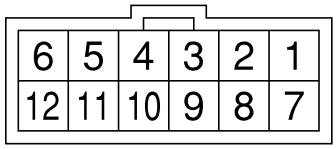
# 3. AT Shift Lock System S501240

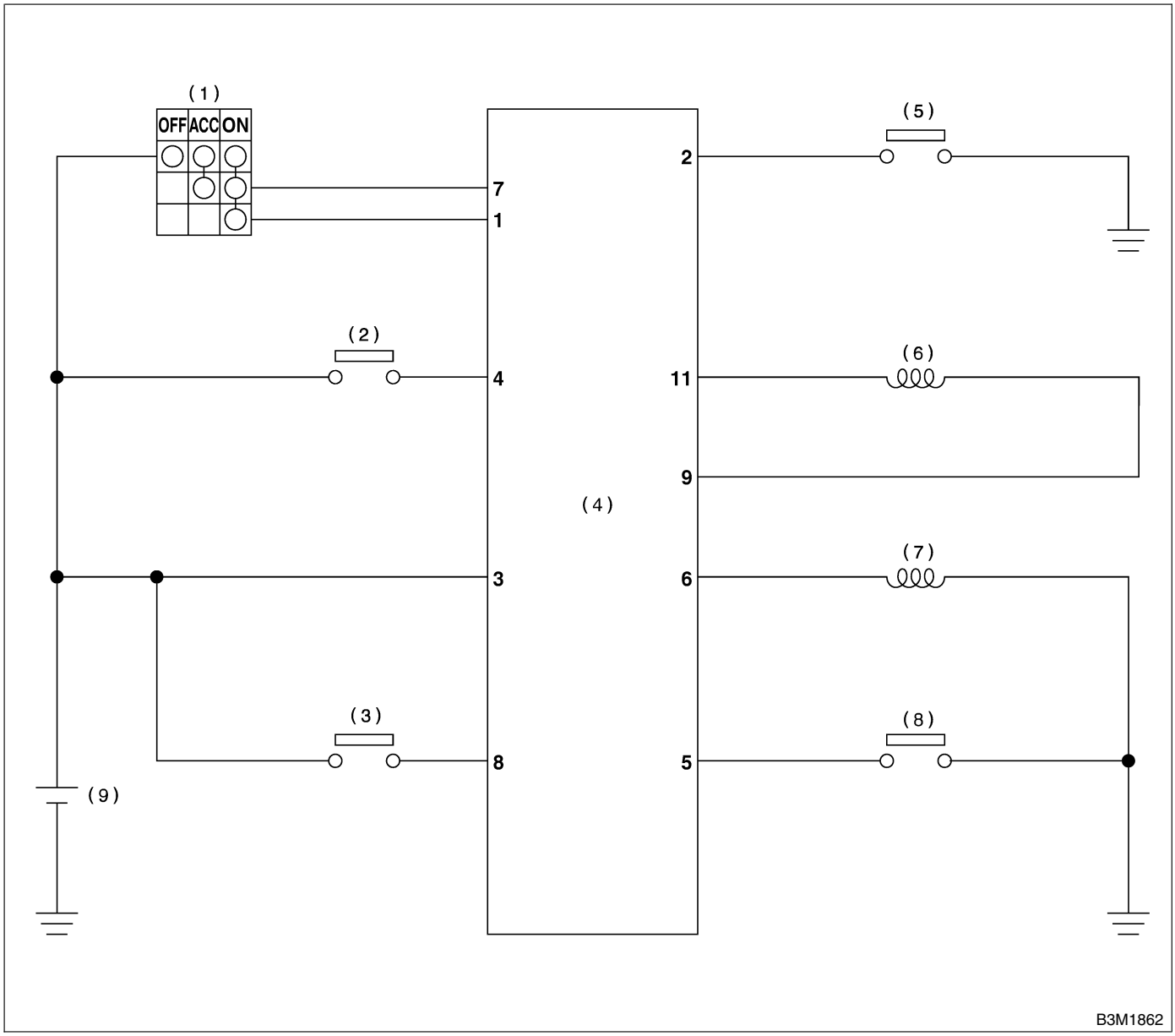
## A: ELECTRICAL SPECIFICATION S501240A08




B3M1861

| Contents | Terminal No. (+) — (–) | Input/Output signal |
|---|---|---|
| | | Measured value and measuring conditions |
| Back-up power supply | 3 — 10 | 10 — 15 V |
| Ignition power supply | 1 — 10 | 10 — 15 V when ignition switch is ON or START. |
| Ignition power supply | 7 — 10 | 10 — 15 V when ignition switch is ACC. |
| Inhibitor Switch (“P” position) | 2 — 10 | 0 V when select lever is in “P” position.<br>5 - 7 V when select lever is in other positions than “P” position. |
| Stop light switch | 4 — 10 | 10 - 15 V when stop light switch is ON.<br>0 V when stop light switch is OFF. |
| “P” position switch | 5 — 10 | 0 V when select lever is in “P” position.<br>5 - 7 V when select lever is in other positions than “P” position. |
| Shift lock solenoid signal | 6 — 10 | 10 - 15 V when shift lock is released.<br>0 V when shift lock is operating. |
| Key warning switch signal | 8 — 10 | 10 - 15 V when key is inserted.<br>0 V when key is removed. |
| Key lock solenoid signal | 9 — 10 | 8.5 — 15 V when turning ignition switch ON, select lever is in “P” position and brake switch is ON.<br>0 V at other conditions than above. |
| Key lock solenoid signal ground | 11 — 10 | 0 V |
| Ground | 10 | — |

## B: SCHEMATIC S501240A21



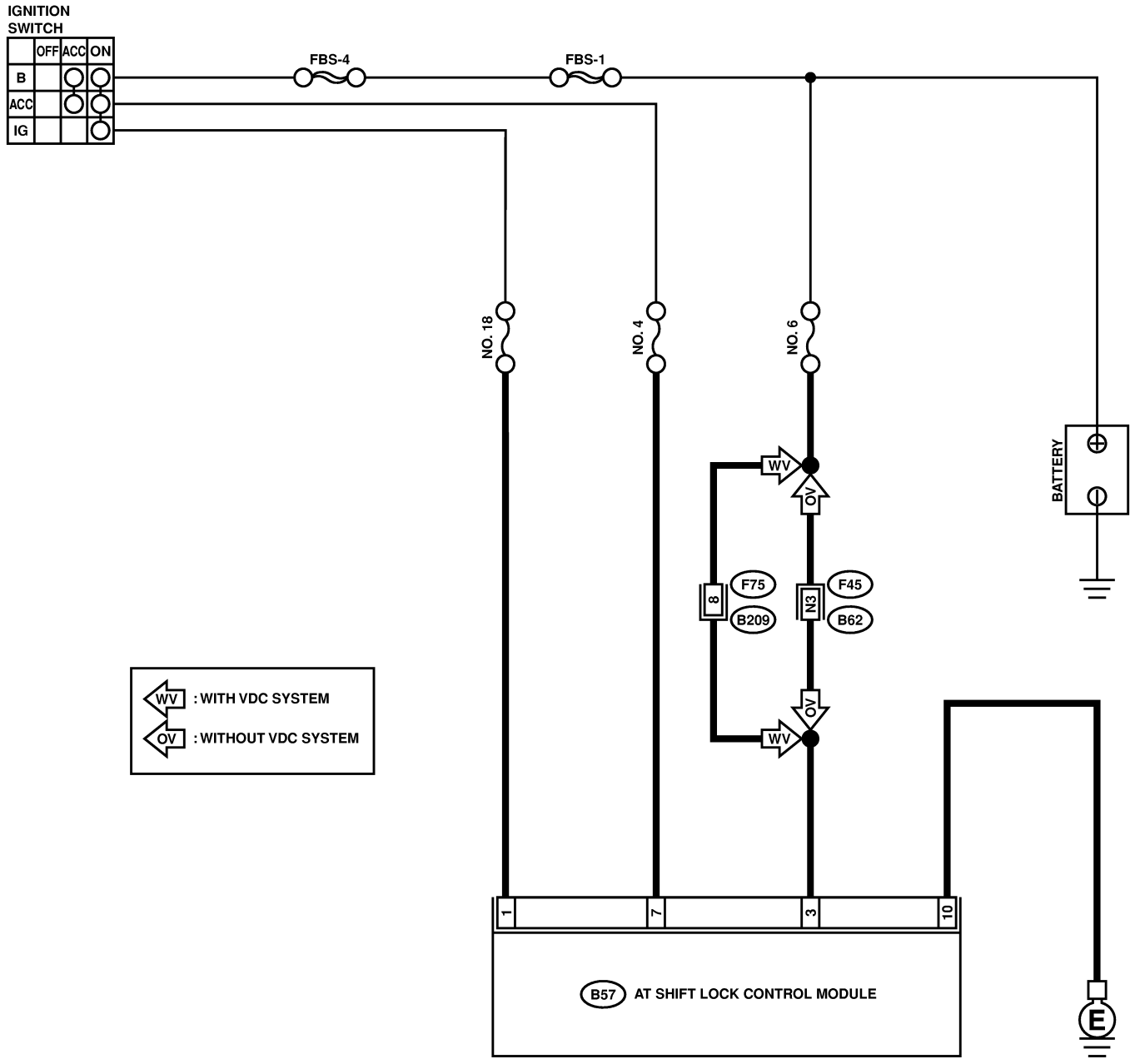

(1) Ignition switch
(2) Stop light switch
(3) Key warning switch
(4) AT shift lock control module
(5) Inhibitor switch
(6) Key lock solenoid
(7) Shift lock solenoid
(8) “P” position switch
(9) Battery

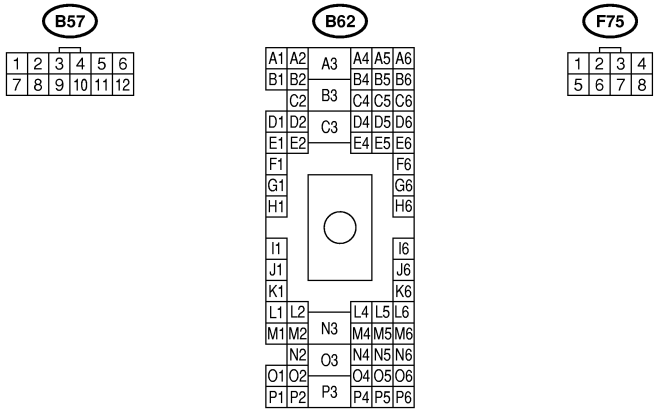
## C: INSPECTION S501240A10

| No. | Step | Check | Yes | No |
|---|---|---|---|---|
| 1 | **CHECK SHIFT LOCK.**<br>1) Turn ignition switch ON.<br>2) Move select lever to “P” position. | While brake pedal is depressed, can select lever move from “P” position to other positions? | Go to step **2**. | Inspect “SELECT LEVER CANNOT BE SHIFT LOCKED”. <Ref. to CS-13, SELECT LEVER CANNOT BE SHIFT LOCKED, INSPECTION, AT Shift Lock System.> |
| 2 | **CHECK SHIFT LOCK.** | While brake pedal is not depressed, can select lever move from “P” position to other positions? | Inspect “SELECT LEVER SHIFT LOCK CANNOT BE RELEASED”. <Ref. to CS-16, SELECT LEVER SHIFT LOCK CANNOT BE RELEASED, INSPECTION, AT Shift Lock System.> | Go to step **3**. |
| 3 | **CHECK KEY INTER LOCK.** | When select lever is in other than “P” position, does ignition switch turn to “LOCK” position? Or when select lever is in “P” position, does ignition switch not turn to “LOCK” position? | Inspect “KEY INTERLOCK DOES NOT BE LOCKED OR RELEASED. <Ref. to CS-19, KEY INTERLOCK DOES NOT LOCK OR RELEASE, INSPECTION, AT Shift Lock System.> | AT shift lock system is normal. |

## 1. AT SHIFT LOCK CONTROL MODULE POWER SUPPLY AND GROUND LINE S501240A1001

**WIRING DIAGRAM:**



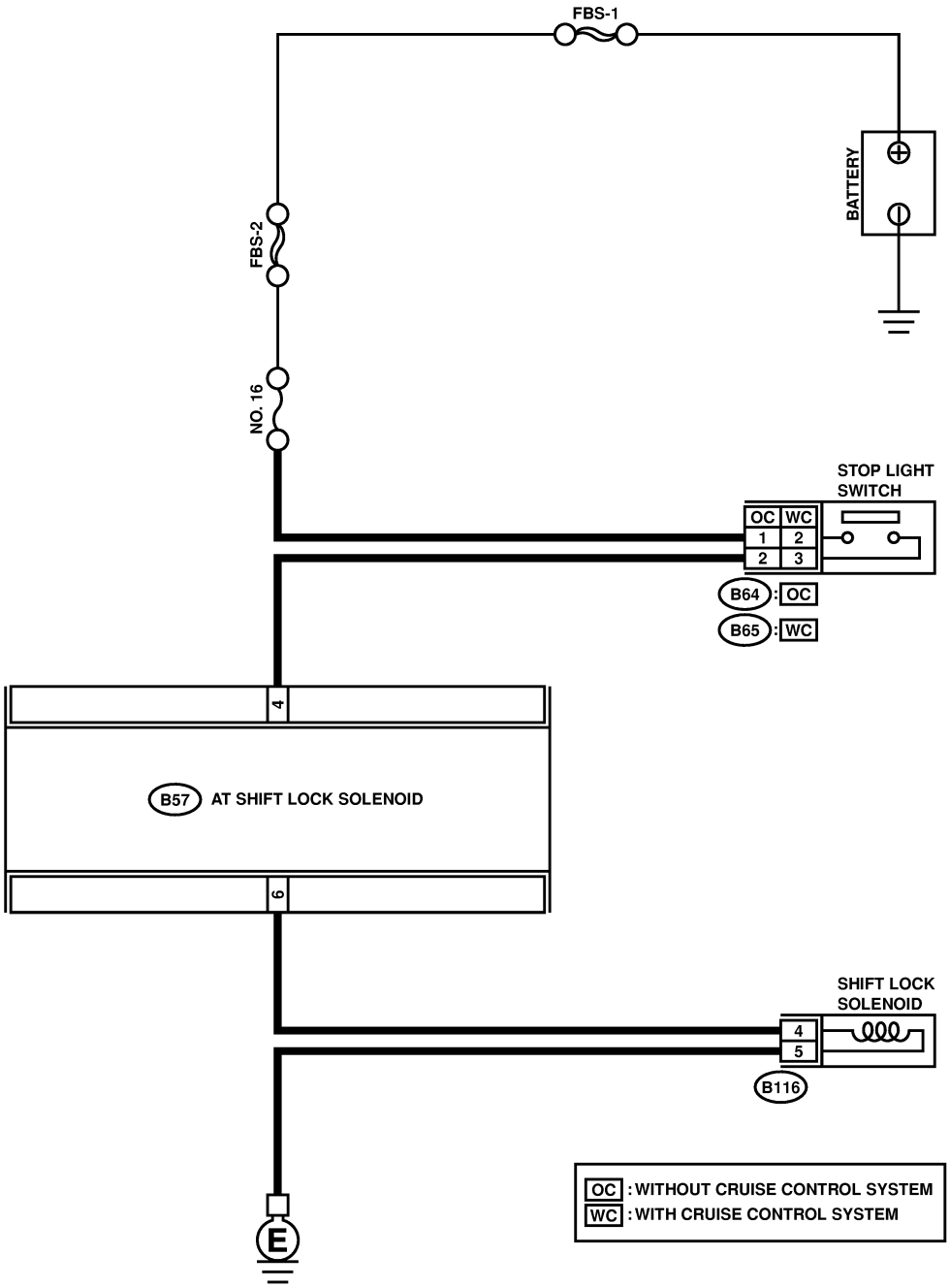



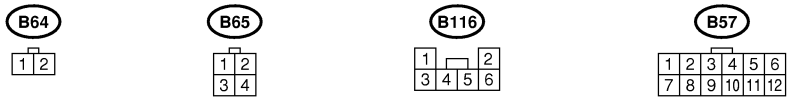

B3M2201

| No. | Step | Check | Yes | No |
|---|---|---|---|---|
| 1 | **CHECK FUSE.**<br>1) Remove the fuse (No. 6, 18 and 4). | Is the fuse (No. 6, 18 or 4) blown out? | Replace the fuse (No. 6, 18 or 4). If replace fuse (No. 6, 18 or 4) has blown out easily, repair short circuit in harness between fuse and AT shift lock control module. | Go to step **2**. |
| 2 | **CHECK HARNESS CONNECTOR BETWEEN AT SHIFT LOCK CONTROL MODULE AND CHASSIS GROUND.**<br>1) Turn ignition switch to OFF.<br>2) Measure the resistance of harness between AT shift lock control module and chassis ground.<br>***Connector & terminal***<br>***(B57) No. 10 — Chassis ground:*** | Is the resistance less than 1 Ω? | Go to step **3**. | Repair open circuit in harness between AT shift lock control module and body ground. |
| 3 | **CHECK BATTERY POWER SUPPLY.**<br>1) Measure the voltages between AT shift lock control module and chassis ground.<br>***Connector & terminal***<br>***(B57) No. 3 (+) — Chassis ground (–):*** | Is the voltage more than 10 V? | Go to step **4**. | Repair open or short circuit in harness between battery and AT shift lock control module, and poor contact in coupling connector. |
| 4 | **CHECK IGNITION POWER SUPPLY CIRCUIT.**<br>1) Turn ignition switch to ACC.<br>2) Measure the voltage between AT shift lock control module and chassis ground.<br>***Connector & terminal***<br>***(B57) No. 7 (+) — Chassis ground (–):*** | Is the voltage more than 10 V? | Go to step **5**. | Repair open or short circuit in harness between battery and AT shift lock control module, and poor contact in coupling connector. |
| 5 | **CHECK IGNITION POWER SUPPLY CIRCUIT.**<br>1) Turn ignition switch to ON (engine OFF).<br>2) Measure the voltage between AT shift lock control module and chassis ground.<br>***Connector & terminal***<br>***(B57) No. 1 (+) — Chassis ground (–):*** | Is the voltage more than 10 V? | Go to step **6**. | Repair open or short circuit in harness between battery and AT shift lock control module, and poor contact in coupling connector. |
| 6 | **CHECK POOR CONTACT.** | Is there poor contact in power supply and ground line circuit? | Repair poor contact. | Replace AT shift lock control module. |

## 2. SELECT LEVER CANNOT BE SHIFT LOCKED S501240A1002

**WIRING DIAGRAM:**



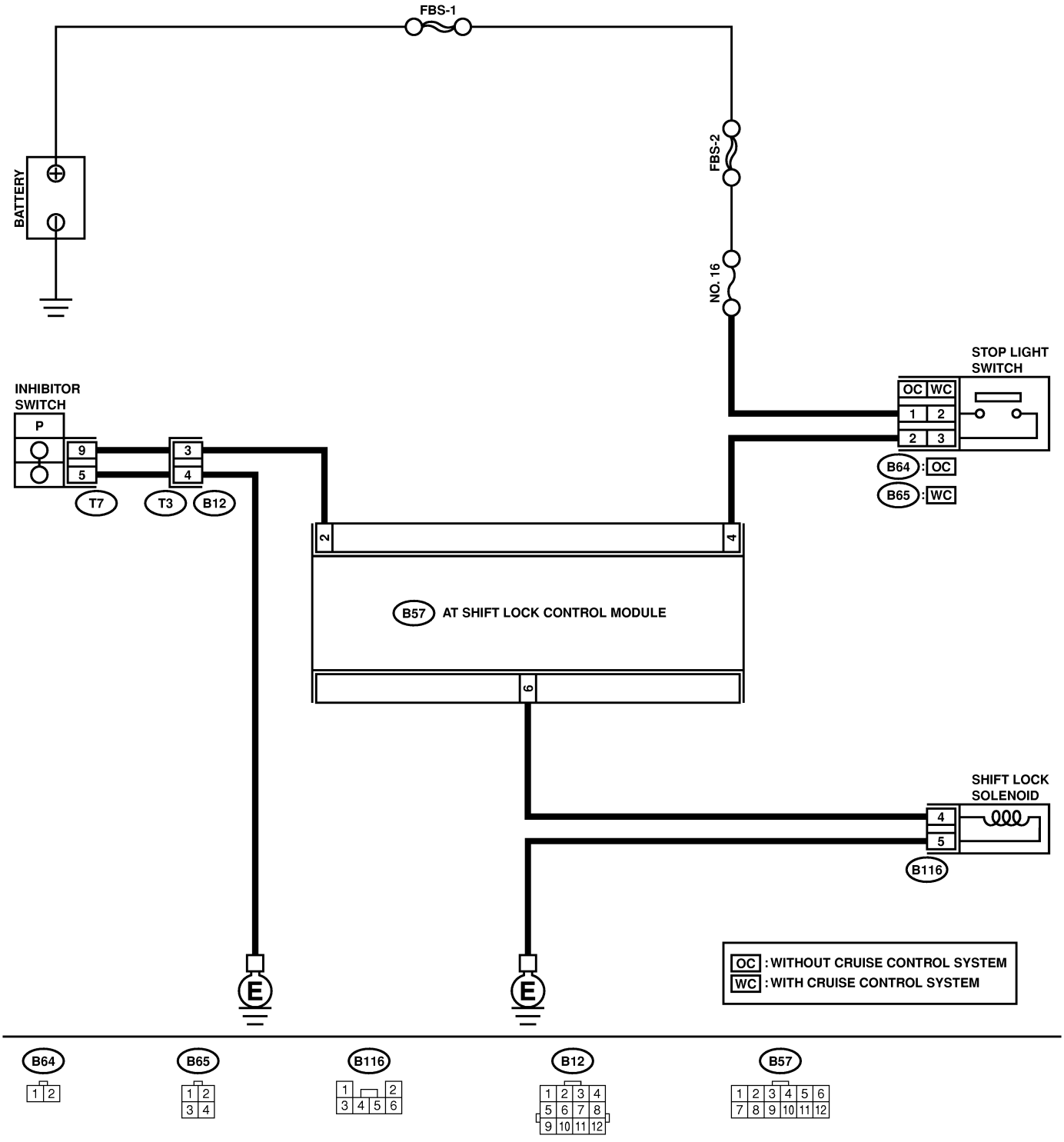

B3M2202

| No. | Step | Check | Yes | No |
|---|---|---|---|---|
| 1 | **CHECK STOP LIGHT SWITCH.**<br>Depress brake pedal. | Does stop light turn ON? | Go to step **2**. | Inspect stop light system. |
| 2 | **CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND AT SHIFT LOCK CONTROL MODULE.**<br>1) Turn ignition switch to OFF.<br>2) Disconnect stop light switch and AT shift lock control module.<br>3) Measure the resistance of harness between stop light switch and AT shift lock control module.<br>***Connector & terminal***<br>***Without cruise control model***<br>***(B64) No. 2 — (B57) No. 4:***<br>***With cruise control model***<br>***(B65) No. 3 — (B57) No. 4:*** | Is the resistance more than 1 MΩ? | Repair open circuit in harness between AT shift lock control module and stop light switch. | Go to step **3**. |
| 3 | **CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND AT SHIFT LOCK CONTROL MODULE.**<br>1) Measure the resistance of harness between stop light switch and chassis ground.<br>***Connector & terminal***<br>***Without cruise control model***<br>***(B64) No. 2 — Chassis ground:***<br>***With cruise control model***<br>***(B65) No. 3 — Chassis ground:*** | Is the resistance more than 1 MΩ? | Go to step **4**. | Repair short circuit in harness between AT shift lock control module and stop light switch. |
| 4 | **CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND SHIFT LOCK SOLENOID.**<br>1) Disconnect shift lock solenoid connector.<br>2) Measure the resistance of harness between AT shift lock control module and shift lock solenoid.<br>***Connector & terminal***<br>***(B116) No. 4 — (B57) No. 6:*** | Is the resistance less than 1 Ω? | Go to step **5**. | Repair open circuit in harness between AT shift lock control module and shift lock solenoid. |
| 5 | **CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND SHIFT LOCK SOLENOID.**<br>Measure the resistance of harness between shift lock solenoid and chassis ground.<br>***Connector & terminal***<br>***(B116) No. 4 — Chassis ground:*** | Is the resistance more than 1 MΩ? | Go to step **6**. | Repair short circuit in harness between AT shift lock control module and shift lock solenoid. |
| 6 | **CHECK HARNESS BETWEEN SHIFT LOCK SOLENOID AND CHASSIS GROUND.**<br>Measure the resistance of harness between shift lock solenoid and chassis ground.<br>***Connector & terminal***<br>***(B116) No. 5 — Chassis ground:*** | Is the resistance more than 1 MΩ? | Repair open circuit in harness between shift lock solenoid and body ground. | Go to step **7**. |
| 7 | **CHECK SHIFT LOCK SOLENOID.**<br>Measure the resistance of shift lock solenoid connector terminals.<br>***Terminal***<br>***No. 4 — No. 5:*** | Is the resistance between 10 and 20 Ω? | Go to step **8**. | Replace shift lock solenoid. |
| 8 | **CHECK SHIFT LOCK SOLENOID.**<br>Connect battery with shift lock solenoid connector terminal and operate solenoid.<br>***Terminal***<br>***No. 4 (+) — No. 5 (–):*** | Does shift lock solenoid operate properly? | Go to step **9**. | Replace shift lock solenoid. |

| No. | Step | Check | Yes | No |
|---|---|---|---|---|
| 9 | **CHECK POOR CONTACT.** | Is there poor contact in key lock circuit? | Repair poor contact. | Replace AT shift lock control module. |

## 3. SELECT LEVER SHIFT LOCK CANNOT BE RELEASED S501240A1003

**WIRING DIAGRAM:**



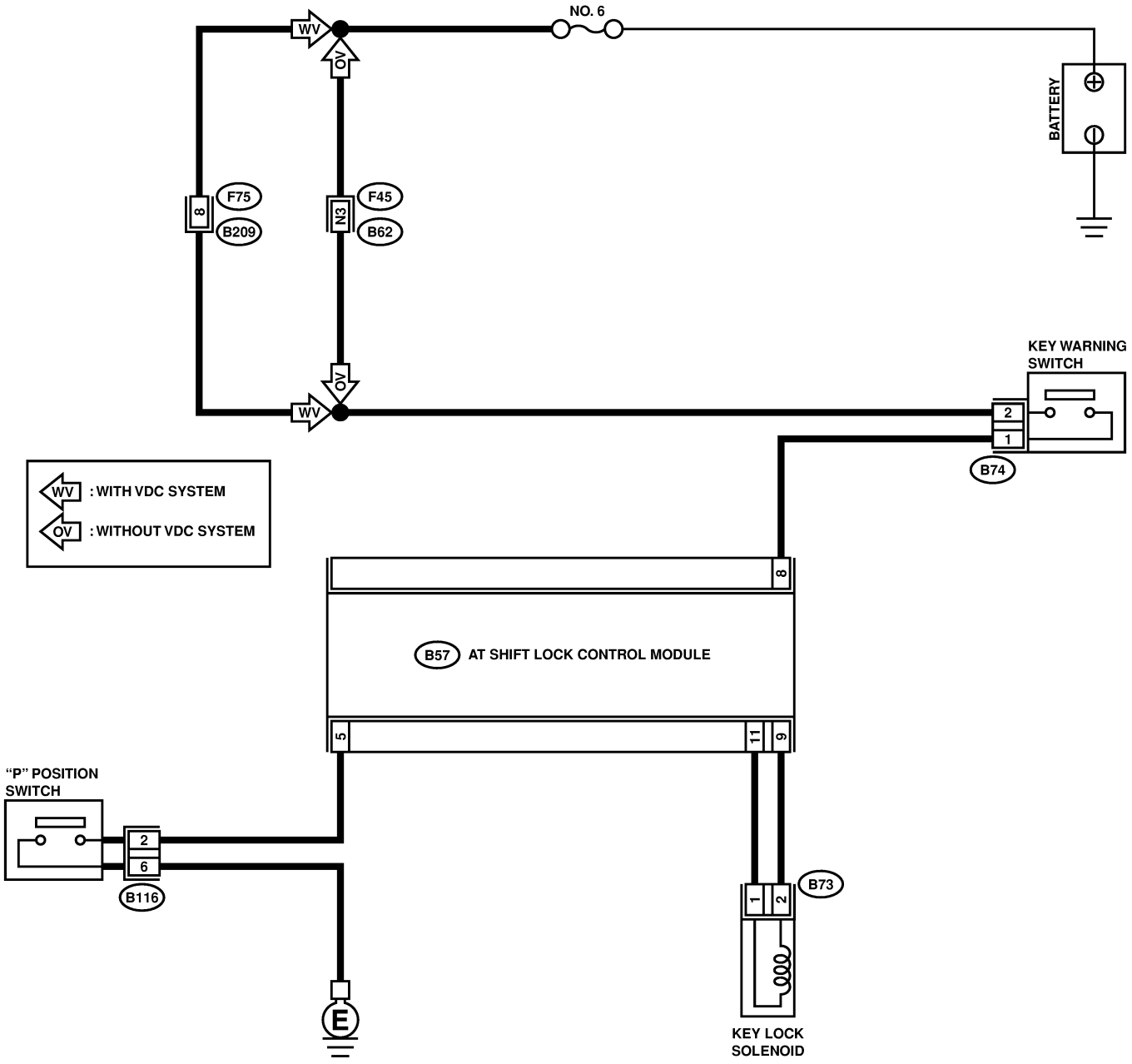

B3M2203

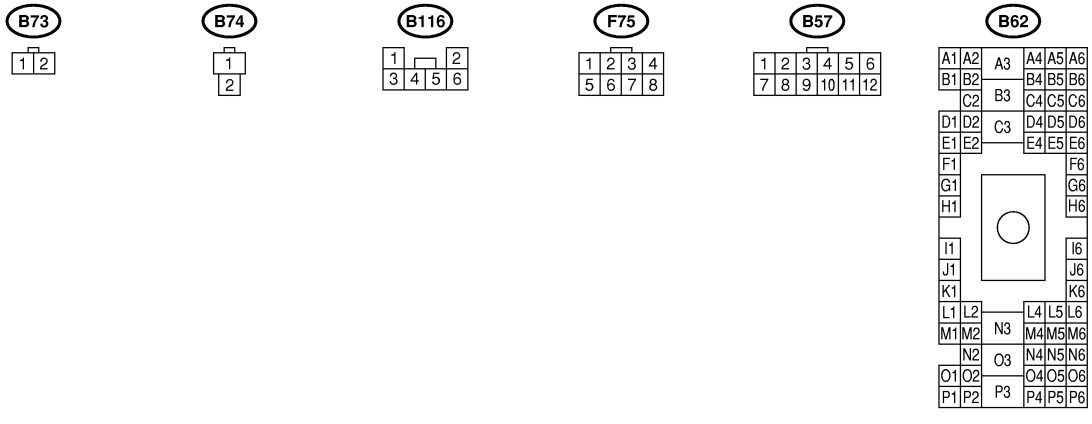
| No. | Step | Check | Yes | No |
|---|---|---|---|---|
| 1 | **CHECK INHIBITOR SWITCH.**<br>1) Turn ignition switch to ON (engine OFF).<br>2) Move select lever from “P” to “1” position. | Combination meter indicator lamp and select lever “P”, “R”, “N”, “3”, “2” and “1” are correctly matched? | Go to step **2**. | Adjust inhibitor switch and select cable. |
| 2 | **CHECK HARNESS BETWEEN INHIBITOR SWITCH AND AT SHIFT LOCK CONTROL MODULE.**<br>1) Turn ignition switch to OFF.<br>2) Disconnect connector transmission harness and AT shift lock control module.<br>3) Measure the resistance of harness between AT shift lock control module and chassis ground.<br>***Connector & terminal***<br>***(B57) No. 2 — Chassis ground:*** | Is the resistance more than 1 MΩ? | Go to step **3**. | Repair short circuit in harness between AT shift lock control module and transmission connector. |
| 3 | **CHECK HARNESS BETWEEN INHIBITOR SWITCH AND AT SHIFT LOCK CONTROL MODULE.**<br>Measure the resistance of harness between AT shift lock control module and inhibitor switch.<br>***Connector & terminal***<br>***(B12) No. 3 — (B57) No. 2:*** | Is the resistance more than 1 MΩ? | Repair open circuit in harness between AT shift lock control module and transmission connector. | Go to step **4**. |
| 4 | **CHECK HARNESS BETWEEN INHIBITOR SWITCH AND BODY GROUND.**<br>1) Measure the resistance of harness between AT shift lock control module and chassis ground.<br>***Connector & terminal***<br>***(B12) No. 4 — Chassis ground:*** | Is the resistance more than 1 MΩ? | Repair open circuit in harness between transmission connector and chassis ground. | Go to step **5**. |
| 5 | **CHECK INHIBITOR SWITCH.**<br>1) Move select lever to “P” position.<br>2) Measure the resistance of transmission harness connector terminals.<br>***Connector & terminal***<br>***(T3) No. 3 — No. 4:*** | Is the resistance more than 1 MΩ? | Repair or replace inhibitor switch. | Go to step **6**. |
| 6 | **CHECK OUTPUT SIGNAL FOR AT SHIFT LOCK CONTROL MODULE.**<br>1) Connect all connectors.<br>2) Turn ignition switch to ON.<br>3) Measure the voltage between AT shift lock control module and chassis ground.<br>***Connector & terminal***<br>***(B57) No. 2 (+) — Chassis ground (–):*** | Is the voltage between 5 and 7 V? | Go to step **7**. | Go to step **15**. |
| 7 | **CHECK STOP LIGHT SWITCH.**<br>1) Turn ignition switch to ON (engine OFF).<br>2) Depress brake pedal. | Does stop light turn on? | Go to step **8**. | Inspect stop light system. |
| 8 | **CHECK HARNESS BETWEEN STOP LIGHT SWITCH AND AT SHIFT LOCK CONTROL MODULE.**<br>1) Press brake pedal.<br>2) Measure the voltage between AT shift lock control module and chassis ground.<br>***Connector & terminal***<br>***(B57) No. 4 — Chassis ground:*** | Is the voltage more than 10 V? | Go to step **9**. | Repair open or short circuit in harness between AT shift lock control module and stop light switch. |

| No. | Step | Check | Yes | No |
|---|---|---|---|---|
| 9 | **CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND SHIFT LOCK SOLENOID.**<br>1) Turn ignition switch to OFF.<br>2) Disconnect connector from shift lock solenoid.<br>3) Measure the resistance of harness between shift lock solenoid and AT shift lock control module.<br>***Connector & terminal***<br>***(B57) No. 6 — (B116) No. 4:*** | Is the resistance more than 1 MΩ? | Repair open circuit in harness between AT shift lock control module and shift lock solenoid. | Go to step **10**. |
| 10 | **CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND SHIFT LOCK SOLENOID.**<br>Measure the resistance of harness between shift lock solenoid and chassis ground.<br>***Connector & terminal***<br>***(B57) No. 6 — Chassis ground:*** | Is the resistance less than 10 Ω? | Go to step **11**. | Repair short circuit in harness between AT shift lock control module and shift lock solenoid. |
| 11 | **CHECK HARNESS BETWEEN SHIFT LOCK SOLENOID AND CHASSIS GROUND.**<br>Measure the resistance of harness between shift lock solenoid and chassis ground.<br>***Connector & terminal***<br>***(B116) No. 5 — Chassis ground:*** | Is the resistance more than 1 MΩ? | Repair open circuit in harness between shift lock solenoid and chassis ground. | Go to step **12**. |
| 12 | **CHECK SHIFT LOCK SOLENOID.**<br>Measure the resistance of shift lock solenoid connector terminals.<br>***Terminal***<br>***No. 4 — No. 5:*** | Is the resistance between 10 and 20 Ω? | Go to step **13**. | Replace shift lock solenoid. |
| 13 | **CHECK SHIFT LOCK SOLENOID.**<br>Connect battery with shift lock solenoid connector terminal and operate solenoid.<br>***Terminal***<br>***No. 4 (+) — No. 5 (–):*** | Is shift lock solenoid operating properly? | Go to step **14**. | Replace shift lock solenoid. |
| 14 | **CHECK OUTPUT SIGNAL FOR AT SHIFT LOCK CONTROL MODULE.**<br>1) Turn ignition switch to ON (engine OFF).<br>2) Measure the voltage between AT shift lock control module and chassis ground.<br>***Connector & terminal***<br>***(B57) No. 6 (+) — Chassis ground (–):*** | Is the voltage more than 10 V? | Go to step **15**. | Replace AT shift lock control module. |
| 15 | **CHECK POOR CONTACT.** | Is there poor contact in key lock circuit? | Repair poor contact. | Replace AT shift lock control module. |

## 4. KEY INTERLOCK DOES NOT LOCK OR RELEASE S501240A1004

**WIRING DIAGRAM:**




B3M2204

| No. | Step | Check | Yes | No |
|---|---|---|---|---|
| 1 | **CHECK HARNESS BETWEEN BATTERY AND KEY WARNING SWITCH.**<br>1) Disconnect connector key warning switch.<br>2) Measure the voltage of harness between key warning switch and chassis ground.<br>***Connector & terminal***<br>***(B74) No. 2 — Chassis ground:*** | Is the voltage more than 10 V? | Go to step **2**. | Repair open or short circuit in harness between battery and key waring switch. |
| 2 | **CHECK KEY WARNING SWITCH.**<br>Measure the resistance of stop key warning connector terminals.<br>***Terminal***<br>***No. 1 — No. 2:*** | Is the resistance more than 1 MΩ? | Replace key warning switch. | Go to step **3**. |
| 3 | **CHECK KEY WARNING SWITCH.**<br>1) Remove key.<br>2) Measure the resistance of stop key warning connector terminals.<br>***Terminal***<br>***No. 1 — No. 2:*** | Is the resistance more than 1 MΩ? | Go to step **4**. | Replace key warning switch. |
| 4 | **CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND KEY WARNING SWITCH.**<br>1) Disconnect AT shift lock control module.<br>2) Connect key warning switch.<br>3) Install key.<br>4) Measure the voltage of harness between AT shift lock control module and chassis ground.<br>***Connector & terminal***<br>***(B57) No. 8 — Chassis ground:*** | Is the resistance more than 10 V? | Go to step **5**. | Repair open or short circuit in harness between AT shift lock control module and key warning switch. |
| 5 | **CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND KEY LOCK SOLENOID.**<br>1) Disconnect connector from key lock solenoid.<br>2) Measure the resistance of harness between AT shift lock control module and key lock solenoid.<br>***Connector & terminal***<br>***(B73) No. 2 — (B57) No. 9:*** | Is the resistance more than 1 MΩ? | Repair open circuit in harness between AT shift lock control module and key lock solenoid. | Go to step **6**. |
| 6 | **CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND KEY LOCK SOLENOID.**<br>Measure the resistance of harness between AT sift lock control module and chassis ground.<br>***Connector & terminal***<br>***(B57) No. 9 — Chassis ground:*** | Is the resistance less than 1 Ω? | Repair short circuit in harness between AT shift lock control module and key lock solenoid. | Go to step **7**. |
| 7 | **CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND KEY LOCK SOLENOID.**<br>Measure the resistance of harness between AT shift lock control module and key lock solenoid.<br>***Connector & terminal***<br>***(B73) No. 1 — (B57) No. 11:***<br>***(B73) No. 2 — (B57) No. 9:*** | Is the resistance more than 1 MΩ? | Repair open circuit in harness between AT shift lock control module and key lock solenoid. | Go to step **8**. |

| No. | Step | Check | Yes | No |
|---|---|---|---|---|
| 8 | **CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND KEY LOCK SOLENOID.**<br>Measure the resistance of harness between key lock solenoid and chassis ground.<br>***Connector & terminal***<br>***(B57) No. 11 — Chassis ground:*** | Is the resistance less than 10 Ω? | Go to step **9**. | Repair short circuit in harness between AT shift lock control module and key lock solenoid. |
| 9 | **CHECK KEY LOCK SOLENOID.**<br>Measure the resistance of key lock solenoid connector terminals.<br>***Connector & terminal***<br>***(B73) No. 1 — No. 2:*** | Is the resistance between 4 and 8 Ω? | Go to step **10**. | Replace key lock solenoid. |
| 10 | **CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND "P" POSITION SWITCH.**<br>1) Disconnect connector from "P" position switch.<br>2) Measure the resistance of harness between AT shift lock control module and "P" position switch.<br>***Connector & terminal***<br>***(B116) No. 2 — (B57) No. 5:*** | Is the resistance more than 1 MΩ? | Repair open circuit in harness between AT shift lock control module and "P" position switch. | Go to step **11**. |
| 11 | **CHECK HARNESS BETWEEN AT SHIFT LOCK CONTROL MODULE AND "P" POSITION SWITCH.**<br>Measure the resistance of harness between AT shift lock control module and chassis ground.<br>***Connector & terminal***<br>***(B116) No. 2 — Chassis ground:*** | Is the resistance more than 1 MΩ? | Go to step **12**. | Repair open circuit harness between AT shift lock control module and "P" position switch. |
| 12 | **CHECK HARNESS BETWEEN "P" POSITION SWITCH AND CHASSIS GROUND.**<br>Measure the resistance of harness between shift lock solenoid and "P" position switch.<br>***Connector & terminal***<br>***(B116) No. 6 — Chassis ground:*** | Is the resistance more than 1 MΩ? | Repair open circuit in harness between "P" position switch and body ground. | Go to step **13**. |
| 13 | 1) Move the select lever to "P" position.<br>2) Measure resistance between "P" position switch connector terminals.<br>***Terminal***<br>***No. 2 — No. 6:*** | Is the resistance less than 1 Ω? | Go to step **14**. | Replace the "P" position switch. |
| 14 | 1) Move the select lever to other than "P" position.<br>2) Measure resistance between "P" position switch connector terminals.<br>***Terminal***<br>***No. 2 — No. 6:*** | Is the resistance more than 1 MΩ? | Go to step **15**. | Replace the "P" position switch. |
| 15 | **CHECK OUTPUT SIGNAL FOR AT SHIFT LOCK CONTROL MODULE.**<br>1) Turn ignition switch to ON (engine OFF).<br>2) Measure the voltage between AT shift lock control module and chassis ground.<br>***Connector & terminal***<br>***(B57) No. 5 (+) — Chassis ground (–):*** | Is the voltage between 5 and 7 V? | Go to step **16**. | Replace AT sift lock control module. |

| No. | Step | Check | Yes | No |
|---|---|---|---|---|
| 16 | **CHECK OUTPUT SIGNAL FOR AT SHIFT LOCK CONTROL MODULE.**<br>1) Turn ignition to ON (engine OFF).<br>2) Move select lever to “P” position.<br>3) Press brake pedal.<br>4) Measure the voltage of AT shift lock control module and chassis ground.<br>***Connector & terminal***<br>***(B57) No. 9 (+) — Chassis ground (–):*** | Is the voltage 8.5 and 15 V? | Go to step **17**. | Replace AT shift lock control module. |
| 17 | **CHECK POOR CONTACT.** | Is there poor contact in AT sift lock circuit? | Repair poor contact. | Replace AT sift lock control module. |