

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

11. Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC P0513 INCORRECT IMMOBILIZER KEY

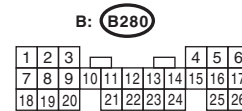
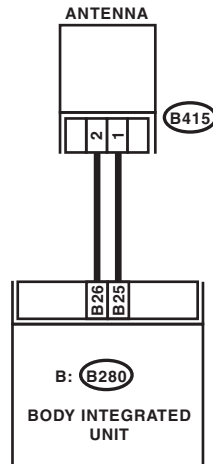
DTC DETECTING CONDITION:

Incorrect immobilizer key (Use of unregistered key in body integrated unit)

Step		Check	Yes	No
1	PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the "PC application help for Subaru Select Monitor".	Is registration for all keys complete?	END	Replace ignition keys (including transponder) which cannot be registered. Go to step 2.
2	PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the "PC application help for Subaru Select Monitor".	Is registration for all keys complete?	END	Replace the body integrated unit <Ref. to SL-42, Body Integrated Unit.> and replace all the ignition keys (including transponder). Execute the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".

B: DTC P1570 ANTENNA**DTC DETECTING CONDITION:**

Faulty antenna

WIRING DIAGRAM:

IM-00279

Step	Check	Yes	No
1 CHECK ANTENNA CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from the antenna. <Ref. to SL-45, Immobilizer Antenna.> 3) Measure the resistance of the antenna circuit. Connector & terminal (B415) No. 1 — No. 2:	Is the resistance less than 10 Ω?	Go to step 2.	Replace the antenna. <Ref. to SL-45, Immobilizer Antenna.>
2 CHECK ANTENNA CIRCUIT. 1) Disconnect the harness connector from the body integrated unit. 2) Measure the resistance between harness connector and chassis ground. Connector & terminal (B280) No. 26 — 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 (B280) No. 25 — Chassis ground:	Is the resistance less than 10 Ω?	Repair the harness.	Go to step 4.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

Step	Check	Yes	No
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 (B280) No. 26 (+) — 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 (B280) No. 25 (+) — Chassis ground (-):	Is the voltage 0 V?	Go to step 6.	Because the battery voltage or ignition switch "ON" circuit is shorted, repair the harness between the body integrated unit and antenna.
6 CHECK BODY INTEGRATED UNIT FUNCTION. 1) Turn the ignition switch to OFF. 2) Connect the harness connector to the body integrated unit. 3) Insert the key into the ignition switch, then measure changes in voltage between the antenna harness connectors. Connector & terminal (B280) No. 25 (+) — No. 26 (-):	Is the voltage -30 — 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-42, Body Integrated Unit.> and replace all the ignition keys (including transponder). Execute the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".
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 "PC application help for Subaru Select Monitor".	Replace the body integrated unit <Ref. to SL-42, Body Integrated Unit.> and replace all the ignition keys (including transponder). Execute the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".

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

Step	Check	Yes	No
1 PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the "PC application help for Subaru Select Monitor".	Is registration for all keys complete?	END	Go to step 2.
2 CHECK FOR ANY OTHER DTC ON DISPLAY.	Is any other immobilizer DTC displayed?	Check the appropriate DTC using the "List of Diagnostic Trouble Code (DTC)". <Ref. to IM(diag)-15, List of Diagnostic Trouble Code (DTC).> Execute the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".	Replace the ECM. <Ref. to FU(H4DOTC)-46, Engine Control Module (ECM).> Replace the body integrated unit <Ref. to SL-42, Body Integrated Unit.> and replace all the ignition keys (including transponder). Execute the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

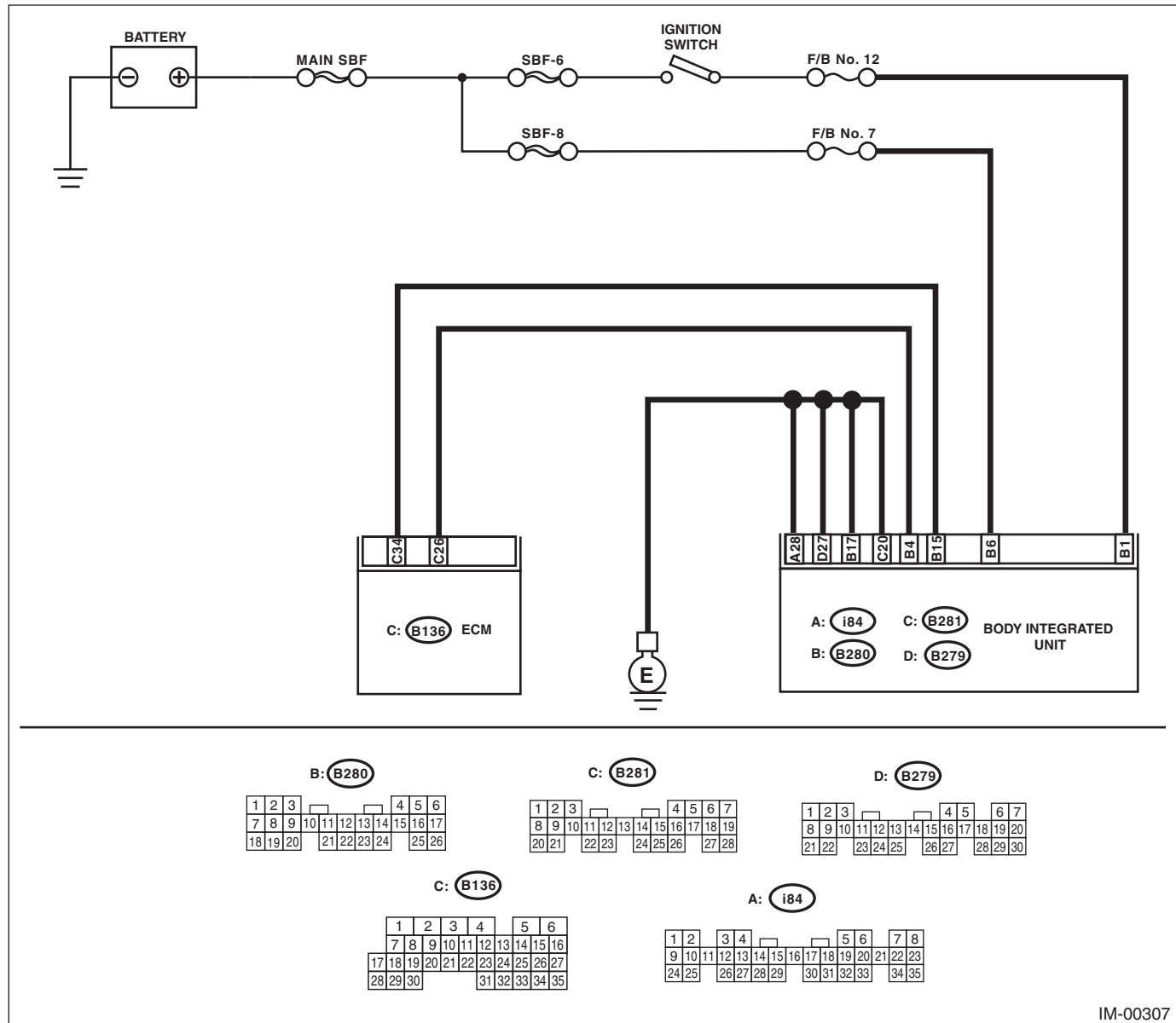
IMMOBILIZER (DIAGNOSTICS)

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

DTC DETECTING CONDITION:

Communication failure between body integrated unit and ECM

WIRING DIAGRAM:



IM-00307

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK BODY INTEGRATED UNIT POWER SUPPLY CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from the body integrated unit. 3) Measure the voltage between the body integrated unit harness connector terminal and chassis ground. Connector & terminal (B280) No. 6 (+) — Chassis ground (-):	Is the voltage 10 V or more?	Go to step 2.	Check the harness for open or short circuit between the body integrated unit and fuse.
2 CHECK BODY INTEGRATED UNIT POWER SUPPLY CIRCUIT. 1) Turn the ignition switch to ON. (engine OFF) 2) Measure the voltage between the body integrated unit harness connector terminal and chassis ground. Connector & terminal (B280) No. 1 (+) — Chassis ground (-):	Is the voltage 10 V or more?	Go to step 3.	Check the harness for open or short circuit between the body integrated unit and ignition switch.
3 CHECK BODY INTEGRATED UNIT GROUND CIRCUIT. 1) Turn the ignition switch to OFF. 2) Measure the resistance between the body integrated unit harness connector terminal and chassis ground. Connector & terminal (i84) No. 28 — Chassis ground: (B280) No. 17 — Chassis ground: (B281) No. 20 — Chassis ground: (B279) No. 27 — Chassis ground:	Is the resistance less than 10 Ω ?	Go to step 4.	Repair the open circuit of the body integrated unit ground circuit.
4 CHECK GROUND CIRCUIT FOR ECM. Measure the resistance between the ECM ground terminal and engine ground.	Is the resistance less than 10 Ω ?	Go to step 5.	Repair ground circuit of ECM.
5 CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND ECM. 1) Disconnect the harness connector from the ECM and body integrated unit. 2) Measure the resistance between the body integrated unit harness connector and ECM harness connector terminals. Connector & terminal (B280) No. 4 — (B136) No. 26:	Is the resistance less than 10 Ω ?	Go to step 6.	Repair the open circuit of the harness between the body integrated unit and ECM.
6 CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND ECM. Measure the resistance between the body integrated unit harness connector and ECM harness connector terminals. Connector & terminal (B280) No. 15 — (B136) No. 34:	Is the resistance less than 10 Ω ?	Go to step 7.	Repair the open circuit of the harness between the body integrated unit and ECM.
7 CHECK COMMUNICATION CIRCUIT HARNESS. 1) Turn the ignition switch to ON. (engine OFF) 2) Measure the voltage between the body integrated unit harness connector terminal and chassis ground. Connector & terminal (B280) No. 4 (+) — Chassis ground (-): (B280) No. 15 (+) — Chassis ground (-):	Is the voltage 0 V?	Go to step 8.	Because the battery voltage or ignition switch "ON" circuit is shorted, repair the harness between the body integrated unit and ECM.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

Step	Check	Yes	No
8 CHECK COMMUNICATION CIRCUIT HARNESS. Measure the voltage between the ECM harness connector terminal and engine ground. Connector & terminal (B136) No. 26 (+) — Engine ground (-): (B136) No. 34 (+) — Engine ground (-):	Is the voltage 0 V?	Go to step 9.	Because the battery voltage or ignition switch "ON" circuit is shorted, repair the harness between the body integrated unit and ECM.
9 CHECK ECM BY COMMUNICATION SHORT CHECK. 1) Connect the harness connector to the ECM. 2) Disconnect the harness connector from the body integrated unit. 3) Start the communication short check. <Ref. to IM(diag)-10, System Operation Check Mode.>	Is the communication short check OK?	Replace the body integrated unit <Ref. to SL-42, Body Integrated Unit.> and replace all the ignition keys (including transponder). Execute the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".	Replace the ECM. <Ref. to FU(H4DOTC)-46, Engine Control Module (ECM).> Next, execute the registration procedure. Refer to the "PC application help for Subaru Select Monitor".

E: DTC P1574 KEY COMMUNICATION FAILURE

DTC DETECTING CONDITION:

Communication failure between key and the body integrated unit

Step	Check	Yes	No
1 CHECK BODY INTEGRATED UNIT FUNCTION. Insert the key into the ignition switch (LOCK position), then measure changes in voltage between the antenna connectors. Connector & terminal (B415) No. 1 (+) — No. 2 (-):	Is the voltage -30 — 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 2.	Replace the body integrated unit <Ref. to SL-42, Body Integrated Unit.> and replace all the ignition keys (including transponder). Execute the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".
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 "PC application help for Subaru Select Monitor".	Replace the body integrated unit <Ref. to SL-42, Body Integrated Unit.> and replace all the ignition keys (including transponder). Execute the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".

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.

Step	Check	Yes	No
1 PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the "PC application help for Subaru Select Monitor".	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Go to step 2.
2 PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the "PC application help for Subaru Select Monitor".	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Go to step 3.
3 PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the "PC application help for Subaru Select Monitor".	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Replace the ECM. <Ref. to FU(H4DOTC)-46, Engine Control Module (ECM).>

G: DTC P1577 IMM CONTROL MODULE EEPROM

DTC DETECTING CONDITION:

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

Step	Check	Yes	No
1 PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the "PC application help for Subaru Select Monitor".	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Go to step 2.
2 PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the "PC application help for Subaru Select Monitor".	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Go to step 3.
3 PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the "PC application help for Subaru Select Monitor".	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Replace the body integrated unit. <Ref. to SL-42, Body Integrated Unit.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

H: DTC P1578 METER FAILURE

DTC DETECTING CONDITION:

Reference code incompatibility between combination meter and body integrated unit

Step	Check	Yes	No
1 CHECK DIAGNOSTIC TROUBLE CODE (DTC). Read the DTC of body integrated unit using Subaru Select Monitor.	Is B1401 detected?	Go to step 2.	<Ref. to IM(diag)-20, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
2 CHECK LAN COMMUNICATION SYSTEM. Inspect LAN communication system. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	DTC U1300, U1301, U1302, B1100 or B1101 of the body integrated unit is displayed.	Perform the diagnosis according to DTC. <Ref. to LAN(diag)-28, List of Diagnostic Trouble Code (DTC).>	Go to step 3.
3 CHECK COMBINATION METER. 1) Make a registration of immobilizer. Refer to the "PC application help for Subaru Select Monitor". 2) Start the engine.	Does the engine start?	System is normal.	Replace the combination meter. <Ref. to IDI-16, REMOVAL, Combination Meter.>

I: DTC B1401 M COLLATION NG

NOTE:

For the diagnostic procedure, refer to DTC P1578 "METER FAILURE". <Ref. to IM(diag)-24, DTC P1578 METER FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

J: DTC B1402 IMMOBILIZER KEY COLLATION NG

NOTE:

Refer to the following inspection for diagnostic procedure.

- DTC P0513 "INCORRECT IMMOBILIZER KEY". <Ref. to IM(diag)-16, DTC P0513 INCORRECT IMMOBILIZER KEY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
- DTC P1570 "ANTENNA". <Ref. to IM(diag)-17, DTC P1570 ANTENNA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
- DTC P1574 "KEY COMMUNICATION FAILURE". <Ref. to IM(diag)-22, DTC P1574 KEY COMMUNICATION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

K: DTC B1403 E/G REQUEST NG

NOTE:

For the diagnostic procedure, refer to DTC P1572 "IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT)". <Ref. to IM(diag)-20, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

LAN SYSTEM (DIAGNOSTICS)

LAN(diag)

	Page
1. Basic Diagnostic Procedure	2
2. Check List for Interview	3
3. General Description	6
4. Electrical Component Location	8
5. Control Module I/O Signal	10
6. Subaru Select Monitor	14
7. Read Diagnostic Trouble Code (DTC)	15
8. Clear Memory Mode	16
9. Read Current Data	17
10. Function Setting (Customize)	22
11. Registration Body Integrated Unit	24
12. Function Check	27
13. List of Diagnostic Trouble Code (DTC)	28
14. Diagnostic Procedure with Diagnostic Trouble Code (DTC)	31
15. General Diagnostic Table	78