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IMMOBILIZER (DIAGNOSTICS)

Basic Diagnostic Procedure

IMMOBILIZER (DIAGNOSTICS)

1. Basic Diagnostic Procedure

A: PROCEDURE

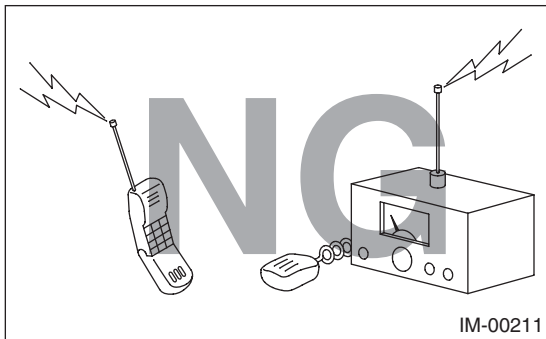
| Step | Check | Yes | No |
|--|--|---|---|
| 1 CHECK SECURITY INDICATOR LIGHT. 1) Turn the ignition switch to OFF or ACC position. 2) Wait at least 60 seconds. | Does the security indicator light blink? | Go to step 2. | Check the security indicator light circuit. <Ref. to IM(diag)-10, CHECK SECURITY INDICATOR LIGHT CIRCUIT., INSPECTION, Diagnostics Chart for Security Indicator Light.> |
| 2 CHECK KEY SWITCH. Remove the key from ignition switch. | Does the security indicator light begin to blink within 1 second after the key is removed? | Go to step 3. | Check the key switch circuit. <Ref. to IM(diag)-12, CHECK KEY SWITCH CIRCUIT., INSPECTION, Diagnostics Chart for Security Indicator Light.> |
| 3 CHECK ENGINE START. Turn the ignition switch to the START position. | Does the engine start? | Go to step 4. | Go to step 5. |
| 4 CHECK SECURITY INDICATOR LIGHT. Turn the ignition switch to ON. | Does the security indicator light illuminate? | Check the security indicator light circuit. <Ref. to IM(diag)-10, CHECK SECURITY INDICATOR LIGHT CIRCUIT., INSPECTION, Diagnostics Chart for Security Indicator Light.> | Immobilizer system is normal. |
| 5 CHECK INDICATION OF 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 run the Subaru Select Monitor. 4) Read DTCs on the display. | Is the DTC displayed on screen? | Go to step 6. | Repair the related parts. |
| 6 PERFORM DIAGNOSIS. 1) Inspect using the "Diagnostic Procedure with Diagnostic Trouble Code (DTC)". <Ref. to IM(diag)-15, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> 2) Repair the trouble cause. 3) Perform the Clear Memory Mode. 4) Read DTCs again. | Is the DTC displayed on screen? | Inspect using the "Diagnostic Procedure with Diagnostic Trouble Code (DTC)". <Ref. to IM(diag)-15, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> | Finish the diagnosis. |

2. General Description

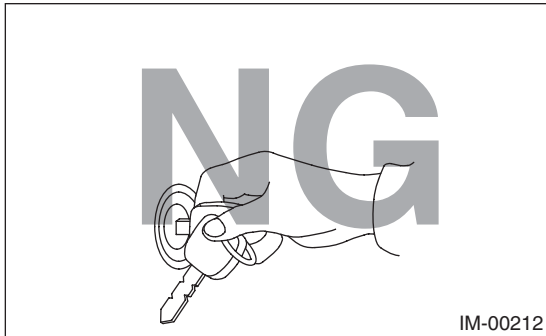
A: CAUTION

CAUTION:

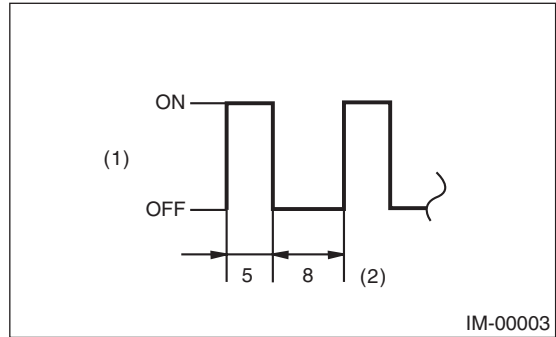
- The airbag system wiring harness is routed near the immobilizer control module.
- Do not use the electrical test equipment on the airbag system wiring harnesses and connector circuits.
- Be careful not to damage the airbag system wiring harness when servicing the immobilizer control module.
- While diagnostic items are being checked, do not operate radios, portable telephones, etc. which emit electromagnetic waves near or inside the vehicle.



- When the ignition switch is being turned ON or OFF while diagnostic items are being checked, do not allow keys with different ID codes be 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.



- (1) Ignition switch position
- (2) Sec.

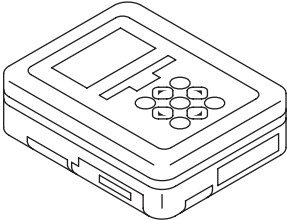
- If the engine fails to start with a registered ignition key, detach the ignition key from ignition switch and wait for approx. 1 second until security indicator light begins to flash. And then start the engine again.
- Before performing diagnostics, obtain all keys and security IDs for the vehicle from the owner.

General Description

IMMOBILIZER (DIAGNOSTICS)

B: PREPARATION TOOL

1. SPECIAL TOOL

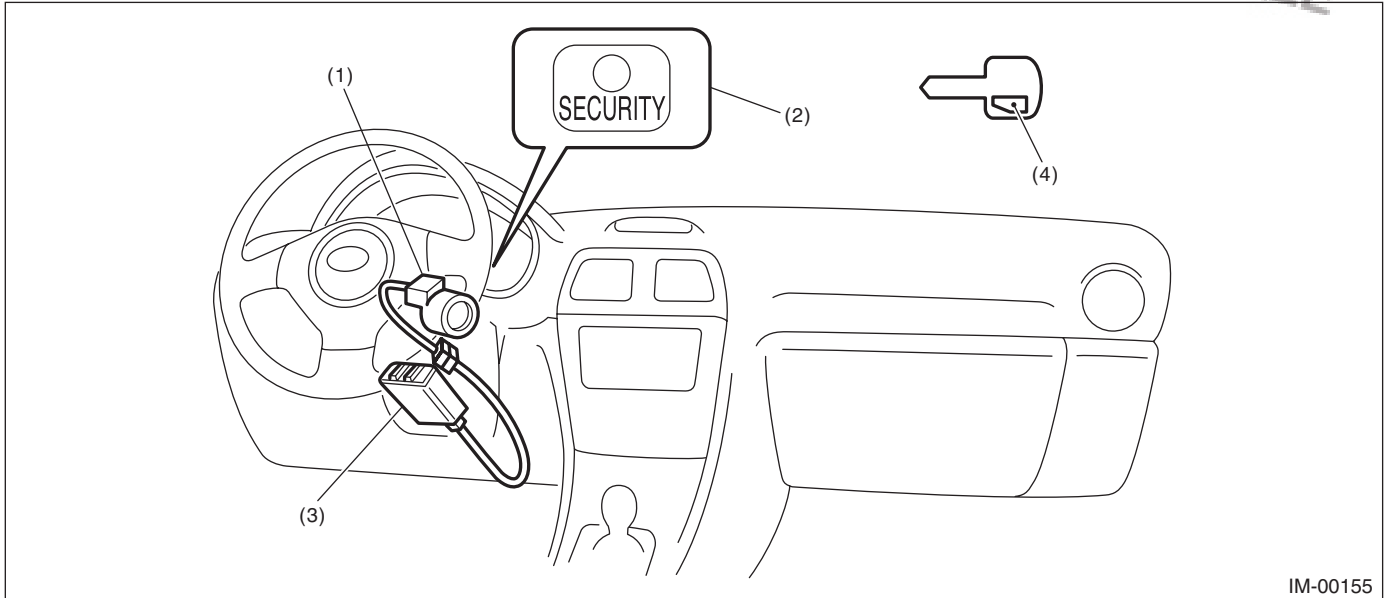
| ILLUSTRATION | TOOL NUMBER | DESCRIPTION | REMARKS |
|---|-------------|---------------------------|---|
|  ST1B020XU0 | 1B020XU0 | SUBARU SELECT MONITOR KIT | Used for troubleshooting the electrical system. |

2. GENERAL TOOL

| TOOL NAME | REMARKS |
|----------------|---|
| Circuit tester | Used for measuring resistance, voltage and current. |

3. Electrical Component Location

A: LOCATION



IM-00155

- (1) Antenna
- (2) Security indicator light (LED bulb)
- (3) Immobilizer control module (IMM ECM)
- (4) Transponder

Immobilizer Control Module I/O Signal

IMMOBILIZER (DIAGNOSTICS)

4. Immobilizer Control Module I/O Signal

A: WIRING DIAGRAM

1. IMMOBILIZER

<Ref. to WI-101, WIRING DIAGRAM, Immobilizer
System.>

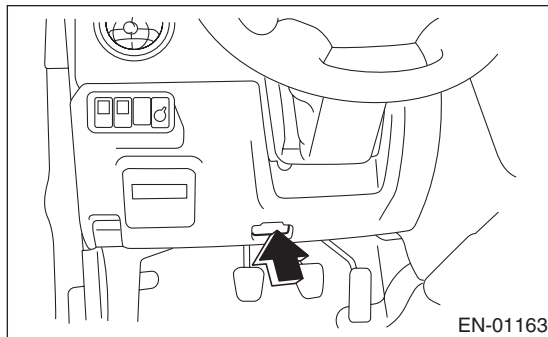
5. Subaru Select Monitor

A: OPERATION

1. HOW TO USE SUBARU SELECT MONITOR

- 1) Prepare the Subaru Select Monitor kit.
- 2) Connect the diagnosis cable to the Subaru Select Monitor.
- 3) 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).



(2) Connect the diagnosis cable to the data link connector.

CAUTION:

Do not connect scan tools other than the Subaru Select Monitor.

- 4) Turn the ignition switch to ON (engine OFF) and run the Subaru Select Monitor.
- 5) Using the Subaru Select Monitor, call up DTCs and various data, then record them.

2. READ DIAGNOSTIC TROUBLE CODE (DTC) FOR THE ENGINE

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 immobilizer control module 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}.
- 3) On the «System Selection Menu» display screen, select {Engine}.
- 4) Select the [OK] after the information of engine type is displayed.
- 5) On the «Engine Diagnosis» display screen, select {System Operation Check Mode}.

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)-16, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

Read Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

6. Read Diagnostic Trouble Code (DTC)

A: OPERATION

- 1) On the «Main Menu» display screen, select {Each System Check}.
- 2) On the «System Selection Menu» display screen, select {Engine}.
- 3) Select the [OK] after the information of engine type is displayed.
- 4) On the «Engine Diagnosis» display screen, select {DTC Display}.
- 5) On the «Diagnostic Code(s) Display» screen, select {Current Diagnostic Code(s)} or {History Diagnostic Code(s)}.

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) On the «Main Menu» display screen, select {Each System Check}.
- 2) On the «System Selection Menu» display screen, select {Engine}.
- 3) Select the [OK] after the information of engine type is displayed.
- 4) On the «Engine Diagnosis» display screen, select {Clear Memory}.
- 5) When “Done” is shown on the display screen, turn the ignition switch to OFF, and then Subaru Select Monitor 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 three seconds before starting the engine.
- For detailed operation procedure, refer to the “SUBARU SELECT MONITOR OPERATION MANUAL”.

Diagnostics Chart for Security Indicator Light

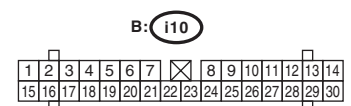
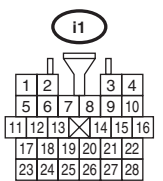
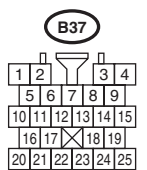
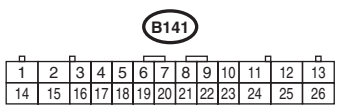
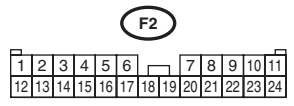
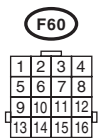
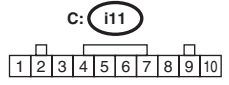
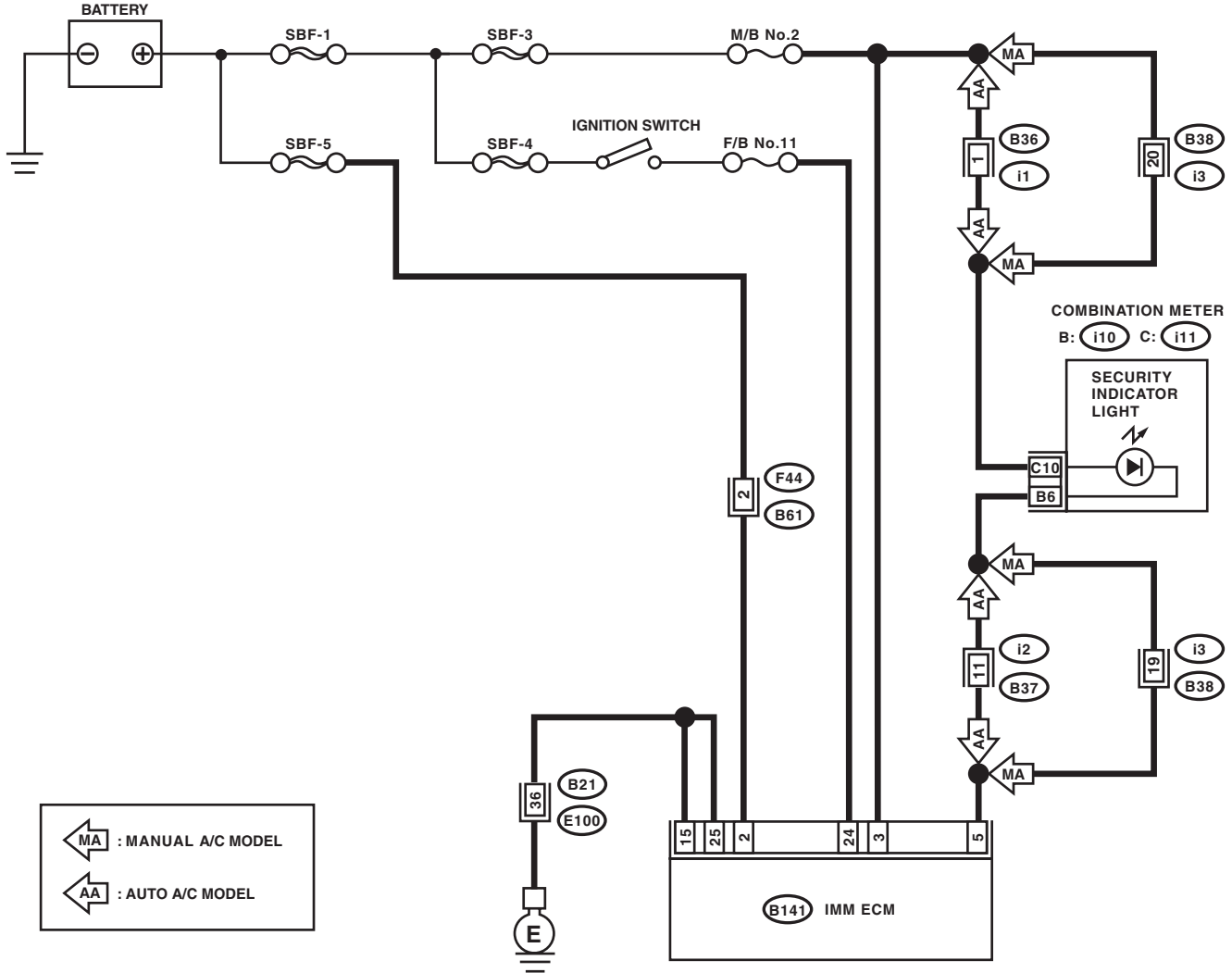
IMMOBILIZER (DIAGNOSTICS)

8. Diagnostics Chart for Security Indicator Light

A: INSPECTION

1. CHECK SECURITY INDICATOR LIGHT CIRCUIT.

WIRING DIAGRAM:



IM-00214

Diagnostics Chart for Security Indicator Light

IMMOBILIZER (DIAGNOSTICS)

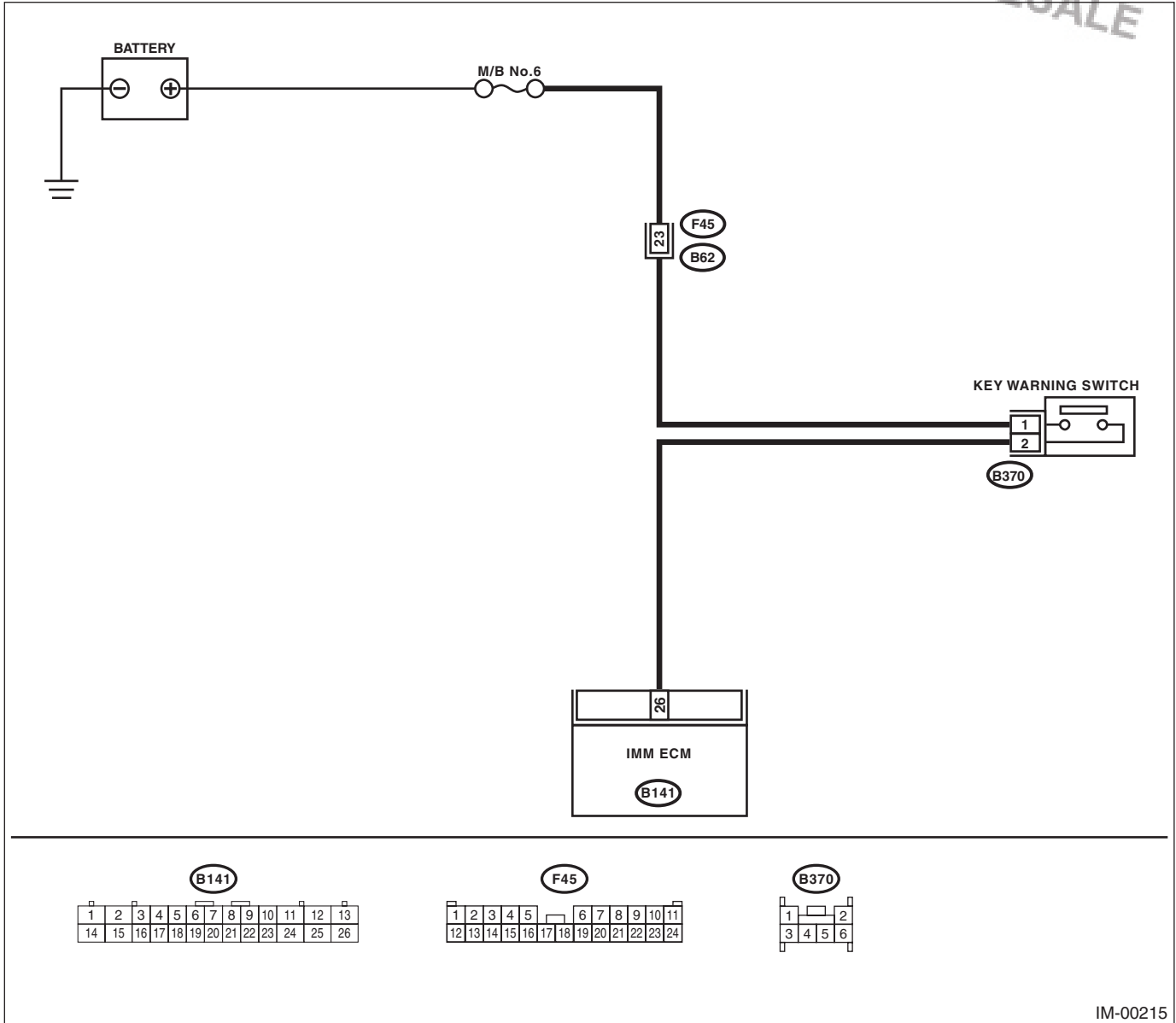
| Step | Check | Yes | No | |
|------|--|---|--|---|
| 1 | CHECK SECURITY INDICATOR LIGHT. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from IMMCM. 3) Connect a resistor (100 Ω) between IMMCM harness connector terminal No. 5 and chassis ground. | Does the security indicator light illuminate? | Go to step 2. | Go to step 5. |
| 2 | CHECK IMMCM GROUND CIRCUIT. Measure the resistance between IMMCM harness connector terminal and chassis ground. <i>Connector & terminal</i> (B141) No. 15 — Chassis ground: (B141) No. 25 — Chassis ground: | Is the resistance less than 10 Ω? | Go to step 3. | Repair the open circuit of IMMCM ground circuit. |
| 3 | CHECK IMMCM IGNITION CIRCUIT. 1) Turn the ignition switch to ON. (engine OFF) 2) Measure the voltage between IMMCM harness connector terminal and chassis ground. <i>Connector & terminal</i> (B141) No. 24 (+) — Chassis ground (-): | Is the voltage 10 V or more? | Go to step 4. | Check the harness for open or short between IMMCM and ignition switch. |
| 4 | CHECK IMMCM POWER SUPPLY CIRCUIT. 1) Turn the ignition switch to OFF. 2) Measure the voltage between IMMCM harness connector terminal and chassis ground. <i>Connector & terminal</i> (B141) No. 2 (+) — Chassis ground (-): (B141) No. 3 (+) — Chassis ground (-): | Is the voltage 10 V or more? | Replace the IMMCM <Ref. to SL-47, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Execute the registration procedure next. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER (Pub. No. S0820GZ)". | Check the harness for open or short between IMMCM and fuse. |
| 5 | CHECK COMBINATION METER CIRCUIT. 1) Remove the combination meter. <Ref. to IDI-11, Combination Meter.> 2) Measure the voltage between combination meter harness connector terminal and chassis ground. <i>Connector & terminal</i> (i11) No. 10 (+) — Chassis ground (-): | Is the voltage 10 V or more? | 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 IMMCM harness connector terminal and the combination meter harness connector terminal. <i>Connector & terminal</i> (B141) No. 5 — (i10) No. 6: | Is the resistance less than 10 Ω? | LED malfunctioning. Replace the combination meter print circuit. <Ref. to IDI-12, DISASSEMBLY, Combination Meter.> | Repair the harness or connector. |

Diagnostics Chart for Security Indicator Light

IMMOBILIZER (DIAGNOSTICS)

2. CHECK KEY SWITCH CIRCUIT

WIRING DIAGRAM:



IM-00215

Diagnostics Chart for Security Indicator Light

IMMOBILIZER (DIAGNOSTICS)

| Step | Check | Yes | No |
|--|-----------------------------------|--|---|
| 1 CHECK POWER SUPPLY CIRCUIT. 1) Disconnect the harness connector from key warning switch. 2) Measure the voltage between key warning switch harness connector terminal and chassis ground. <i>Connector & terminal</i> <i>(B370) No. 1 (+) — Chassis ground (-):</i> | Is the voltage 10 V or more? | Go to step 2. | Check the harness for an open or short between the key warning switch and fuse. |
| 2 CHECK KEY WARNING SWITCH. 1) Insert the ignition key into the ignition switch. (OFF or ACC position) 2) Measure the resistance between key warning switch connector terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i> | 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. <i>Terminals</i> <i>No. 1 — No. 2:</i> | Is the resistance 1 MΩ or more? | 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. <i>Connector & terminal</i> <i>(B370) No. 2 — (B141) No. 26:</i> | Is the resistance less than 10 Ω? | Replace the body integrated unit <Ref. to SL-47, Immobilizer Control Module.> and replace all the ignition keys (including transponder). Execute the registration procedure next. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER (Pub. No. S0820GZ)". | 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

| DTC | Item | Contents of diagnosis | Index No. |
|-------|---|--|---|
| P0513 | Incorrect Immobilizer Key | Incorrect immobilizer key (Use of unregistered key in IMMCM) | <Ref. to IM(diag)-19, DTC P0513 INCORRECT IMMOBILIZER KEY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> |
| P1570 | Antenna | Faulty antenna | <Ref. to IM(diag)-20, DTC P1570 ANTENNA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> |
| P1571 | Reference Code Incompatibility | Reference code incompatibility between IMMCM and ECM | <Ref. to IM(diag)-15, DTC P1571 REFERENCE CODE INCOMPATIBILITY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> |
| P1572 | EGI — Immobilizer Communication (Excluding Antenna Circuit) | Communication failure between IMMCM and ECM | <Ref. to IM(diag)-16, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).> |
| P1574 | Key — Immobilizer Communication | <ul style="list-style-type: none"> • Failure of IMMCM to verify key (transponder) ID code • Key (transponder) malfunctioning | <Ref. to IM(diag)-18, DTC P1574 KEY COMMUNICATION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> |
| P1576 | EGI Control Module EEPROM | ECM malfunctioning | <Ref. to IM(diag)-19, DTC P1576 EGI CONTROL MODULE EEPROM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> |
| P1577 | IMM Control Module EEPROM | IMMCM malfunctioning | <Ref. to IM(diag)-19, DTC P1577 IMM CONTROL MODULE EEPROM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> |

NOTE:

Perform the engine DTC when a DTC other than immobilizer DTC is detected. <Ref. to EN(H4DOTC)(diag)-76, List of Diagnostic Trouble Code (DTC).> <Ref. to EN(STI)(diag)-71, List of Diagnostic Trouble Code (DTC).>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

10. Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC P1571 REFERENCE CODE INCOMPATIBILITY

DTC DETECTING CONDITION:

Reference code incompatibility between IMMCM and ECM

| | 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 (Pub. No. S0820GZ)". | Is registration for all keys complete? | Finish the diagnosis. | Go to step 2. |
| 2 | CHECK DTC. | Is there any immobilizer-related DTC except DTC P1571? | Eliminate the cause of DTC other than DTC P1571, and perform registration on keys again. | Replace the ECM and IMMCM <Ref. to FU(H4DOTC)-50, Engine Control Module (ECM).> <Ref. to SL-47, Immobilizer Control Module.>, and then replace all ignition keys (including the transponder). Execute the registration procedure next. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER (Pub. No. S0820GZ)". |

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

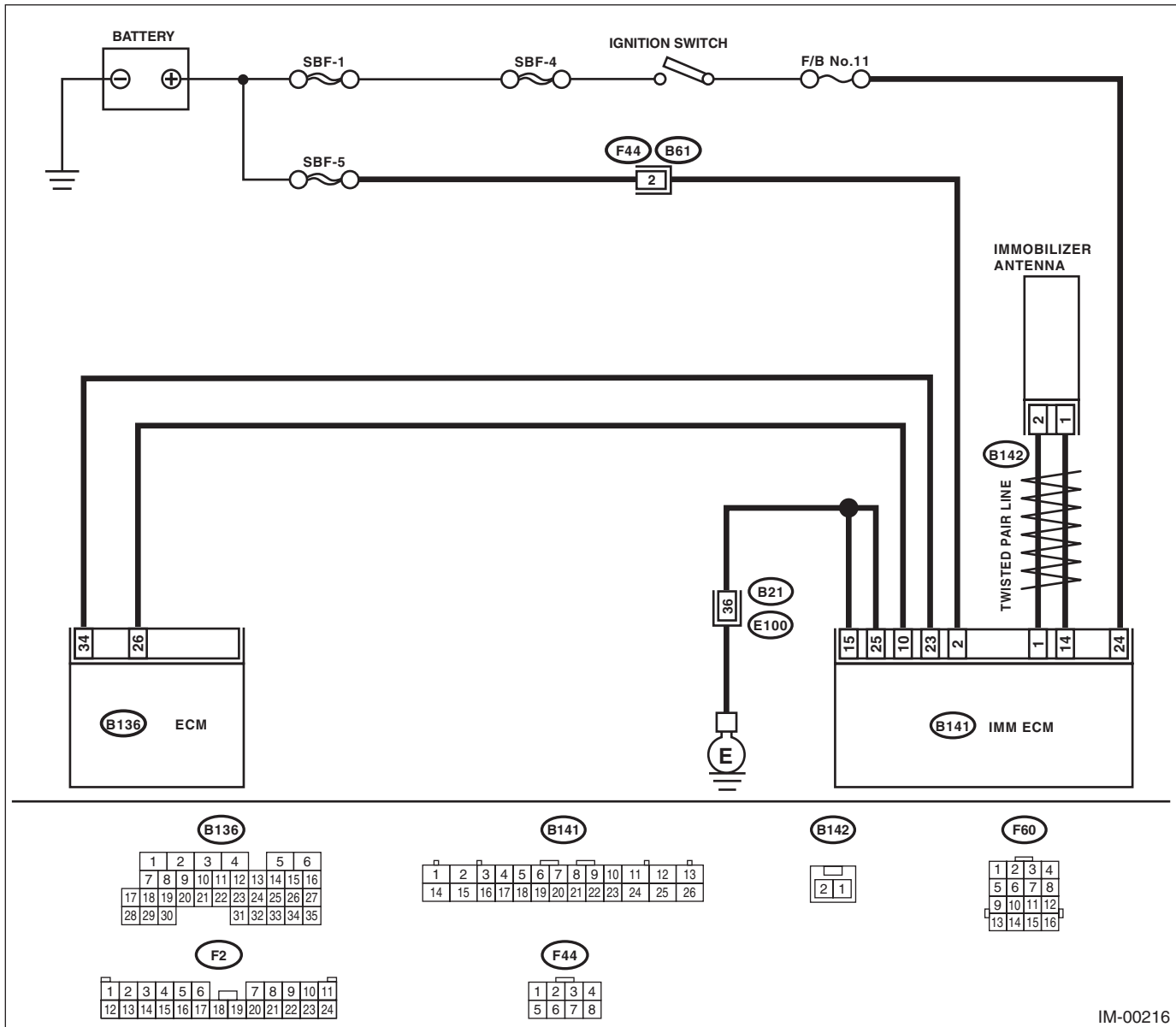
IMMOBILIZER (DIAGNOSTICS)

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

DTC DETECTING CONDITION:

Communication failure between IMMCM and ECM

WIRING DIAGRAM:



IM-00216

| Step | Check | Yes | No |
|---|------------------------------|---------------|--|
| 1 CHECK IMMCM POWER SUPPLY CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from IMMCM. 3) Measure the voltage between IMMCM harness connector terminal and chassis ground. Connector & terminal (B141) No. 2 (+) — Chassis ground (-): | Is the voltage 10 V or more? | Go to step 2. | Check the harness for open or short between IMMCM and fuse. |
| 2 CHECK IGNITION SWITCH CIRCUIT. 1) Turn the ignition switch to ON. (engine OFF) 2) Measure the voltage between IMMCM harness connector terminal and chassis ground. Connector & terminal (B141) No. 24 (+) — Chassis ground (-): | Is the voltage 10 V or more? | Go to step 3. | Check the harness for open or short between IMMCM and ignition switch. |

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

| Step | Check | Yes | No |
|--|---|--|--|
| 3 CHECK IMMCM GROUND CIRCUIT. 1) Turn the ignition switch to OFF. 2) Measure the resistance between IMMCM harness connector terminal and chassis ground. <i>Connector & terminal</i> <i>(B141) No. 15 — Chassis ground:</i> <i>(B141) No. 25 — Chassis ground:</i> | Is the resistance less than 10 Ω? | Go to step 4. | Repair the open circuit of IMMCM ground circuit. |
| 4 CHECK HARNESS BETWEEN IMMCM AND ECM. 1) Disconnect the harness connector from the ECM and IMMCM. 2) Measure the resistance between IMMCM harness connector terminal and ECM harness connector terminal. <i>Connector & terminal</i> <i>(B141) No. 10 — (B136) No. 26:</i> | Is the resistance less than 10 Ω? | Go to step 5. | Repair the open circuit of harness between IMMCM and ECM. |
| 5 CHECK HARNESS BETWEEN IMMCM AND ECM. Measure the resistance between IMMCM harness connector terminal and ECM harness connector terminal. <i>Connector & terminal</i> <i>(B141) No. 23 — (B136) No. 34:</i> | Is the resistance less than 10 Ω? | Go to step 6. | Repair the open circuit of harness between IMMCM and ECM. |
| 6 CHECK HARNESS OF COMMUNICATION LINE. 1) Turn the ignition switch to ON. (engine OFF) 2) Measure the voltage between IMMCM harness connector terminal and chassis ground. <i>Connector & terminal</i> <i>(B141) No. 10 (+) — Chassis ground (-):</i> <i>(B141) No. 23 (+) — Chassis ground (-):</i> | Is the voltage less than 1 V? | Go to step 7. | There is a short circuit in the battery voltage circuit or ignition switch "ON" circuit. Repair the harness between IMMCM and ECM. |
| 7 CHECK HARNESS OF COMMUNICATION LINE. Measure voltage between the ECM harness connector terminal and engine ground. <i>Connector & terminal</i> <i>(B136) No. 26 (+) — Engine ground (-):</i> <i>(B136) No. 34 (+) — Engine ground (-):</i> | Is the voltage less than 1 V? | Go to step 8. | There is a short circuit in the battery voltage circuit or ignition switch "ON" circuit. Repair the harness between IMMCM and ECM. |
| 8 CHECK ECM BY COMMUNICATION LINE CHECK. 1) Connect the harness connector to ECM. 2) Disconnect the harness connector from IMMCM. 3) Perform communication line check. <Ref. to IM(diag)-7, COMMUNICATION LINE CHECK, OPERATION, Subaru Select Monitor.> | Does "Communication Line not Shorted" appear on the screen? | Replace the IMMCM <Ref. to SL-47, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Execute the registration procedure next. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER (Pub. No. S0820GZ)". | Replace the ECM. <Ref. to FU(H4DOTC)-50, Engine Control Module (ECM).> Then perform registration operation. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER (Pub. No. S0820GZ)". |

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

C: DTC P1574 KEY COMMUNICATION FAILURE

DTC DETECTING CONDITION:

- Failure of IMMCM to verify key (transponder) ID code
- Key (transponder) malfunctioning

| Step | Check | Yes | No |
|---|--|---|--|
| 1 CHECK IMMCM FUNCTION. Insert the key into the ignition switch (LOCK position), then measure changes in voltage between the antenna connectors. Connector & terminal (B142) No. 1 (+) — No. 2 (-): | After inserting the key, is the voltage 0 — 30 V (Approx. 0.1 second) or 0 V (Approx. 1 second)? | Go to step 2. | Replace the IMMCM <Ref. to SL-47, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Execute the registration procedure next. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER (Pub. No. S0820GZ)". |
| 2 CHECK IGNITION KEY (TRANSPONDER). 1) Remove the key from ignition switch. 2) Start the engine using other key which is already registered. | Does the engine start? | Replace the ignition key (including the transponder). Execute the registration procedure next. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER (Pub. No. S0820GZ)". | Replace the IMMCM <Ref. to SL-47, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Execute the registration procedure next. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER (Pub. No. S0820GZ)". |

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

D: DTC P0513 INCORRECT IMMOBILIZER KEY

DTC DETECTING CONDITION:

Incorrect immobilizer key (Use of unregistered key in IMMCM)

| 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 (Pub. No. S0820GZ)". | Is registration for all keys complete? | Finish the diagnosis. | Replace all ignition keys (including the transponder). Go to step 2. |
| 2 PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER (Pub. No. S0820GZ)". | Is registration for all keys complete? | Finish the diagnosis. | Replace the IMMCM <Ref. to SL-47, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Execute the registration procedure next. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER (Pub. No. S0820GZ)". |

E: DTC P1576 EGI CONTROL MODULE EEPROM

DTC DETECTING CONDITION:

ECM malfunctioning

ECM replacement

Replace the ECM.

<Ref. to FU(H4DOTC)-50, Engine Control Module (ECM).>

Then perform registration operation. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER (Pub. No. S0820GZ)".

F: DTC P1577 IMM CONTROL MODULE EEPROM

DTC DETECTING CONDITION:

IMMCM malfunctioning

IMMCM replacement

Replace the IMMCM <Ref. to SL-47, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Execute the registration procedure next. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER (Pub. No. S0820GZ)".

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

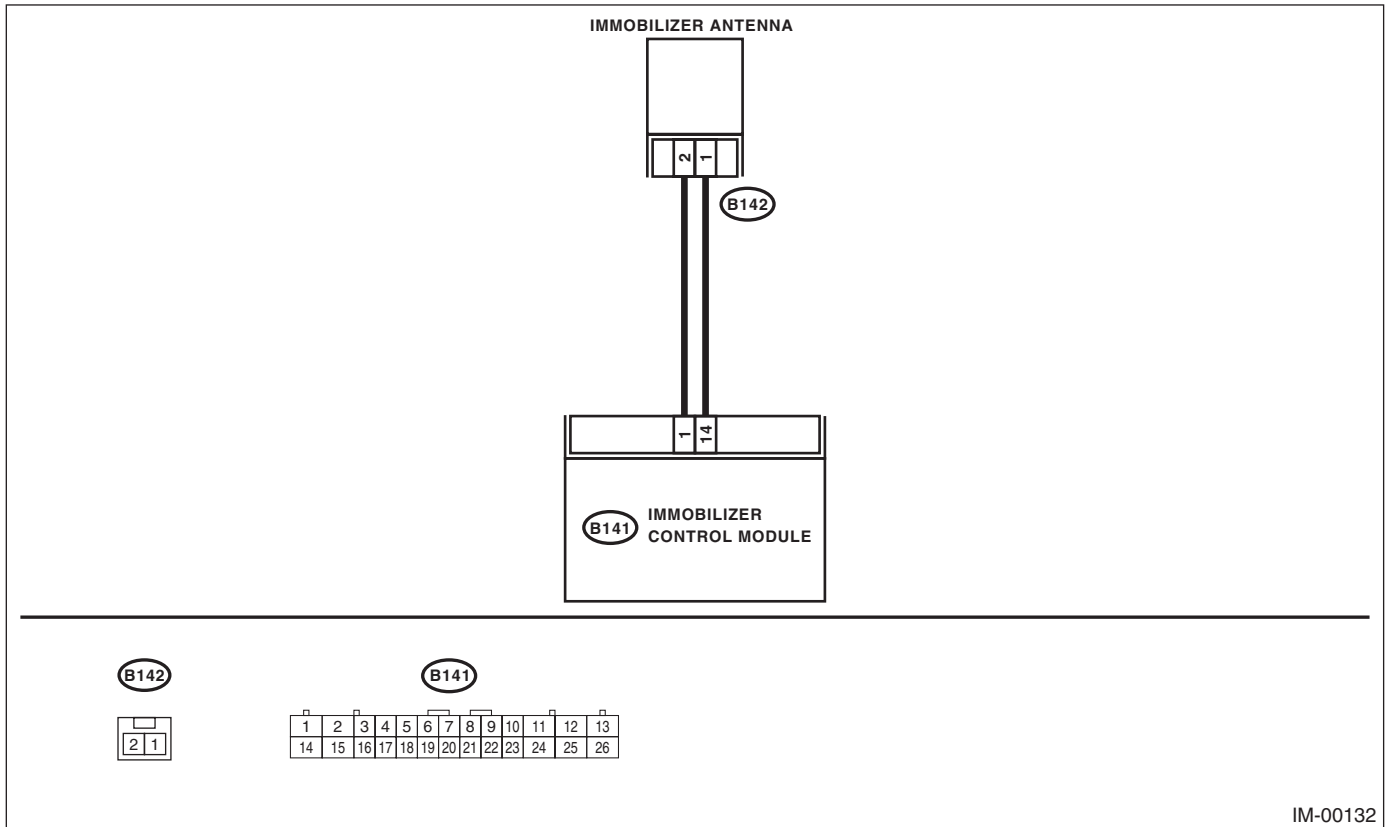
IMMOBILIZER (DIAGNOSTICS)

G: DTC P1570 ANTENNA

DTC DETECTING CONDITION:

Faulty antenna

WIRING DIAGRAM:



| Step | Check | Yes | No |
|---|-----------------------------------|--|--|
| 1 CHECK ANTENNA CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the harness antenna connector from IMMCM. <Ref. to SL-48, Immobilizer Antenna.> 3) Measure the resistance of the antenna circuit. <i>Connector & terminal</i> <i>(B142) No. 1 — No. 2:</i> | Is the resistance less than 10 Ω? | Go to step 2. | Replace the antenna. <Ref. to SL-48, Immobilizer Antenna.> |
| 2 CHECK ANTENNA CIRCUIT. Measure the resistance between antenna harness connector and chassis ground. <i>Connector & terminal</i> <i>(B141) No. 1 — Chassis ground:</i> | Is the resistance less than 10 Ω? | Replace the antenna. <Ref. to SL-48, Immobilizer Antenna.> | Go to step 3. |
| 3 CHECK ANTENNA CIRCUIT. Measure the resistance between antenna harness connector and chassis ground. <i>Connector & terminal</i> <i>(B141) No. 14 — Chassis ground:</i> | Is the resistance less than 10 Ω? | Replace the antenna. <Ref. to SL-48, Immobilizer Antenna.> | Go to step 4. |
| 4 CHECK ANTENNA CIRCUIT. 1) Turn the ignition switch to ON. (engine OFF) 2) Measure the voltage between antenna harness connector and chassis ground. <i>Connector & terminal</i> <i>(B141) No. 1 (+) — Chassis ground (-):</i> | Is the voltage less than 1 V? | Go to step 5. | Replace the antenna. <Ref. to SL-48, Immobilizer Antenna.> |

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

| Step | Check | Yes | No |
|--|--|---|--|
| 5 CHECK ANTENNA CIRCUIT. Measure the voltage between antenna harness connector and chassis ground. Connector & terminal (B141) No. 14 (+) — Chassis ground (-): | Is the voltage less than 1 V? | Go to step 6. | Replace the antenna. <Ref. to SL-48, Immobilizer Antenna.> |
| 6 CHECK IMMCM FUNCTION. 1) Turn the ignition switch to OFF. 2) Connect the antenna harness connector to IMMCM. 3) Insert the key into the ignition switch, then measure changes in voltage between the antenna harness connectors. Connector & terminal (B141) No. 1 (+) — No. 14 (-): | After inserting the key, is the voltage 0 — 30 V (Approx. 0.1 second) or 0 V (Approx. 1 second)? | Go to step 7. | Replace the IMMCM <Ref. to SL-47, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Execute the registration procedure next. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER (Pub. No. S0820GZ)". |
| 7 CHECK IGNITION KEY (TRANSPONDER). 1) Remove the key from ignition switch. 2) Start the engine using other key which is already registered. | Does the engine start? | Replace the ignition key (including the transponder). Execute the registration procedure next. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER (Pub. No. S0820GZ)". | Replace the IMMCM <Ref. to SL-47, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Execute the registration procedure next. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER (Pub. No. S0820GZ)". |

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

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