IMMOBILIZER
(DIAGNOSTICS)
## Basic Diagnostic Procedure

### A: PROCEDURE

<table>
<thead>
<tr>
<th>Step</th>
<th>Check</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>
| 1.   | CHECK SECURITY INDICATOR LIGHT.  
     1) Turn the ignition switch to “OFF” or “ACC”.  
     2) Wait at least 60 seconds. | Does the security indicator light blink? | Go to step 2. | Check the security indicator light circuit.  
<Ref. to IM(diag)-16, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>  
Diagnostics Chart for Security Indicator Light.> |
| 2.   | CHECK KEY SWITCH.  
     Remove the key from ignition switch. | Does the security indicator light blink within 1 second after removing the key? | Go to step 3. | Check the key switch circuit.  
<Ref. to IM(diag)-16, CHECK KEY SWITCH CIRCUIT, INSPECTION, Diagnostics Chart for Security Indicator Light.> |
| 3.   | CHECK SECURITY INDICATOR LIGHT.  
     Turn the ignition switch to ON. | Does the security indicator light go off? | Go to step 5. | Go to step 4. |
| 4.   | CHECK ENGINE START.  
     Turn the ignition switch to START. | Does the starter operate? | Check the LAN communication circuit.  
<Ref. to LAN(diag)-2, Basic Diagnostic Procedure.> | Check the DTC display (body integrated unit). Go to step 7. |
| 5.   | CHECK ENGINE START.  
     Turn the ignition switch to START. | Does the starter operate? | Go to step 6. | Check the LAN communication circuit.  
<Ref. to LAN(diag)-2, Basic Diagnostic Procedure.> |
| 6.   | CHECK ENGINE START.  
     Turn the ignition switch to START. | Does the engine start? | Immobilizer system is normal. | Check the DTC display (ECM). Go to step 7. |
| 7.   | CHECK ANY OTHER DTC ON DISPLAY.  
     1) Turn the ignition switch to OFF.  
     2) Connect the Subaru Select Monitor to the data link connector.  
<Ref. to IM(diag)-7, Subaru Select Monitor.>  
3) Turn the ignition switch and Subaru Select Monitor switch to ON.  
4) Read DTC’s on the display. | Is the DTC displayed on screen? | Go to step 8. | Repair the related parts. |
| 8.   | PERFORM DIAGNOSIS.  
     1) Inspect using the “Diagnostic Procedure with Diagnostic Trouble Code (DTC).”  
<Ref. to IM(diag)-16, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>  
2) Repair the trouble cause.  
3) Perform the Clear Memory Mode.  
4) Read DTC’s again. | Is the DTC displayed on screen? | Inspect using the "Diagnostic Procedure with Diagnostic Trouble Code (DTC).”  
<Ref. to IM(diag)-16, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> | Finish the diagnosis. |

## IM(diag)-2
2. General Description

A: CAUTION

CAUTION:
- The airbag system wiring harnesses and connectors are yellow. Do not use electrical test equipment on these circuits.
- Be careful not to damage the airbag system wiring harness.
- While diagnostic items are being checked, do not operate radios, portable telephones, etc. which emit electromagnetic waves near or inside the vehicle.

- When turning the ignition switch to ON or OFF while diagnostic items are being checked, do not allow keys with different ID codes close to the ignition switch. If the ignition key is on a key holder, remove it from the key holder before performing diagnoses.

- When repeatedly turning the ignition switch to ON or OFF while diagnostic items are being checked, it should be switched in cycles of “ON” for at least 5 seconds → “OFF” for at least 8 seconds.

- If the engine fails to start with a registered ignition key, detach the ignition key from ignition switch and wait for approx. 1 second until security indicator light begins to flash. And then start the engine again.

- Before performing the diagnostics, obtain all keys for the vehicle from the owner.
- Do not install or register a body integrated unit already registered to another vehicle to diagnose failures or inspect functions.
General Description

IMMOBILIZER (DIAGNOSTICS)

B: PREPARATION TOOL

1. SPECIAL TOOL

<table>
<thead>
<tr>
<th>ILLUSTRATION</th>
<th>TOOL NUMBER</th>
<th>DESCRIPTION</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18482AA010</td>
<td>CARTRIDGE</td>
<td>Troubleshooting for the electrical system.</td>
</tr>
<tr>
<td>ST18482AA010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>22771AA030</td>
<td>SUBARU SELECT MONITOR KIT</td>
<td>Troubleshooting for the electrical system.</td>
</tr>
<tr>
<td>ST22771AA030</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. GENERAL TOOL

<table>
<thead>
<tr>
<th>TOOL NAME</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circuit tester</td>
<td>Used for measuring resistance, voltage and current.</td>
</tr>
</tbody>
</table>
3. Electrical Component Location
A: LOCATION

(1) Antenna
(2) Security indicator light (LED bulb)
(3) Body integrated unit
(4) Transponder
IMMOBILIZER (DIAGNOSTICS)

4. Immobilizer Control Module I/O Signal

A: WIRING DIAGRAM

1. IMMOBILIZER
<Ref. to WI-165, WIRING DIAGRAM, Immobilizer System.>
5. Subaru Select Monitor
A: OPERATION

1. HOW TO USE THE SUBARU SELECT MONITOR

1) Prepare the Subaru Select Monitor kit.

2) Connect the diagnosis cable to the Subaru Select Monitor.
3) Insert the cartridge to the Subaru Select Monitor.
4) Connect the Subaru Select Monitor to the data link connector.
   (1) Data link connector is located in the lower portion of the instrument panel (on the driver’s side).

5) Turn the ignition switch to ON (engine is OFF), and the Subaru Select Monitor switch ON.

6) Using the Subaru Select Monitor, call up DTCs and various data, then record them.

2. READ DIAGNOSTIC TROUBLE CODE (DTC) FOR ENGINE AND BODY INTEGRATED UNIT

Refer to “Read Diagnostic Trouble Code” for information about how to indicate DTC. <Ref. to IM(diag)-8, Read Diagnostic Trouble Code (DTC).>

3. COMMUNICATION LINE CHECK

NOTE:
The communication line between ECM and body integrated unit can be checked in “System Operation Check Mode”. This is referred to as “Communication line check”.

1) Connect the Subaru Select Monitor.
2) On the «Main Menu» display screen, select {Each System Check} and press the [YES] key.
4) Press the [YES] key after the information of engine type is displayed.
5) On the «Engine Diagnosis» display screen, select the {System Operation Check Mode} and press the [YES] key.
6) On the «System operation check mode» display, select the (security system).
7) Start the communication line check.
8) Is «OK» displayed on screen?
   If displayed, go to step 9).
   If not, go to step 10).
9) After diagnostic results, it is determined that the circuit is not shorted. Finish the communication line check.
10) If a problem is detected, repair the trouble cause. <Ref. to IM(diag)-20, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
6. Read Diagnostic Trouble Code (DTC)

A: OPERATION

1. ECM
   1) On the «Main Menu» display screen, select (Each System Check) and press the [YES] key.
   2) On the «System Selection Menu» display screen, select (Engine Control System) and press the [YES] key.
   3) Press the [YES] key after the information of engine type is displayed.
   4) On the «Engine Diagnosis» screen, select (DTC Display), and then press the [YES] key.
   5) On the «Diagnostic Code(s) Display» screen, select (Current Diagnostic Code(s)) or (History Diagnostic Code(s)), and then press the [YES] key.

NOTE:
* For detailed operation procedure, refer to the “SUBARU SELECT MONITOR OPERATION MANUAL”.
* For detailed concerning DTC, refer to the List of Diagnostic Trouble Codes (DTC). <Ref. to IM(diag)-14, LIST, List of Diagnostic Trouble Code (DTC).>

2. BODY INTEGRATED UNIT
   1) On the «Main Menu» display screen, select (Each System Check) and press the [YES] key.
   2) On the «System Selection Menu» display screen, select (Integ. unit mode) and press the [YES] key.
   3) Press the [YES] key after the (Integ. unit mode) is displayed.
   4) On the «Integ. unit failure diag» display screen, select (Diagnostic Code(s) Display) and press the [YES] key.

NOTE:
* For detailed operation procedure, refer to the “SUBARU SELECT MONITOR OPERATION MANUAL”.
* For detailed concerning DTC, refer to the List of Diagnostic Trouble Codes (DTC). <Ref. to IM(diag)-14, LIST, List of Diagnostic Trouble Code (DTC).>
7. Clear Memory Mode

A: OPERATION

1. ECM

1) On the «Main Menu» display screen, select {Each System Check} and press the [YES] key.
2) On the «System Selection Menu» display screen, select {Engine Control System} and press the [YES] key.
3) Press the [YES] key after the information of engine type is displayed.
4) On the «Engine Diagnosis» display screen, select the {Clear Memory} and press the [YES] key.
5) When the “Done” is shown on the display screen, turn the Subaru Select Monitor and ignition switch to OFF.

NOTE:
- After the memory has been cleared, the idle air control solenoid valve must be initialized. To execute this procedure, turn the ignition switch to ON. Wait for 3 seconds before starting the engine.
- For detailed operation procedure, refer to the “SUBARU SELECT MONITOR OPERATION MANUAL”.

2. BODY INTEGRATED UNIT

1) On the «Main Menu» display screen, select {Each System Check} and press the [YES] key.
2) On the «System Selection Menu» display screen, select the {Integ. unit mode} and press the [YES] key.
3) Press the [YES] key after the {Integ. unit mode} is displayed.
4) On the «Integ. unit mode failure diag» display screen, select the {Clear Memory} and press the [YES] key.
5) When “Done” is shown on the display screen, turn the Subaru Select Monitor and ignition switch to OFF.

NOTE:
For detailed operation procedure, refer to the “SUBARU SELECT MONITOR OPERATION MANUAL”.

IM(diag)-9
Diagnostics Chart for Security Indicator Light

8. Diagnostics Chart for Security Indicator Light

A: INSPECTION

1. CHECK SECURITY INDICATOR LIGHT CIRCUIT

WIRING DIAGRAM:

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IM(diag)-10
**Diagnostics Chart for Security Indicator Light**

<table>
<thead>
<tr>
<th>Step</th>
<th>Check</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>
| 1    | CHECK SECURITY INDICATOR LIGHT.  
   1) Turn the ignition switch to OFF.  
   2) Disconnect the harness connector from body integrated unit.  
   3) Connect the resistor (100 Ω) between the body integrated unit harness connector terminal (i84) No. 33 and chassis ground. | Does the security indicator light illuminate? | Go to step 2. | Go to step 5. |
| 2    | CHECK BODY INTEGRATED UNIT GROUND CIRCUIT.  
   Measure the resistance between body integrated unit harness connector terminal and chassis ground.  
   **Connector & terminal**  
   *(B280)* No. 22 — Chassis ground:  
   *(B281)* No. 8, No. 9 — Chassis ground: | Is the resistance less than 10 Ω? | Go to step 3. | Repair the open circuit of body integrated unit ground circuit. |
| 3    | CHECK BODY INTEGRATED UNIT IGNITION CIRCUIT.  
   1) Turn the ignition switch to ON. (Engine OFF)  
   2) Measure the voltage between body integrated unit harness connector terminal and chassis ground.  
   **Connector & terminal**  
   *(i84)* No. 1 (+) — Chassis ground (–): | Is the voltage more than 10 V? | Go to step 4. | Check the harness for open or short circuit between body integrated unit and ignition switch. |
| 4    | CHECK BODY INTEGRATED UNIT POWER SUPPLY CIRCUIT.  
   1) Turn the ignition switch to OFF.  
   2) Measure the voltage between body integrated unit harness connector terminal and chassis ground.  
   **Connector & terminal**  
   *(B280)* No. 7 (+) — Chassis ground (–):  
   *(B281)* No. 2 (+) — Chassis ground (–): | Is the voltage more than 10 V? | Replace the body integrated unit  
<Ref. to SL-55, Body Integrated Unit> and replace all the ignition keys (including transponder), Execute the registration procedure next. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER". | Check the harness for open or short circuits between the body integrated unit and fuse. |
| 5    | CHECK COMBINATION METER CIRCUIT.  
   1) Remove the combination meter. <Ref. to IDI-14, Combination Meter.>  
   2) Measure the voltage between combination meter harness connector terminal and chassis ground.  
   **Connector & terminal**  
   *(i10)* No. 1, No. 2 (+) — Chassis ground (–): | Is the voltage more than 10 V? | Go to step 6. | Check the harness for open or short between combination meter and fuse. |
| 6    | CHECK COMBINATION METER CIRCUIT.  
   Measure the resistance between the body integrated unit harness connector terminal and combination meter harness connector terminal.  
   **Connector & terminal**  
   *(i84)* No. 33 — *(i10)* No. 17: | Is the resistance less than 10 Ω? | LED bulb malfunction. Replace the combination meter assembly. <Ref. to IDI-15, DISASSEMBLY, Combination Meter.> | Repair the harness or connector. |
2. CHECK KEY SWITCH CIRCUIT

WIRING DIAGRAM:

[Diagram of wiring connections involving battery, key switch, and body integrated unit]
# Diagnostics Chart for Security Indicator Light

## IMMOBILIZER (DIAGNOSTICS)

<table>
<thead>
<tr>
<th>Step</th>
<th>Check</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td>CHECK POWER SUPPLY CIRCUIT.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Disconnect the harness connector from key warning switch.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Turn the ignition switch to “ACC” or “LOCK” (with key inserted).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Measure the voltage between key warning switch harness connector terminal and chassis ground.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Connector &amp; terminal (B350) No. 3 (+) — Chassis ground (–):</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the voltage more than 10 V?</td>
<td>Go to step 2.</td>
<td>Check the harness for an open or short between the key warning switch and fuse.</td>
<td></td>
</tr>
</tbody>
</table>

| **2** | CHECK KEY WARNING SWITCH. | | |
| 1) Insert the ignition key into the ignition switch. (OFF or ACC) | | |
| 2) Measure the resistance between key warning switch connector terminals. | | |
| **Connector & terminal No. 3 — No. 4:** | | |
| Is the resistance less than 1 Ω? | Go to step 3. | Replace the key warning switch. |

| **3** | CHECK KEY WARNING SWITCH. | | |
| 1) Remove the ignition key from the ignition switch. | | |
| 2) Measure the resistance between key warning switch connector terminals. | | |
| **Connector & terminal No. 3 — No. 4:** | | |
| Is the resistance more than 1 MΩ? | Go to step 4. | Replace the key warning switch. |

| **4** | CHECK HARNESS BETWEEN KEY WARNING SWITCH AND BODY INTEGRATED UNIT. | | |
| 1) Disconnect the harness connector from key warning switch. | | |
| 2) Disconnect the harness connector from body integrated unit. | | |
| 3) Measure the resistance between key warning switch harness connector terminal and body integrated unit harness connector terminal. | | |
| **Connector & terminal (B350) No. 4 — (B281) No. 7:** | | |
| Is the resistance less than 10 Ω? | Replace the body integrated unit <Ref. to SL-55, Body Integrated Unit.> and replace all the ignition keys (including transponder). Execute the registration procedure next. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER". | Repair the harness between key warning switch and body integrated unit. |
### List of Diagnostic Trouble Code (DTC)

#### IMMOBILIZER (DIAGNOSTICS)

**9. List of Diagnostic Trouble Code (DTC)**

**A: LIST**

**1. ECM**

<table>
<thead>
<tr>
<th>DTC</th>
<th>Item</th>
<th>Contents of diagnosis</th>
<th>Index No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>P0513</td>
<td>Incorrect Immobilizer Key</td>
<td>Incorrect immobilizer key (Use of unregistered key in body integrated unit)</td>
<td>&lt;Ref. to IM(diag)-16, DTC P0513 INCORRECT IMMobilizer KEY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</td>
</tr>
<tr>
<td>P1570</td>
<td>Antenna</td>
<td>Faulty antenna</td>
<td>&lt;Ref. to IM(diag)-17, DTC P1570 ANTENNA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</td>
</tr>
<tr>
<td>P1572</td>
<td>EGI — Immobilizer Communication (Excluding Antenna Circuit)</td>
<td>Communication failure between body integrated unit and ECM</td>
<td>&lt;Ref. to IM(diag)-20, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</td>
</tr>
<tr>
<td>P1574</td>
<td>Key — Immobilizer Communication</td>
<td>Failure of body integrated unit to verify key (transponder) ID code</td>
<td>&lt;Ref. to IM(diag)-22, DTC P1574 KEY COMMUNICATION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</td>
</tr>
<tr>
<td>P1576</td>
<td>EGI Control Module EEPROM</td>
<td>ECM malfunctioning</td>
<td>&lt;Ref. to IM(diag)-23, DTC P1576 EGI CONTROL MODULE EEPROM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</td>
</tr>
<tr>
<td>P1577</td>
<td>IMM Control Module EEPROM</td>
<td>Body integrated unit malfunctioning</td>
<td>&lt;Ref. to IM(diag)-24, DTC P1577 IMM CONTROL MODULE EEPROM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</td>
</tr>
<tr>
<td>P1578</td>
<td>Meter Failure</td>
<td>Reference code incompatibility between body integrated unit and combination meter</td>
<td>&lt;Ref. to IM(diag)-24, DTC P1578 METER FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</td>
</tr>
</tbody>
</table>

**NOTE:**
Perform diagnosis of engine DTC when a DTC other than an immobilizer DTC is detected. <Ref. to EN(H4DOTC)(diag)-68, List of Diagnostic Trouble Code (DTC).> <Ref. to EN(H6DO) (diag)-70, List of Diagnostic Trouble Code (DTC).>
List of Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

2. BODY INTEGRATED UNIT

<table>
<thead>
<tr>
<th>DTC</th>
<th>Item</th>
<th>Contents of diagnosis</th>
<th>Index No.</th>
<th>Relation between ECM and DTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>B0401</td>
<td>M Collation NG</td>
<td>Reference code incompatibility between body integrated unit and combination meter</td>
<td>-</td>
<td>P1578</td>
</tr>
<tr>
<td></td>
<td>Note: Incorrect immobilizer key (Use of unregistered key in body integrated unit)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Faulty antenna</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;Ref. to IM(diag)-24, DTC P1578 METER FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B0402</td>
<td>Immobilizer Key Collation NG</td>
<td>Communication failure between body integrated unit and ECM</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Note: Incorrect immobilizer key (Use of unregistered key in body integrated unit)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Faulty antenna</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;Ref. to IM(diag)-16, DTC P0513 INCORRECT IMMOBILIZER KEY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</td>
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<tr>
<td></td>
<td></td>
<td>&lt;Ref. to IM(diag)-17, DTC P1570 ANTENNA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;Ref. to IM(diag)-22, DTC P1574 KEY COMMUNICATION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>or &lt;Ref. to IM(diag)-20, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B0403</td>
<td>E/G Request NG</td>
<td>Communication failure between body integrated unit and ECM</td>
<td>-</td>
<td>P1572</td>
</tr>
</tbody>
</table>

NOTE:
- In immobilizer system, performing the starter relay control. When the body integrated unit detect the incompatibility of reference code, immediately output the starter relay cut signal to ECM, and then ECM stop the starter relay operation. In this case, engine does not start, and DTC is not recorded in ECM. Check that the engine does not start on the DTC of body integrated unit.
- DTC B0401 and B0402 are recorded as freeze frame data when the ignition switch becomes OFF. Therefore, if the engine is attempted to be started with an immobilizer key that is not registered, the DTC will not appear in the Subaru Select Monitor immediately. Turn the ignition switch to OFF, and turn it back to ON to check the DTC. At this time (when turning the ignition switch to ON again), note that the DTC is displayed as freeze frame data even when using a registered immobilizer key.
10. Diagnostic Procedure with Diagnostic Trouble Code (DTC)

**A: DTC P0513 INCORRECT IMMOBILIZER KEY**

**DTC DETECTING CONDITION:**
Incorrect immobilizer key (Use of unregistered key in body integrated unit)

<table>
<thead>
<tr>
<th>Step</th>
<th>Check</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.</td>
<td>Is registration for all keys complete?</td>
<td>END</td>
</tr>
<tr>
<td>2</td>
<td>PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.</td>
<td>Is registration for all keys complete?</td>
<td>END</td>
</tr>
</tbody>
</table>
Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

B: DTC P1570 ANTENNA

DTC DETECTING CONDITION:
Faulty antenna

WIRING DIAGRAM:
## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

**IMMOBILIZER (DIAGNOSTICS)**

<table>
<thead>
<tr>
<th>Step</th>
<th>Check</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>
| 1    | CHECK ANTENNA CIRCUIT.  
   1) Turn the ignition switch to OFF.  
   2) Disconnect the harness connector from the antenna. <Ref. to SL-58, Immobilizer Antenna.>  
   3) Measure the resistance of the antenna circuit.  
   Connector & terminal  
   (B351) No. 1 — No. 2: | Is the resistance less than 10 Ω? | Go to step 2. | Replace the antenna. <Ref. to SL-58, Immobilizer Antenna.> |
| 2    | CHECK ANTENNA CIRCUIT.  
   1) Disconnect the harness connector from body integrated unit.  
   2) Measure the resistance between harness connector and chassis ground.  
   Connector & terminal  
   (B281) No. 21 — Chassis ground: | Is the resistance less than 10 Ω? | Repair the harness. | Go to step 3. |
| 3    | CHECK ANTENNA CIRCUIT.  
   Measure the resistance between harness connector and chassis ground.  
   Connector & terminal  
   (B281) No. 20 — Chassis ground: | Is the resistance less than 10 Ω? | Repair the harness. | Go to step 4. |
| 4    | CHECK ANTENNA CIRCUIT.  
   1) Turn the ignition switch to ON. (engine OFF)  
   2) Measure the voltage between harness connector and chassis ground.  
   Connector & terminal  
   (B281) No. 21 (+) — Chassis ground (-): | Is the voltage 0 V? | Go to step 5. | Repair the harness. |
| 5    | CHECK ANTENNA CIRCUIT.  
   Measure the voltage between harness connector and chassis ground.  
   Connector & terminal  
   (B281) No. 20 (+) — Chassis ground (-): | Is the voltage 0 V? | Go to step 6. | Repair the harness between body integrated unit and antenna, because there is short circuit with battery voltage line or ignition switch "ON" line. |
| 6    | CHECK BODY INTEGRATED UNIT FUNCTION.  
   1) Turn the ignition switch to OFF.  
   2) Connect the harness connector to body integrated unit.  
   3) Insert the key into the ignition switch, then measure changes in voltage between the antenna harness connectors.  
   Connector & terminal  
   (B281) No. 20 (+) — No. 21 (-): | Is the voltage –30 to 30 V? (Approx. 0.1 second after inserting the key) Is the voltage 0 V? (Approx. 1 second after inserting the key) | Go to step 7. | Replace the body integrated unit <Ref. to SL-55, Body Integrated Unit.> and replace all the ignition keys (including transponder). Execute the registration procedure next. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER". |
## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

### IMMOBILIZER (DIAGNOSTICS)

#### C: DTC P1571 REFERENCE CODE INCOMPATIBILITY

**DTC DETECTING CONDITION:**
Reference code incompatibility between body integrated unit and ECM

<table>
<thead>
<tr>
<th>Step</th>
<th>Check</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>CHECK IGNITION KEY (TRANSPONDER). 1) Remove the key from ignition switch. 2) Start the engine using other key which is already registered.</td>
<td>Replace the ignition key (including the transponder). Execute the registration procedure next. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.</td>
<td>Replace the body integrated unit.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt;Ref. to SL-55, Body Integrated Unit.&gt; and replace all the ignition keys (including transponder). Execute the registration procedure next. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.</td>
</tr>
</tbody>
</table>

---

### Step Check Yes No

1. PERFORM REGISTRATION ON IGNITION KEY.
   - Perform registration on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.
   - Is registration for all keys complete?
   - Go to step 2.

2. CHECK ANY OTHER DTC ON DISPLAY.
   - Is any other immobilizer DTC displayed?
   - Check the appropriate DTC using the “List of Diagnostic Trouble Code (DTC)”. Execute the registration procedure next. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.  
   - Replace the ECM. <Ref. to FU(H4DOTC)-38, Engine Control Module (ECM).>
   - Replace the body integrated unit. <Ref. to SL-55, Body Integrated Unit.> and replace all the ignition keys (including transponder). Execute the registration procedure next. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.

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**IM(diag)-19**
Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

D: DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT)

DTC DETECTING CONDITION:
Communication failure between body integrated unit and ECM

WIRING DIAGRAM:

IM-00151

[Diagram of wiring connections]

A: BATTERY
B: MAIN SBF
C: SBF-3
D: F/B No.12
E: SBF-8
F: F/B No.7
G: E/B No.6
H: BODY INTEGRATED UNIT
I: ECM

ET : EXCEPT TURBO MODEL
TB : TURBO MODEL
## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

**IMMOBILIZER (DIAGNOSTICS)**

<table>
<thead>
<tr>
<th>Step</th>
<th>Check Body Integrated Unit Power Supply Circuit</th>
<th>Check</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Check Yes No</td>
<td>Is the voltage more than 10 V?</td>
<td>Go to step 2.</td>
<td>Check the harness for open or short circuits between the body integrated unit and fuse.</td>
</tr>
<tr>
<td></td>
<td>1. Turn the ignition switch to OFF.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Disconnect the harness connector from body integrated unit.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Measure the voltage between body integrated unit harness connector terminal and chassis ground.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Connector &amp; terminal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(B280) No. 7 (+) — Chassis ground (–); (B281) No. 2 (+) — Chassis ground (–);</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the voltage more than 10 V?</td>
<td>Go to step 3.</td>
<td>Check the harness for open or short circuit between body integrated unit and ignition switch.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step 2</td>
<td>Check Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Turn the ignition switch to ON. (Engine OFF)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Measure the voltage between body integrated unit harness connector terminal and chassis ground.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Connector &amp; terminal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(B280) No. 2 (+) — Chassis ground (–); Is the resistance less than 10 Ω?</td>
<td>Go to step 4.</td>
<td>Repair the open circuit of body integrated unit ground circuit.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Turbo model</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(B280) No. 18 — (B137) No. 19: Excluding turbo models (B280) No. 18 — (B136) No. 26:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Check Yes No</td>
<td>Is resistance less than 10 Ω?</td>
<td>Go to step 5.</td>
<td>Repair the open circuit of harness between body integrated unit and ECM.</td>
</tr>
<tr>
<td></td>
<td>Step 4</td>
<td>Check Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Turbo model</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(B280) No. 28 — (B137) No. 27: Excluding turbo models (B280) No. 28 — (B136) No. 34:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Measure the resistance between body integrated unit harness connector terminal and chassis ground.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Connector &amp; terminal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(B280) No. 18, No. 28 (+) — Chassis ground (–); Is the voltage 0 V?</td>
<td>Go to step 7.</td>
<td>Repair the harness between body integrated unit and ECM, because there is short circuit with battery voltage line or ignition switch &quot;ON&quot; line.</td>
<td></td>
</tr>
</tbody>
</table>

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**IM(diag)-21**
Diagnostic Procedure with Diagnostic Trouble Code (DTC)
IMMOBILIZER (DIAGNOSTICS)

E: DTC P1574 KEY COMMUNICATION FAILURE
DTC DETECTING CONDITION:
Failure of body integrated unit to verify key (transponder) ID code

<table>
<thead>
<tr>
<th>Step</th>
<th>Check</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>CHECK HARNESS OF COMMUNICATION LINE. Measure voltage between the ECM harness connector terminal and engine ground. Connector &amp; terminal Turbo model (B137) No. 19, No. 27 (+) — Engine ground (–): Excluding turbo models (B136) No. 26, No. 34 (+) — Engine ground (–):</td>
<td>Is the voltage 0 V?</td>
<td>Go to step 8. Repair the harness between body integrated unit and ECM, because there is short circuit with battery voltage line or ignition switch “ON” line.</td>
</tr>
<tr>
<td>8</td>
<td>CHECK ECM BY COMMUNICATION LINE CHECK. 1) Connect the harness connector to ECM. 2) Disconnect the harness connector from body integrated unit. 3) Start the communication line check. &lt;Ref. to IM(diag)-7, COMMUNICATION LINE CHECK, OPERATION, Subaru Select Monitor.&gt;</td>
<td>Does “Communication Line not Shorted” appear on the screen?</td>
<td>Replace the body integrated unit &lt;Ref. to SL-55, Body Integrated Unit.&gt; and replace all the ignition keys (including transponder). Execute the registration procedure next. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step</th>
<th>Check</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CHECK BODY INTEGRATED UNIT FUNCTION. Insert the key into the ignition switch (LOCK position), then measure changes in voltage between the antenna connectors. Connector &amp; terminal (B142) No. 1 (+) — No. 2 (–):</td>
<td>Is the voltage –30 to 30 V? (Approx. 0.1 second after inserting the key) Is the voltage 0 V? (Approx. 1 second after inserting the key)</td>
<td>Go to step 2. Replace the body integrated unit &lt;Ref. to SL-55, Body Integrated Unit.&gt; and replace all the ignition keys (including transponder). Execute the registration procedure next. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.</td>
</tr>
<tr>
<td>2</td>
<td>CHECK IGNITION KEY (TRANSPONDER). 1) Remove the key from ignition switch. 2) Start the engine using other key which is already registered.</td>
<td>Does the engine start?</td>
<td>Replace the ignition key (including the transponder). Execute the registration procedure next. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.</td>
</tr>
</tbody>
</table>
Diagnostic Procedure with Diagnostic Trouble Code (DTC)  
IMMOBILIZER (DIAGNOSTICS)

**F: DTC P1576 EGI CONTROL MODULE EEPROM**

DTC DETECTING CONDITION:
- ECM malfunctioning
- Inaccessible ROM in ECM during key registration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Check</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.</td>
<td>Is registration for all keys complete?</td>
<td>Make sure it is possible to start the engine with all keys that have been taught. This completes the work.</td>
</tr>
<tr>
<td>2</td>
<td>PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.</td>
<td>Is registration for all keys complete?</td>
<td>Make sure it is possible to start the engine with all keys that have been taught. This completes the work.</td>
</tr>
<tr>
<td>3</td>
<td>PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.</td>
<td>Is registration for all keys complete?</td>
<td>Make sure it is possible to start the engine with all keys that have been taught. This completes the work.</td>
</tr>
</tbody>
</table>

IM(diag)-23
G: DTC P1577 IMM CONTROL MODULE EEPROM

**DTC DETECTING CONDITION:**

- Body integrated unit malfunctioning
- Failed to access the ROM inside the body integrated unit.

<table>
<thead>
<tr>
<th>Step</th>
<th>Check</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMobilizer”.</td>
<td>Is registration for all keys complete?</td>
<td>Make sure it is possible to start the engine with all keys that have been taught. This completes the work.</td>
</tr>
<tr>
<td>2</td>
<td>PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMobilizer”.</td>
<td>Is registration for all keys complete?</td>
<td>Make sure it is possible to start the engine with all keys that have been taught. This completes the work.</td>
</tr>
<tr>
<td>3</td>
<td>PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMobilizer”.</td>
<td>Is registration for all keys complete?</td>
<td>Make sure it is possible to start the engine with all keys that have been taught. This completes the work.</td>
</tr>
</tbody>
</table>

H: DTC P1578 METER FAILURE

**DTC DETECTING CONDITION:**
Reference code incompatibility between body integrated unit and combination meter

1. **CHECK LAN COMMUNICATION SYSTEM.**

   Inspect the LAN communication system in the following cases. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>
   - DTC of body integrated unit B0300, B0301, B0302, B0111 or B0321 is displayed.
   - “Er IU” or “Er LC” is displayed in combination meter odo/trip meter.

2. **REPLACE COMBINATION METER.**

   Replace the combination meter. <Ref. to IDI-14, REMOVAL, Combination Meter.> Next, perform the registration procedure for all immobilizer parts (combination meter and etc.). Refer to the “REGISTRATION MANUAL FOR IMMobilizer”.

   **NOTE:**
   - When the combination meter has been replaced, be sure to perform the registration procedure of immobilizer.