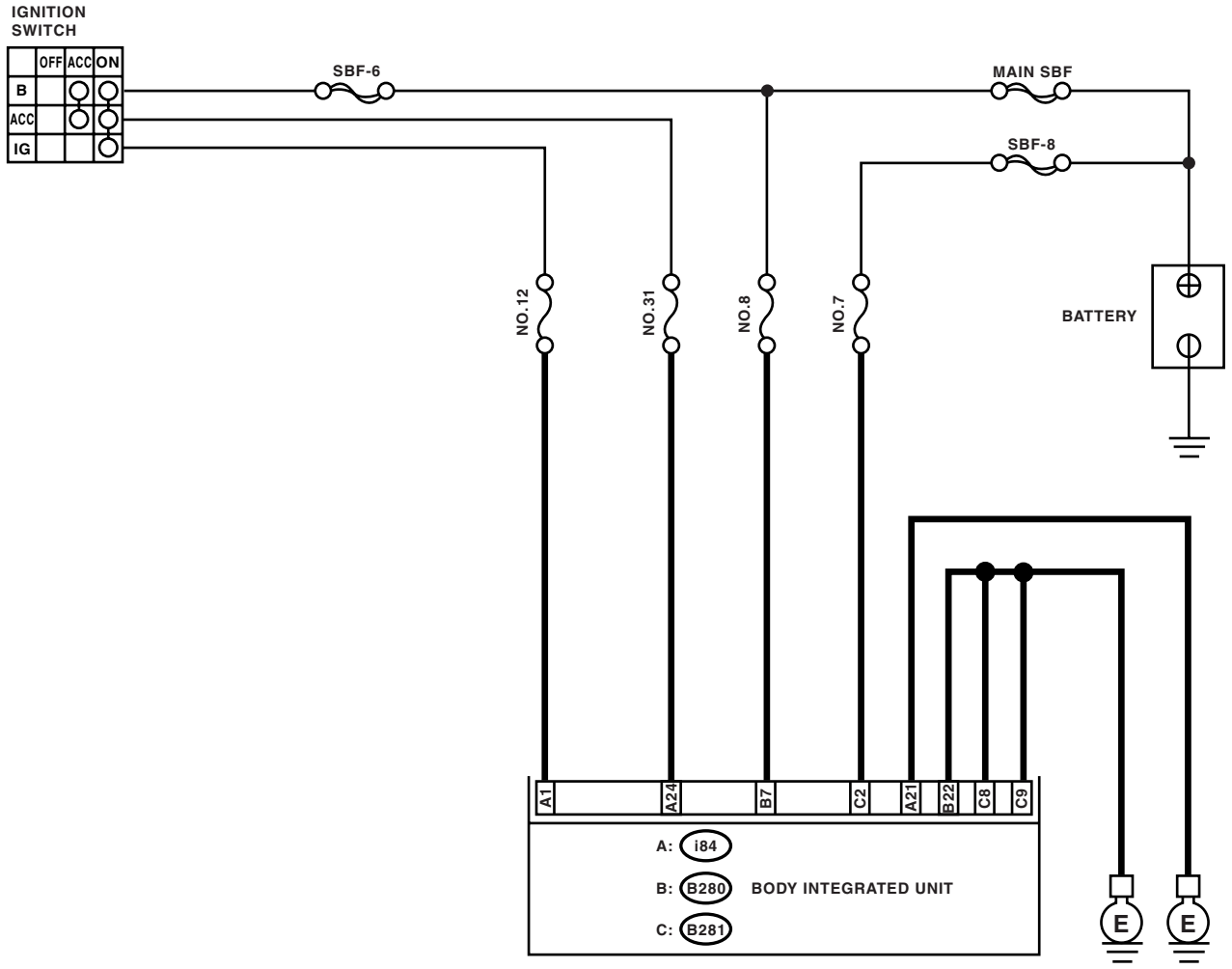

(1) Ignition switch
(2) Stop light switch
(3) Key warning switch
(4) Body integrated unit
(5) TCM (“P” range)
(6) Key lock solenoid
(7) Shift lock solenoid
(8) “P” range switch
(9) Battery

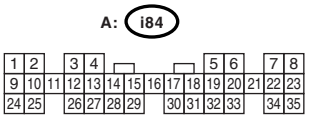
# D: INSPECTION

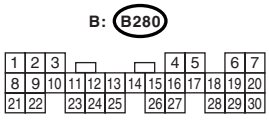
## 1. SHIFT LOCK OPERATION

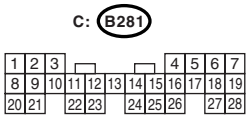
| | Step | Check | Yes | No |
|---|---|---|---|---|
| 1 | **CHECK SHIFT LOCK.**<br>1) Turn the ignition switch to ON.<br>2) Shift the select lever to “P” range. | While brake pedal is not depressed, is it possible to move the select lever from the “P” range to other ranges? | Inspect “SELECT LEVER CANNOT BE SHIFT LOCKED”. <Ref. to CS-12, SELECT LEVER CANNOT BE SHIFTED, INSPECTION, AT Shift Lock Control System.> | Go to step **2**. |
| 2 | **CHECK SHIFT LOCK.** | 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-14, SHIFT LOCK OF SELECT LEVER CANNOT BE RELEASED., INSPECTION, AT Shift Lock Control System.> |
| 3 | **CHECK KEY INTERLOCK.** | Can the ignition switch be turned to the “LOCK” position when the select lever is set to other than “P” range? | Go to step **4**. | Go to step **5**. |
| 4 | **CHECK BACKUP POWER SUPPLY.**<br>Inspect the backup power supply circuit. <Ref. to CS-10, BODY INTEGRATED UNIT POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, AT Shift Lock Control System.> | Is the backup power supply circuit operating properly? | Inspect for “KEY INTERLOCK CANNOT BE LOCKED OR RELEASED”. <Ref. to CS-14, SHIFT LOCK OF SELECT LEVER CANNOT BE RELEASED., INSPECTION, AT Shift Lock Control System.> | Repair the backup power supply circuit. |
| 5 | **CHECK KEY INTERLOCK.** | Can the ignition switch be turned to the LOCK position when the select lever is set to the “P” range? | AT shift lock system is normal. | Inspect for “KEY INTERLOCK CANNOT BE LOCKED OR RELEASED”. <Ref. to CS-14, SHIFT LOCK OF SELECT LEVER CANNOT BE RELEASED., INSPECTION, AT Shift Lock Control System.> |

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



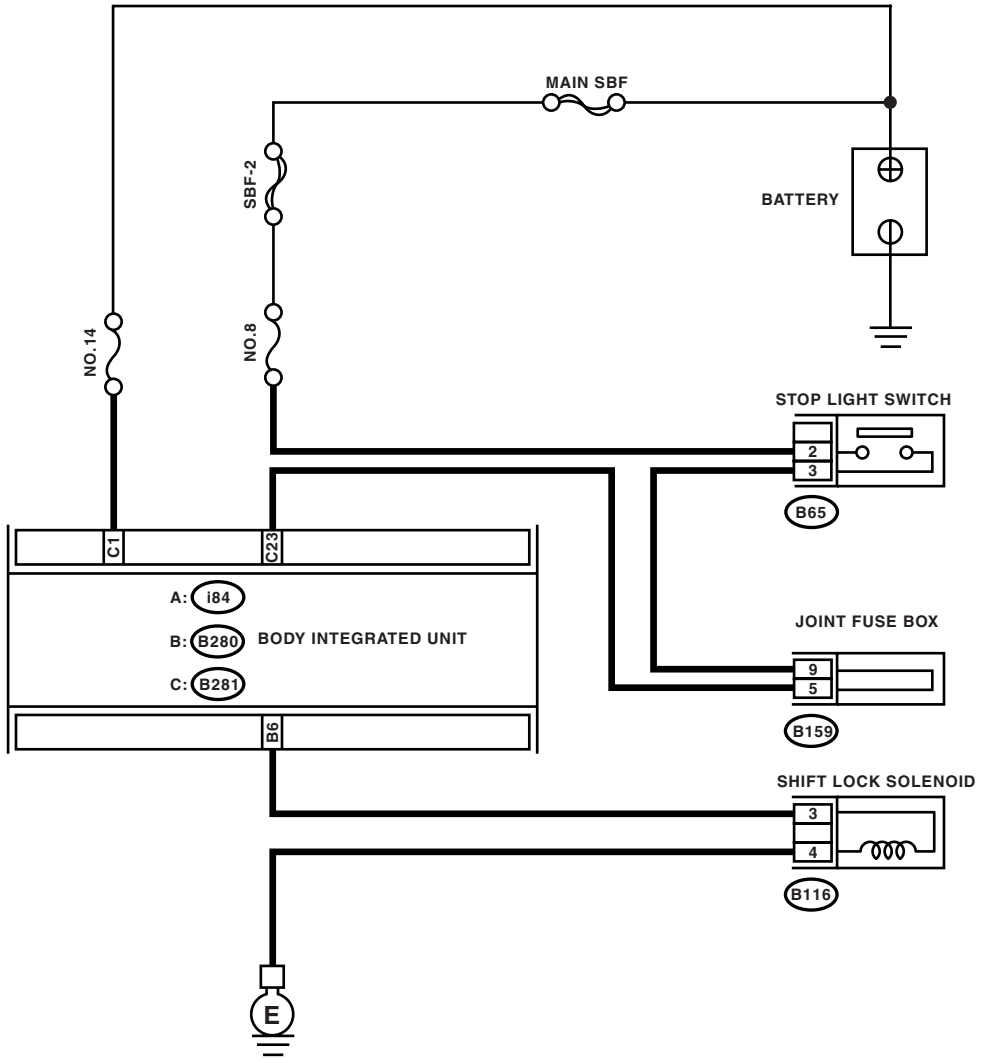



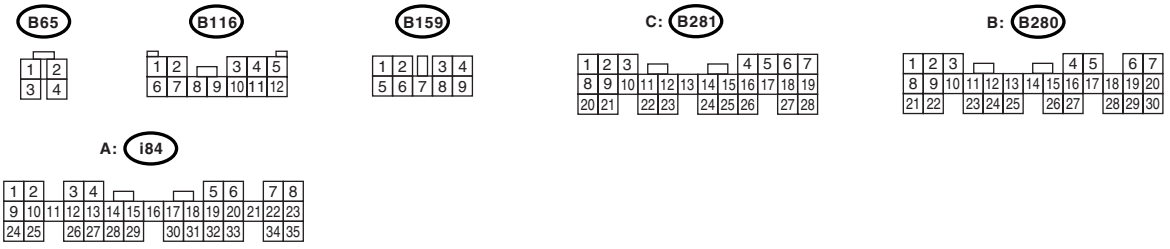




CS-00599

| | Step | Check | Yes | No |
|---|---|---|---|---|
| 1 | **CHECK DTC OF BODY INTEGRATED UNIT.**<br>Check DTC of the body integrated unit.<br><Ref. to LAN(diag)-25, 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**. |
| 2 | **CHECK HARNESS CONNECTOR BETWEEN BODY INTEGRATED UNIT AND CHASSIS GROUND.**<br>1) Turn the ignition switch to OFF.<br>2) Measure the harness resistance between the body integrated unit and chassis ground.<br>***Connector & terminal***<br>***(i84) No. 21 — Chassis ground:***<br>***(B280) No. 22 — Chassis ground:***<br>***(B281) No. 8 — Chassis ground:***<br>***(B281) No. 9 — Chassis ground:*** | 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 | **CHECK POOR CONTACT.** | Is there poor contact in connector? | Repair the poor contact. | Check the body integrated unit. |

## 3. SELECT LEVER CANNOT BE SHIFTED

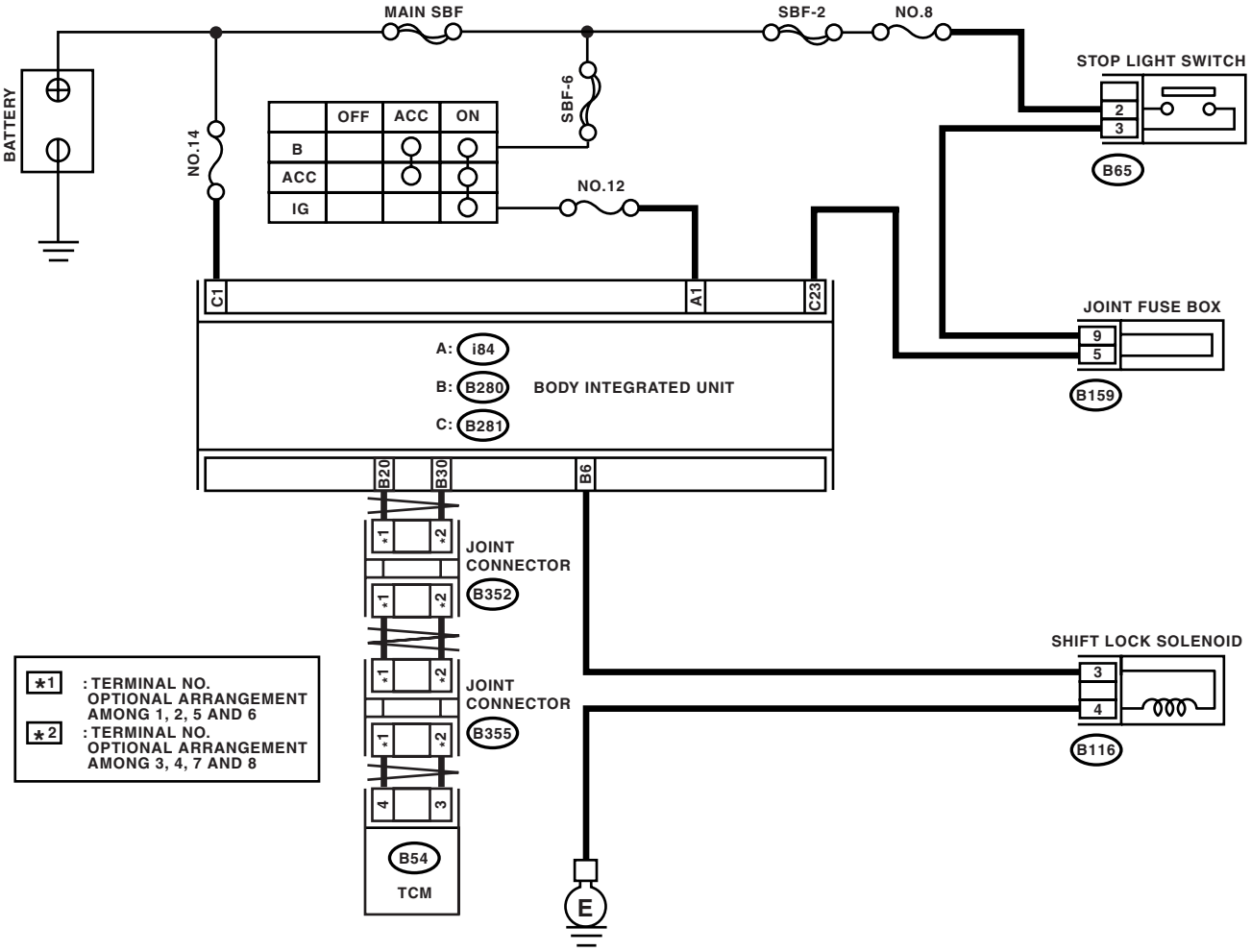


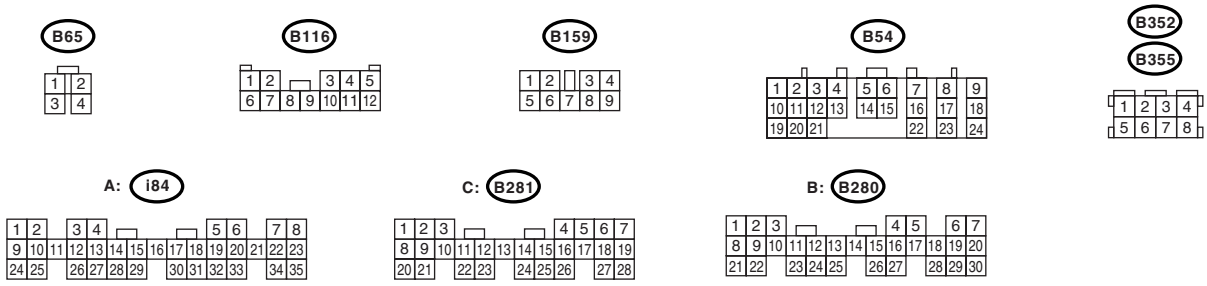




CS-00600

| | Step | Check | Yes | No |
|---|---|---|---|---|
| 1 | **CHECK INPUT SIGNAL OF BODY INTEGRATED UNIT USING SUBARU SELECT MONITOR.**<br>1) Turn the ignition switch to OFF.<br>2) Connect the Subaru Select Monitor to data link connector.<br>3) Turn the ignition switch and Subaru Select Monitor to ON.<br>4) Depress the brake pedal.<br>5) Read the input signal of stop light switch from Subaru Select Monitor.<br><Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.> | Is "ON" displayed? | Go to step **2**. | Go to step **3**. |
| 2 | **CHECK DTC OF BODY INTEGRATED UNIT.**<br>Check DTC of the body integrated unit.<br><Ref. to LAN(diag)-25, OPERATION, Read Diagnostic Trouble Code (DTC).> | Is DTC (B0106) displayed? | Repair or replace it according to the DTC. | Go to step **6**. |
| 3 | **CHECK STOP LIGHT SWITCH.**<br>Depress the brake pedal. | Does the stop light illuminate? | Go to step **4**. | Check the stop light system. |
| 4 | **CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND BODY INTEGRATED UNIT.**<br>1) Turn the ignition switch to OFF.<br>2) Disconnect the connectors of body integrated unit and stop light switch.<br>3) Measure the resistance of harness between stop light switch and body integrated unit.<br>***Connector & terminal***<br>***(B65) No. 3 — (B281) No. 23:*** | Is the resistance more than 1 MΩ? | Repair the open circuit of harness between the body integrated unit and stop light switch. | Go to step **5**. |
| 5 | **CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND BODY INTEGRATED UNIT.**<br>Measure the resistance of harness between stop light switch and chassis ground.<br>***Connector & terminal***<br>***(B65) No. 3 — Chassis ground:*** | 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 | **CHECK SHIFT LOCK SOLENOID.**<br>1) Disconnect the connector of shift lock solenoid.<br>2) Connect the battery to connector terminal of shift lock solenoid, and operate the solenoid.<br>***Terminals***<br>***No. 3 (+) — No. 4 (–):*** | Is the shift lock solenoid operating properly? | Go to step **7**. | Replace the shift lock solenoid. |
| 7 | **CHECK SHIFT LOCK OPERATION.**<br>1) Connect all the connectors.<br>2) Shift the select lever to "P" range.<br>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. |

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

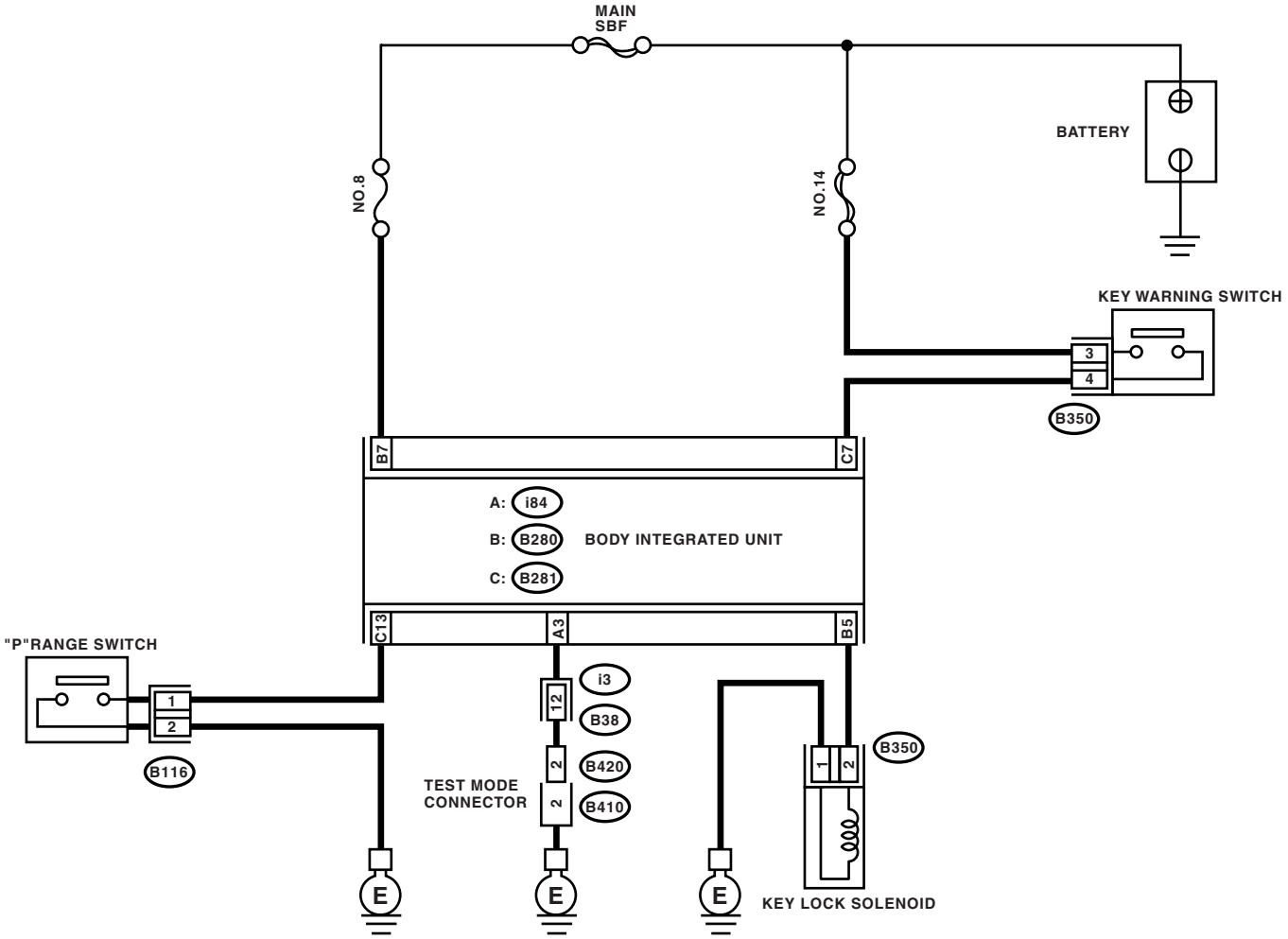


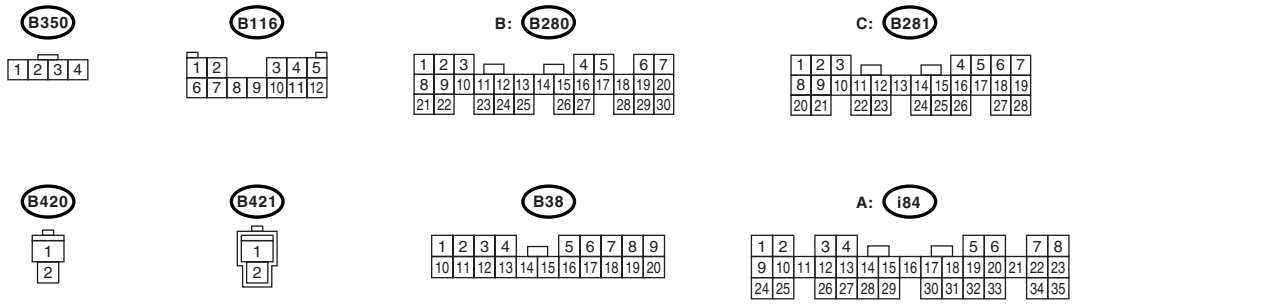




CS-00601

| | Step | Check | Yes | No |
|---|---|---|---|---|
| 1 | **CHECK INPUT SIGNAL OF BODY INTEGRATED UNIT USING SUBARU SELECT MONITOR.**<br>1) Turn the ignition switch to OFF.<br>2) Connect the Subaru Select Monitor to data link connector.<br>3) Turn the ignition switch and Subaru Select Monitor to ON.<br>4) Read the input signal of shift position from Subaru Select Monitor.<br><Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.> | Is "7" displayed? | Go to step **2**. | Check the TCM and body integrated unit. |
| 2 | **CHECK INPUT SIGNAL OF BODY INTEGRATED UNIT USING SUBARU SELECT MONITOR.**<br>Read the input signal of stop light switch from Subaru Select Monitor.<br><Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.> | Is "ON" displayed? | Go to step **5**. | Go to step **3**. |
| 3 | **CHECK STOP LIGHT SWITCH.**<br>Depress the brake pedal. | Does the stop light illuminate? | Go to step **4**. | Check the stop light system. |
| 4 | **CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND BODY INTEGRATED UNIT.**<br>1) Depress the brake pedal.<br>2) Measure the voltage between body integrated unit and chassis ground.<br>***Connector & terminal***<br>***(B281) No. 23 (+) — Chassis ground (–):*** | Is the voltage more than 9 V? | Go to step **5**. | Repair the open or short circuit of harness between the body integrated unit and stop light switch. |
| 5 | **CHECK DTC OF BODY INTEGRATED UNIT.**<br>Check DTC of the body integrated unit.<br><Ref. to LAN(diag)-25, OPERATION, Read Diagnostic Trouble Code (DTC).> | Is DTC (B0106) displayed? | Repair or replace it according to the DTC. | Go to step **6**. |
| 6 | **CHECK SHIFT LOCK SOLENOID.**<br>1) Turn the ignition switch to OFF.<br>2) Disconnect the connector of shift lock solenoid.<br>3) Connect the battery to connector terminal of shift lock solenoid, and operate the solenoid.<br>***Terminals***<br>***No. 3 (+) — No. 4 (–):*** | Is the shift lock solenoid operating properly? | Go to step **7**. | Replace the shift lock solenoid. |
| 7 | **CHECK OPERATION.**<br>1) Connect all the connectors.<br>2) Turn the ignition switch ON. (Engine OFF)<br>3) Shift the select lever to "P" range.<br>4) Depress the brake pedal.<br>5) Shift the select lever from "P" range to "R" range. | Can the select lever shift from "P" range to "R" range? | A temporary poor contact of connector or harness may be the cause. | Check the body integrated unit. |

## 5. KEY INTERLOCK DOES NOT LOCK OR RELEASE




CS-00602

| | Step | Check | Yes | No |
|---|---|---|---|---|
| 1 | **CHECK INPUT SIGNAL OF BODY INTEGRATED UNIT USING SUBARU SELECT MONITOR.**<br>1) Turn the ignition switch to OFF.<br>2) Connect the Subaru Select Monitor to data link connector.<br>3) Turn the ignition switch and Subaru Select Monitor to ON.<br>4) Read the input signal of the key warning switch from the Subaru Select Monitor.<br><Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.> | Is "ON" displayed? | Go to step **2**. | Go to step **4**. |
| 2 | **CHECK INPUT SIGNAL OF BODY INTEGRATED UNIT USING SUBARU SELECT MONITOR.**<br>1) Shift the select lever to "P" range.<br>2) Read the input signal of "P" range switch from Subaru Select Monitor.<br><Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.> | Is "ON" displayed? | Go to step **3**. | Go to step **8**. |
| 3 | **CHECK DTC OF BODY INTEGRATED UNIT.**<br>Check DTC of the body integrated unit.<br><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 | **CHECK HARNESS BETWEEN BATTERY AND KEY WARNING SWITCH.**<br>1) Disconnect the connector of key warning switch.<br>2) Measure the voltage of harness between key warning switch and chassis ground.<br>***Connector & terminal***<br>***(B350) No. 3 (+) — Chassis ground (–):*** | 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 | **CHECK KEY WARNING SWITCH.**<br>Measure the resistance between connector terminals of key warning switch.<br>***Terminals***<br>***No. 3 — No. 4:*** | Is the resistance more than 1 MΩ? | Replace the key warning switch. | Go to step **6**. |
| 6 | **CHECK KEY WARNING SWITCH.**<br>1) Remove the key.<br>2) Measure the resistance between connector terminals of key warning switch.<br>***Terminals***<br>***No. 3 — No. 4:*** | Is the resistance more than 1 MΩ? | Go to step **7**. | Replace the key warning switch. |
| 7 | **CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND KEY WARNING SWITCH.**<br>1) Disconnect the connector of body integrated unit.<br>2) Measure the voltage between body integrated unit and chassis ground.<br>***Connector & terminal***<br>***(B281) No. 7 (+) — Chassis ground (–):*** | Is the voltage more than 9 V? | Go to step **8**. | Repair the open circuit of harness between body integrated unit and key warning switch. |
| 8 | **CHECK HARNESS BETWEEN "P" RANGE SWITCH AND CHASSIS GROUND.**<br>Measure the resistance of harness between "P" range switch and chassis ground.<br>***Connector & terminal***<br>***(B116) No. 1 — Chassis ground:*** | 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. |

| | Step | Check | Yes | No |
|---|---|---|---|---|
| 9 | **CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND "P" RANGE SWITCH.**<br>1) Disconnect the connector of the "P" range switch.<br>2) Measure the resistance of harness between the body integrated unit and the "P" range switch.<br>***Connector & terminal***<br>***(B116) No. 1 — (B281) No. 13:*** | Is the resistance more than 1 MΩ? | Repair the open circuit of harness between the body integrated unit and the "P" range switch. | Go to step **10**. |
| 10 | **CHECK HARNESS BETWEEN "P" RANGE SWITCH AND CHASSIS GROUND.**<br>Measure the resistance of harness between "P" range switch and chassis ground.<br>***Connector & terminal***<br>***(B116) No. 2 — Chassis ground:*** | Is the resistance more than 1 MΩ? | Repair the open circuit of harness between "P" range switch and chassis ground. | Go to step **11**. |
| 11 | **CHECK "P" RANGE SWITCH.**<br>1) Shift the select lever to "P" range.<br>2) Measure the resistance between "P" range switch connector terminals.<br>***Terminals***<br>***No. 2 — No. 1:*** | Is the resistance less than 1 Ω? | Go to step **12**. | Replace the "P" range switch. |
| 12 | **CHECK "P" RANGE SWITCH.**<br>1) Shift the select lever to other than "P" range.<br>2) Measure the resistance between "P" range switch connector terminals.<br>***Terminals***<br>***No. 2 — No. 1:*** | Is the resistance more than 1 MΩ? | Go to step **13**. | Replace the "P" range switch. |
| 13 | **CHECK OPERATION.**<br>Inspect the backup power supply circuit. <Ref. to CS-10, 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 | **CHECK TEST MODE CONNECTOR.**<br>1) Check that the test mode connector is disconnected.<br>2) Measure the resistance between body integrated unit and chassis ground.<br>***Connector & terminal***<br>***(B281) No.11 — Chassis ground:*** | Is the resistance more than 1 MΩ? | Go to step **15**. | Repair the short circuit of the harness between body integrated unit and test mode connector. |
| 15 | **CHECK OPERATION.**<br>1) Connect all the connectors.<br>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. |