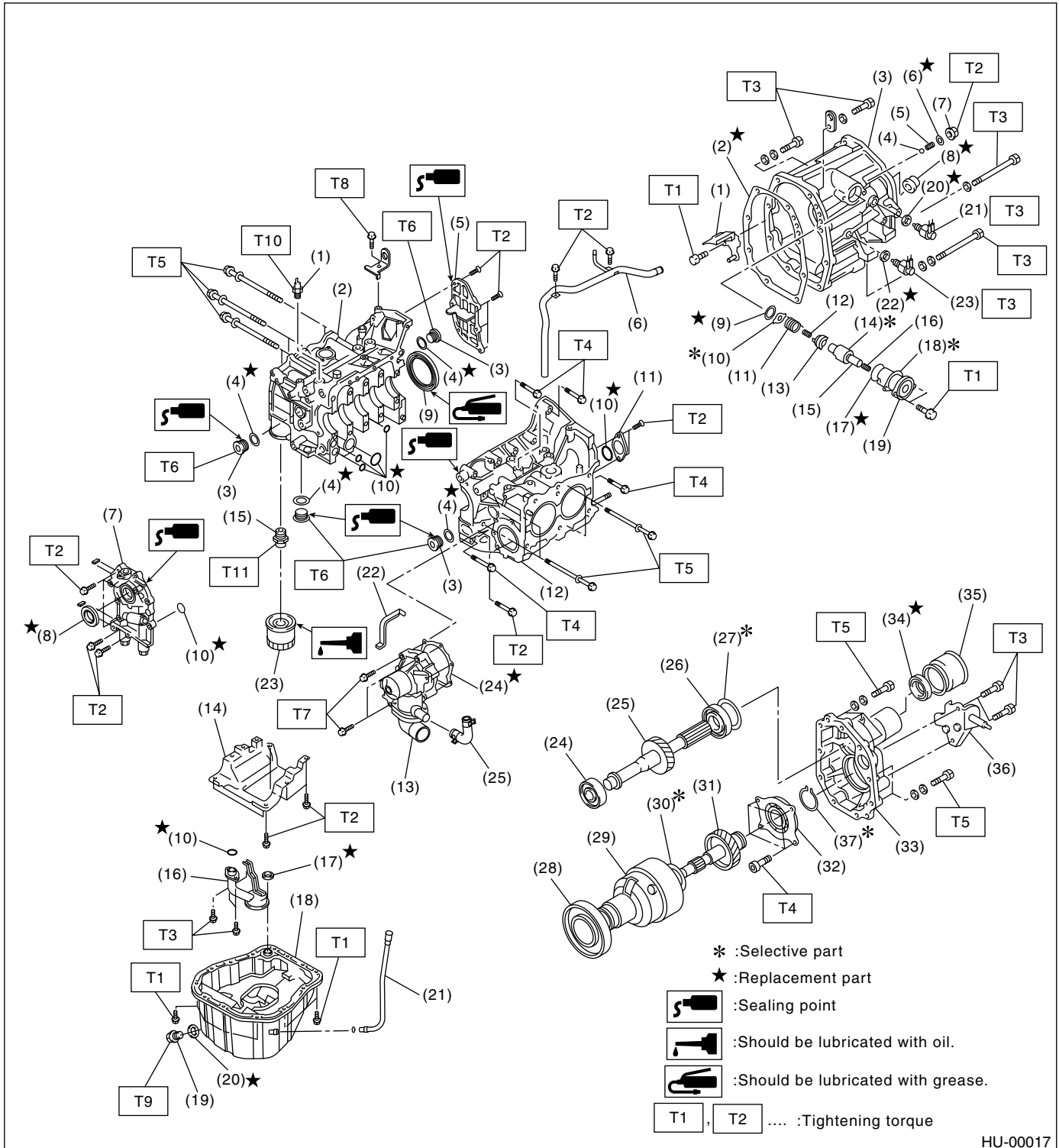


3. COMPONENT

Illustrations are provided for each component. The information necessary for repair work (tightening torque, grease up points, etc.) is described on these illustrations. Information is described using symbol.

To order parts, refer to parts catalogue.

Example:

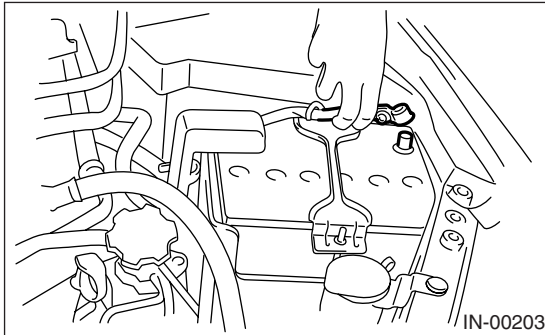


HU-00017

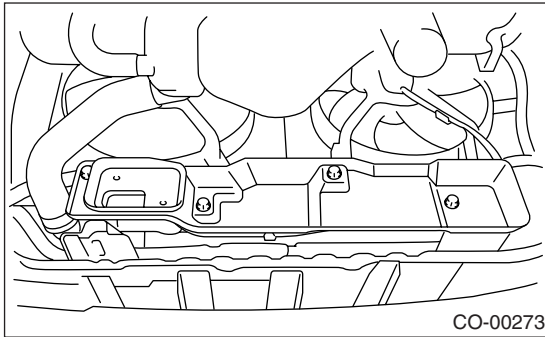
6. Radiator

A: REMOVAL

- 1) Set the vehicle on a lift.
- 2) Disconnect the ground cable from battery.

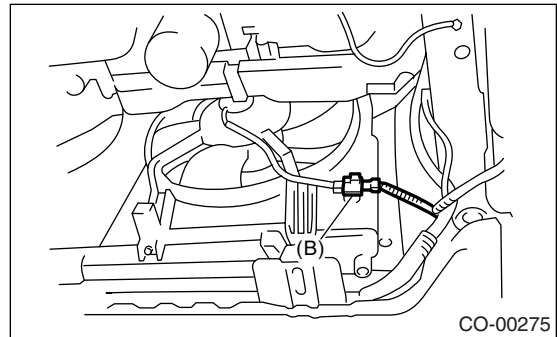
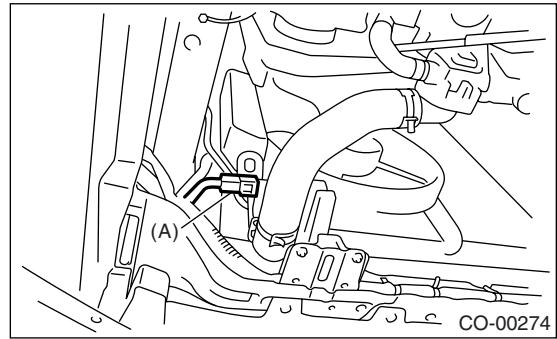


- 3) Lift-up the vehicle.
- 4) Remove the under cover.
- 5) Remove the heat shield cover from radiator. (Model without ATF warmer)

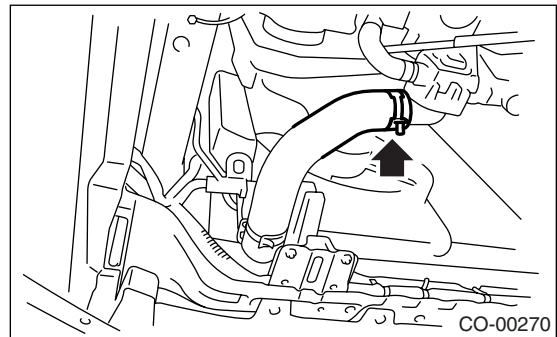


- 6) Drain engine coolant completely.
<Ref. to CO(H4SO 2.0)-13, DRAINING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

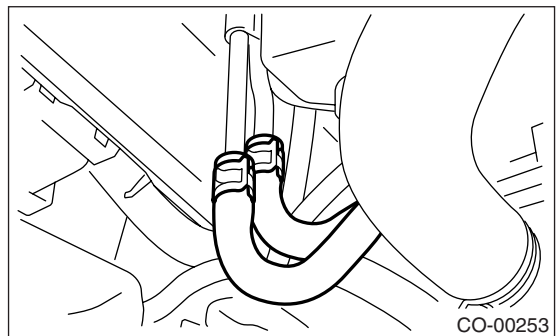
- 7) Disconnect the connector (A) of radiator main fan motor and connector (B) of sub fan motor.



- 8) Disconnect the radiator outlet hose from thermostat cover.



- 9) Disconnect the ATF cooler hoses from ATF pipes. (Model without ATF warmer)
Plug the ATF pipe to prevent ATF leaks.



- 10) Lower the vehicle.
- 11) Disconnect the over flow hose.
- 12) Remove the reservoir tank. <Ref. to CO(H4SO 2.0)-29, REMOVAL, Reservoir Tank.>

BZ:DTC P2127 THROTTLE/PEDAL POSITION SENSOR/SWITCH "E" CIRCUIT LOW INPUT

DTC DETECTING CONDITION:

Immediately at fault recognition

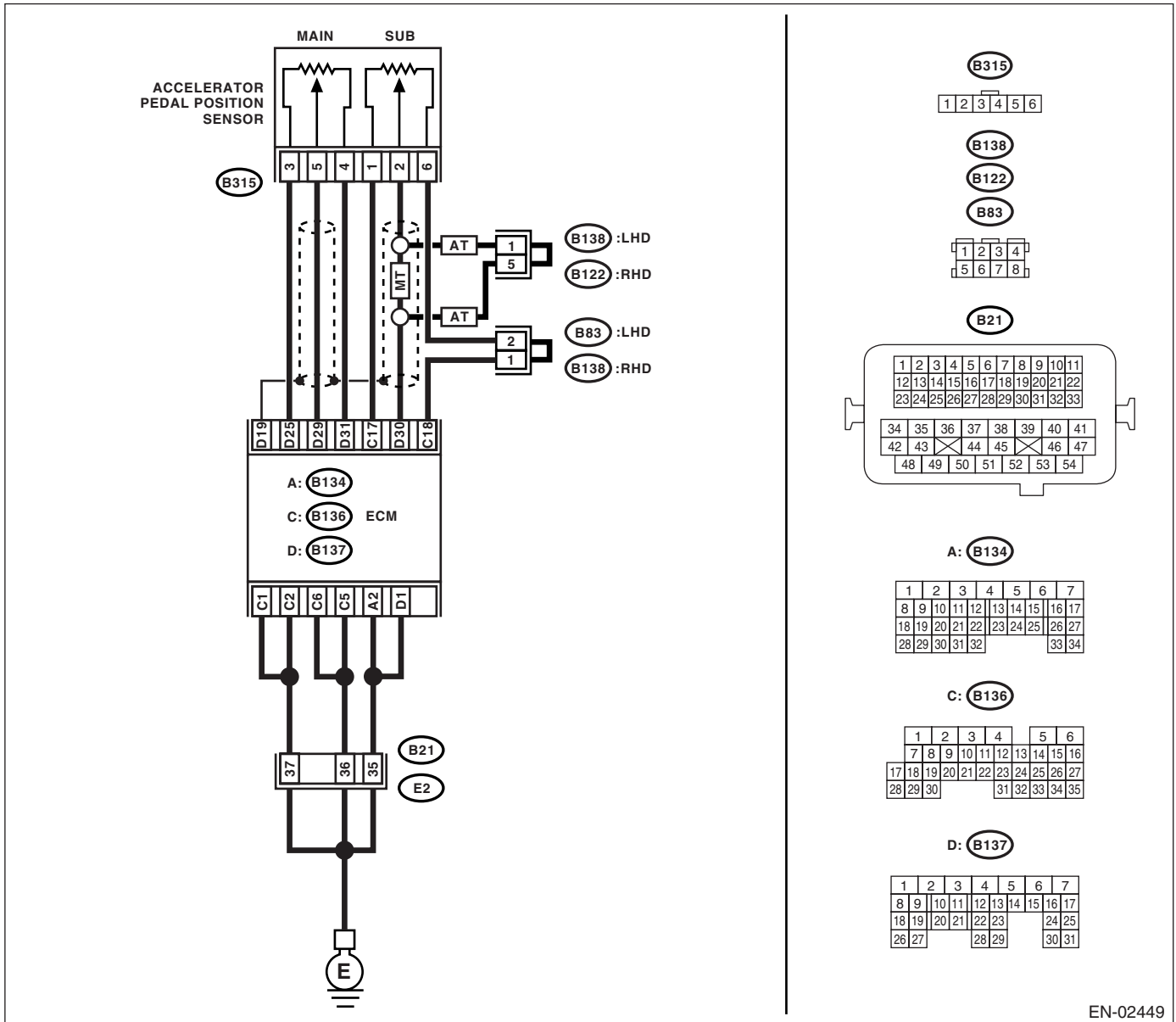
TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4SO 2.0)(diag)-38, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4SO 2.0)(diag)-32, OPERATION, Inspection Mode.>.

WIRING DIAGRAM:



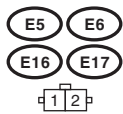
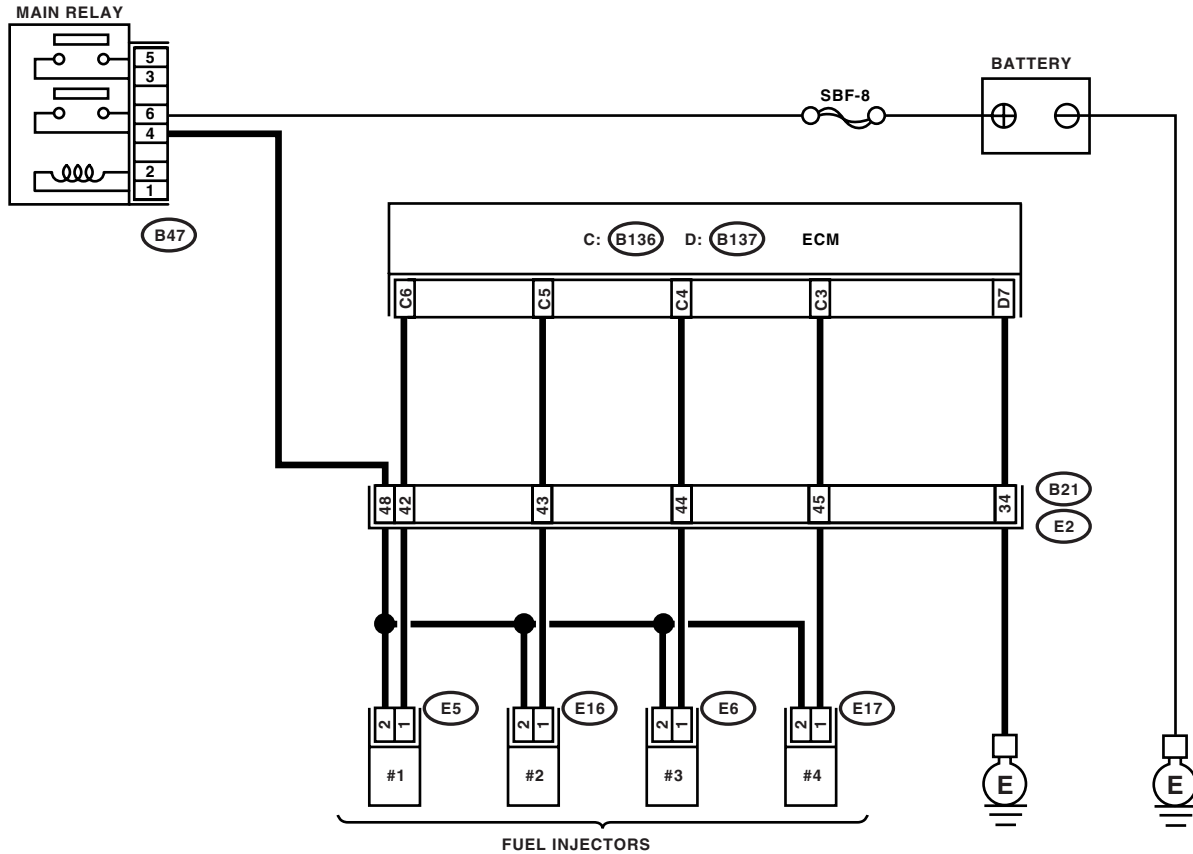
EN-02449

F: FUEL INJECTOR CIRCUIT

CAUTION:

- Check or repair only faulty parts.
- After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4DOTC)(diag)-30, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4DOTC)(diag)-28, PROCEDURE, Inspection Mode.>.

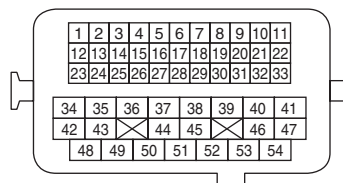
WIRING DIAGRAM:



C: B136



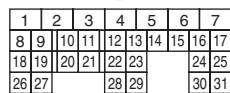
B21



B47



D: B137



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

ENGINE (DIAGNOSTICS)

AH:DTC P0138 O2 SENSOR CIRCUIT HIGH VOLTAGE (BANK 1 SENSOR 2)

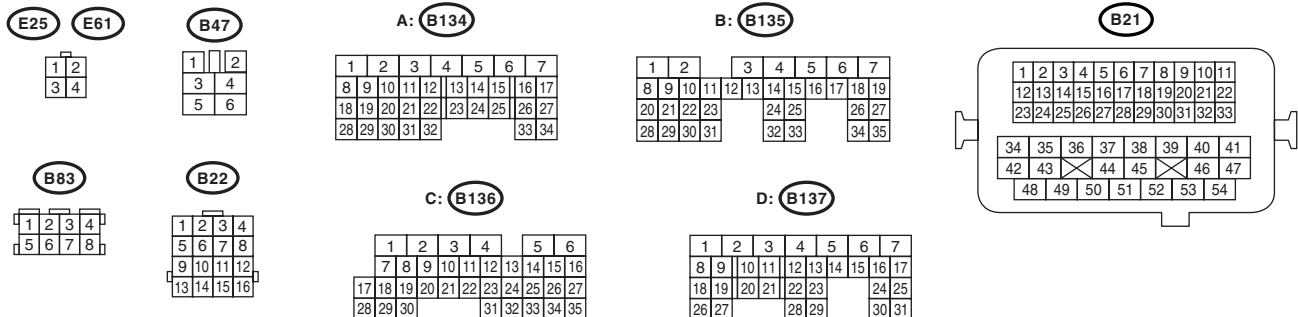
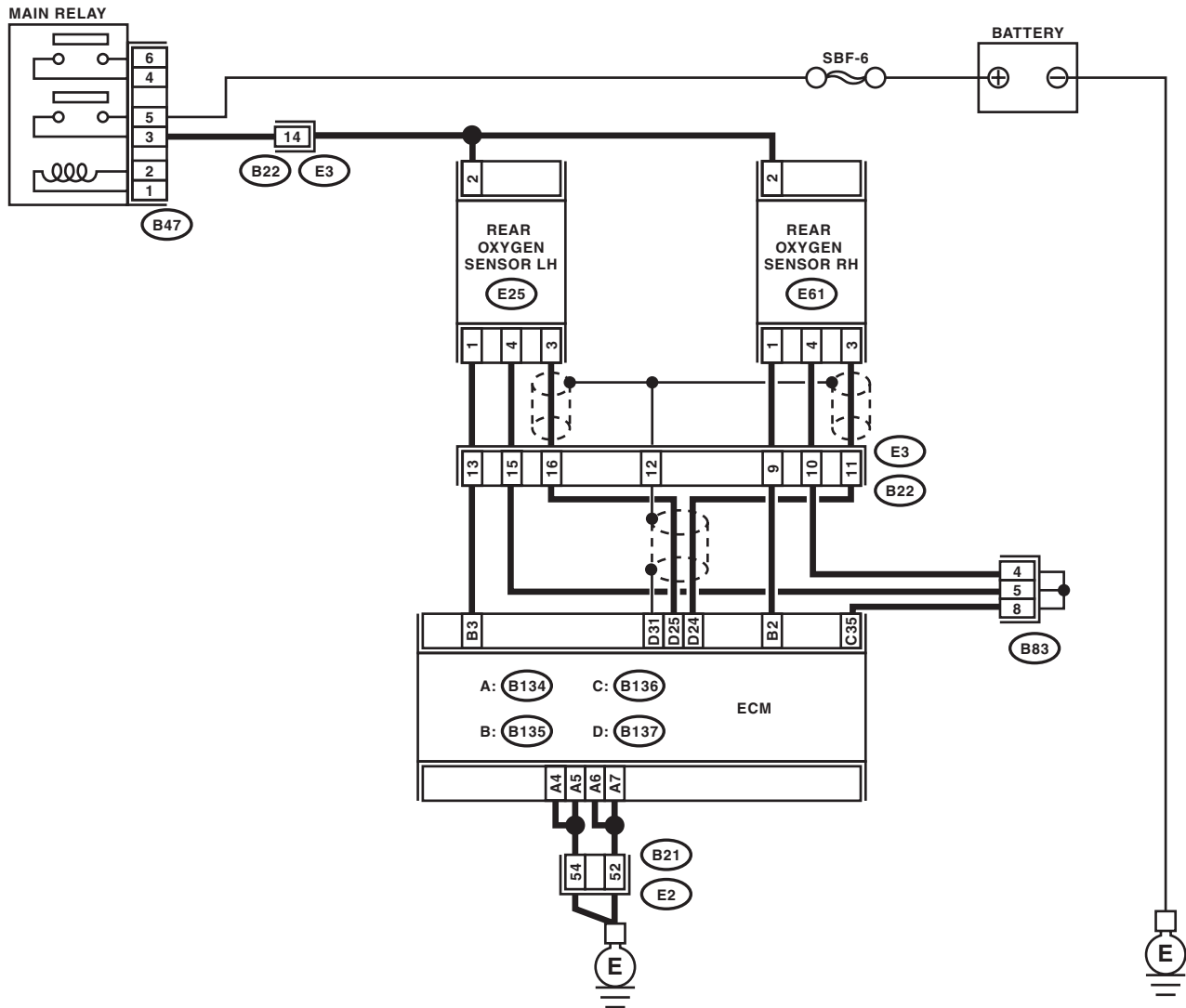
DTC DETECTING CONDITION:

Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H6DO)(diag)-40, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-33, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



EN-02496

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

VEHICLE DYNAMICS CONTROL (VDC) (DIAGNOSTICS)

D: DTC C0027 REAR ABS WHEEL SPEED SENSOR LH POWER SUPPLY MALFUNCTION

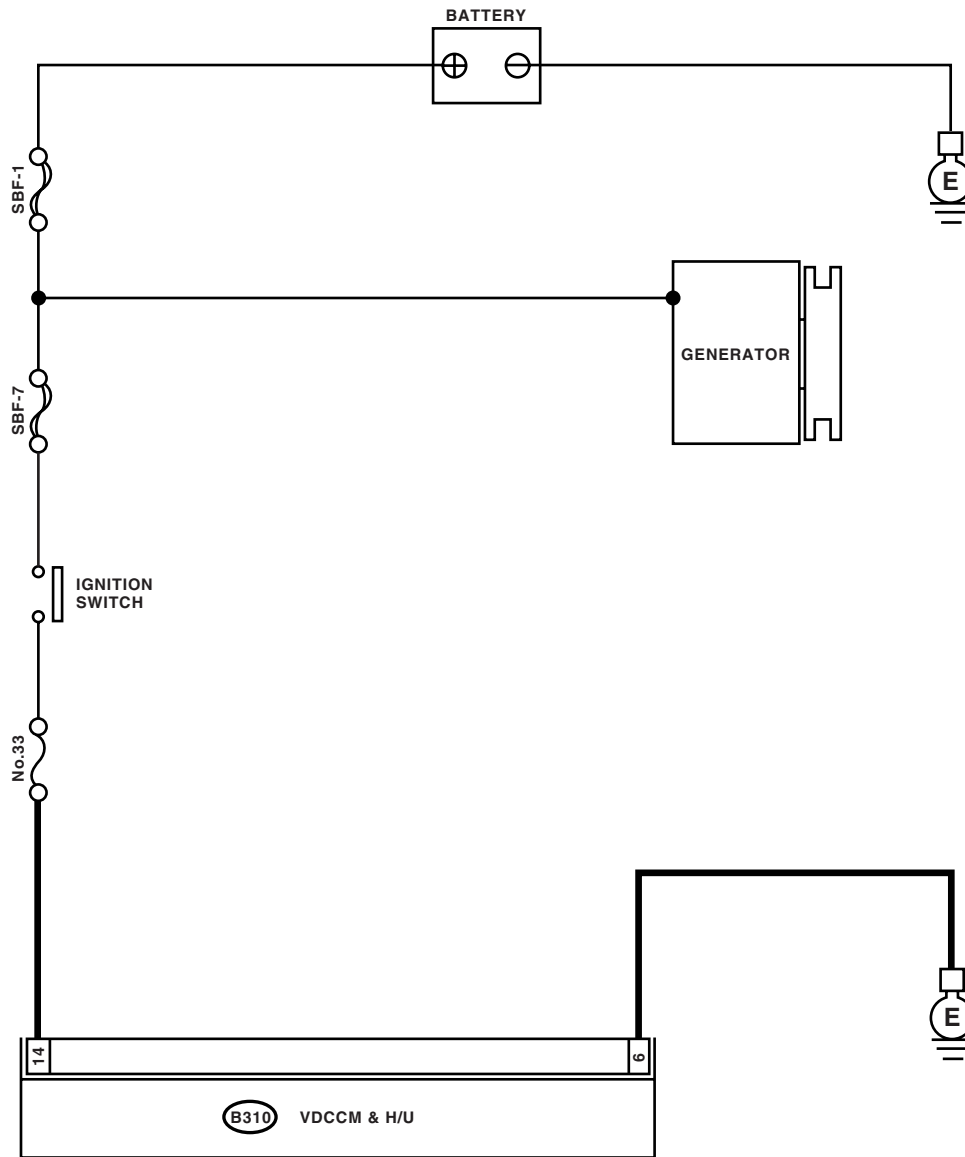
DTC DETECTING CONDITION:

Defective ABS wheel speed sensor

TROUBLE SYMPTOM:

- ABS does not operate.
- VDC does not operate.

WIRING DIAGRAM:



(B310)

1	2	3	4	5	6	7	8	9	10						
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42

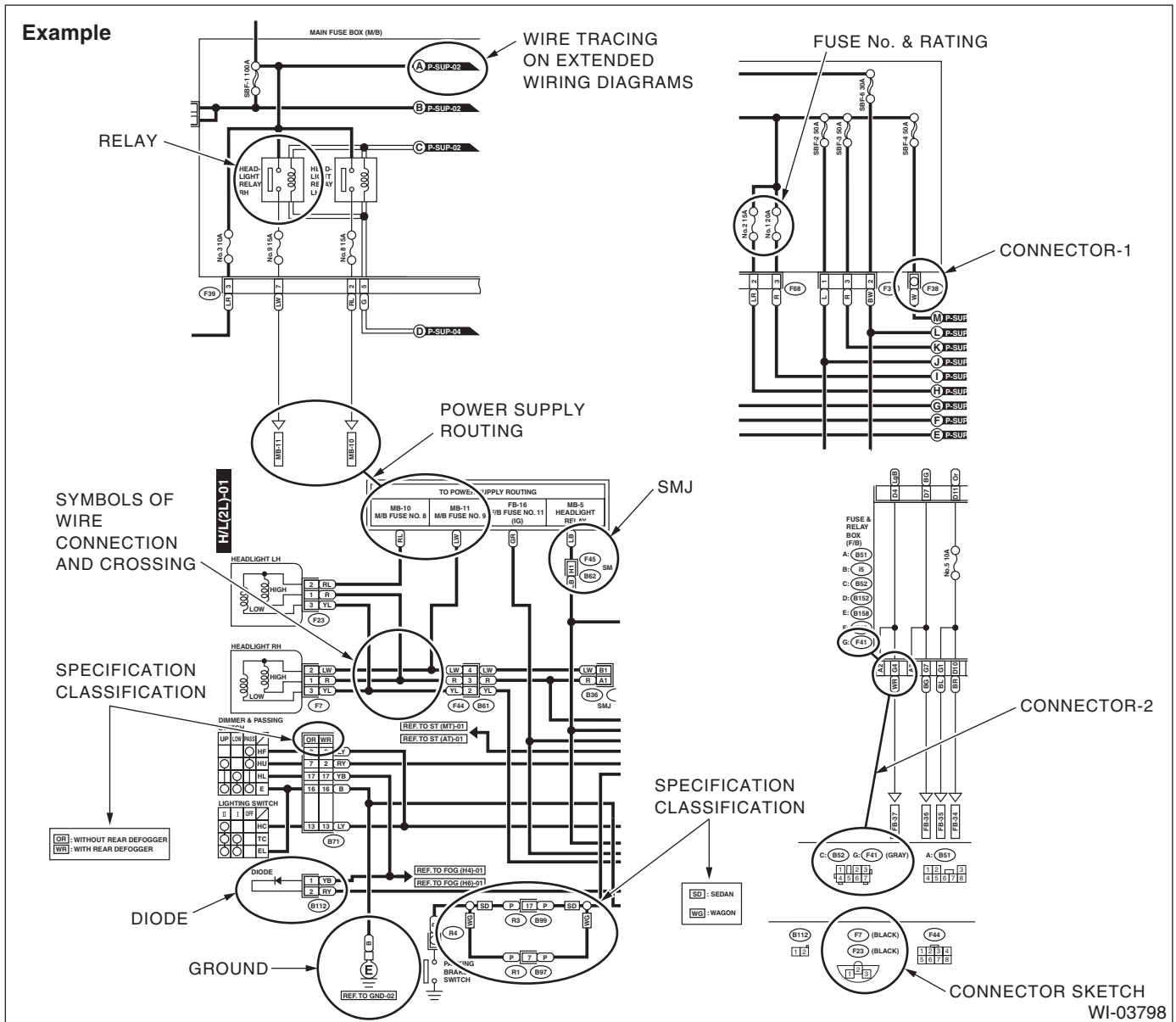
VDC00216

Basic Diagnostic Procedure

WIRING SYSTEM

D: SYMBOLS IN WIRING DIAGRAMS

A number of symbols are used in each wiring diagram to easily identify parts or circuits.



1. RELAY

A symbol used to indicate a relay.

2. CONNECTOR 1

The sketch of the connector indicates the one-pole types.

3. WIRING CONNECTION

Some wiring diagrams are indicated in foldouts for convenience. Wiring destinations are indicated where necessary by corresponding symbols. (When two pages are needed for clear indication)

4. FUSE No. & RATING

The "FUSE No. & RATING" corresponds with that used in the fuse box (main fuse box, fuse and joint box).

5. CONNECTOR 2

- Each connector is indicated by a symbol.
- Each terminal number is indicated in the corresponding wiring diagram in an abbreviated form.
- For example, terminal number "G4" refers to No. 4 terminal of connector (G: F41) shown in the connector sketch.

List of Diagnostic Trouble Code (DTC)

ENGINE (DIAGNOSTICS)

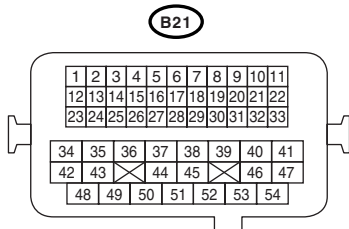
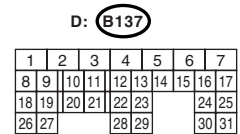
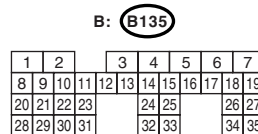
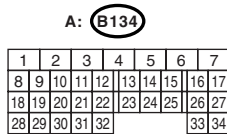
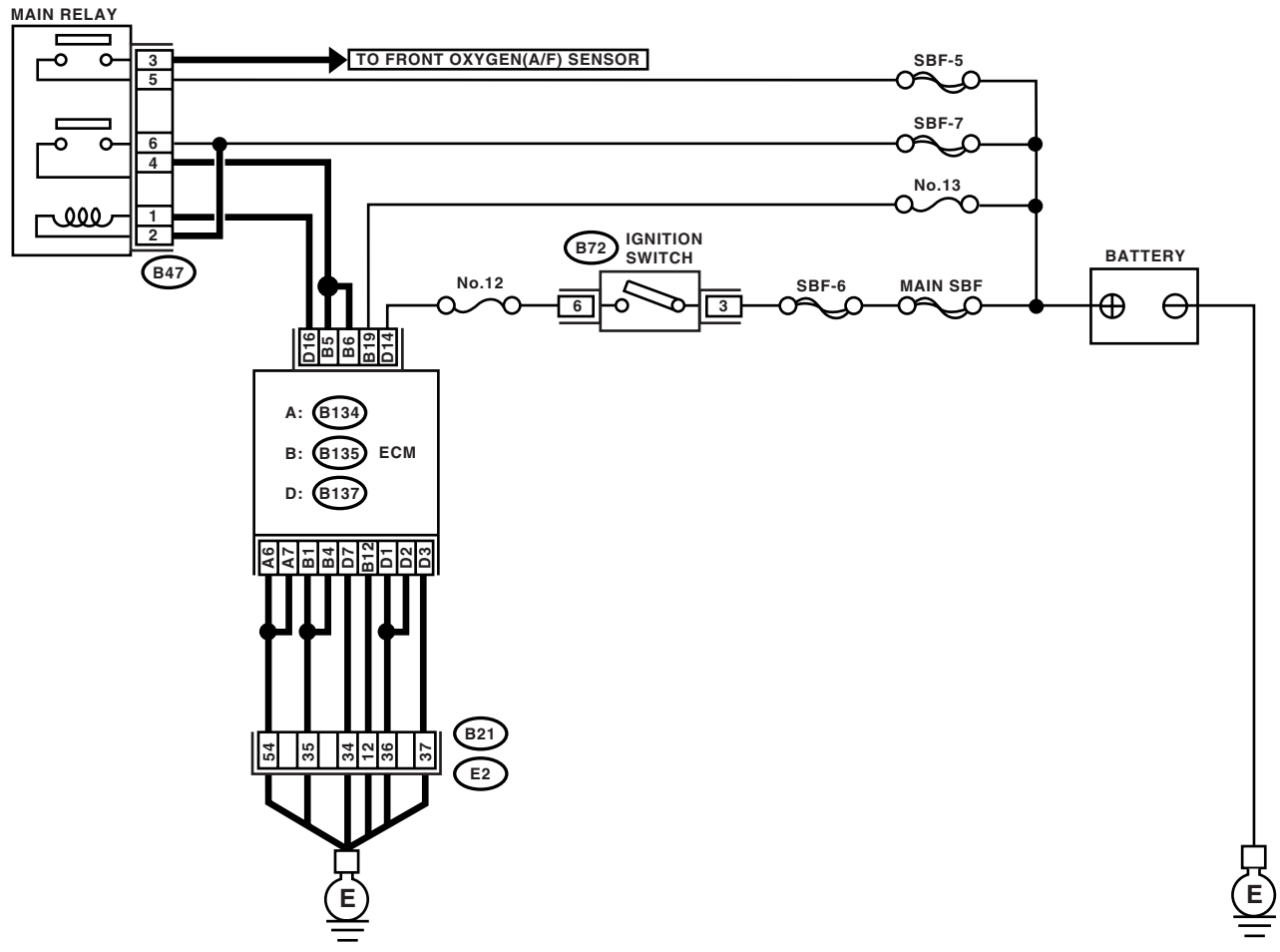
2. KA AND KS MODEL

DTC	Item	Reference
P0030	HO2S Heater Control Circuit (Bank 1 Sensor 1)	<Ref. to EN(H4SO 2.0)(diag)-69, DTC P0030 HO2S HEATER CONTROL CIRCUIT (BANK 1 SENSOR 1), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0031	HO2S Heater Control Circuit Low (Bank 1 Sensor 1)	<Ref. to EN(H4SO 2.0)(diag)-71, DTC P0031 HO2S HEATER CONTROL CIRCUIT LOW (BANK 1 SENSOR 1), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0032	HO2S Heater Control Circuit High (Bank 1 Sensor 1)	<Ref. to EN(H4SO 2.0)(diag)-74, DTC P0032 HO2S HEATER CONTROL CIRCUIT HIGH (BANK 1 SENSOR 1), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0037	HO2S Heater Control Circuit Low (Bank 1 Sensor 2)	<Ref. to EN(H4SO 2.0)(diag)-76, DTC P0037 HO2S HEATER CONTROL CIRCUIT LOW (BANK 1 SENSOR 2), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0038	HO2S Heater Control Circuit High (Bank 1 Sensor 2)	<Ref. to EN(H4SO 2.0)(diag)-79, DTC P0038 HO2S HEATER CONTROL CIRCUIT HIGH (BANK 1 SENSOR 2), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0107	Manifold Absolute Pressure/Barometric Pressure Circuit Low Input	<Ref. to EN(H4SO 2.0)(diag)-81, DTC P0107 MANIFOLD ABSOLUTE PRESSURE/BAROMETRIC PRESSURE CIRCUIT LOW INPUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0108	Manifold Absolute Pressure/Barometric Pressure Circuit High Input	<Ref. to EN(H4SO 2.0)(diag)-84, DTC P0108 MANIFOLD ABSOLUTE PRESSURE/BAROMETRIC PRESSURE CIRCUIT HIGH INPUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0112	Intake Air Temperature Sensor 1 Circuit Low Input	<Ref. to EN(H4SO 2.0)(diag)-87, DTC P0112 INTAKE AIR TEMPERATURE SENSOR 1 CIRCUIT LOW, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0113	Intake Air Temperature Sensor 1 Circuit High Input	<Ref. to EN(H4SO 2.0)(diag)-89, DTC P0113 INTAKE AIR TEMPERATURE SENSOR 1 CIRCUIT HIGH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0117	Engine Coolant Temperature Circuit Low	<Ref. to EN(H4SO 2.0)(diag)-92, DTC P0117 ENGINE COOLANT TEMPERATURE CIRCUIT LOW, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0118	Engine Coolant Temperature Circuit High	<Ref. to EN(H4SO 2.0)(diag)-94, DTC P0118 ENGINE COOLANT TEMPERATURE CIRCUIT HIGH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0122	Throttle/Pedal Position Sensor/Switch "A" Circuit Low	<Ref. to EN(H4SO 2.0)(diag)-96, DTC P0122 THROTTLE/PEDAL POSITION SENSOR/SWITCH "A" CIRCUIT LOW, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0123	Throttle/Pedal Position Sensor/Switch "A" Circuit High	<Ref. to EN(H4SO 2.0)(diag)-99, DTC P0123 THROTTLE/PEDAL POSITION SENSOR/SWITCH "A" CIRCUIT HIGH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0125	Insufficient Coolant Temperature for Closed Loop Fuel Control	<Ref. to EN(H4SO 2.0)(diag)-102, DTC P0125 INSUFFICIENT COOLANT TEMPERATURE FOR CLOSED LOOP FUEL CONTROL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0130	O2 Sensor Circuit Low Voltage (Bank 1 Sensor 1)	<Ref. to EN(H4SO 2.0)(diag)-104, DTC P0130 O2 SENSOR CIRCUIT (BANK 1 SENSOR 1), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0131	O2 Sensor Circuit Low Voltage (Bank 1 Sensor 1)	<Ref. to EN(H4SO 2.0)(diag)-107, DTC P0131 O2 SENSOR CIRCUIT LOW VOLTAGE (BANK 1 SENSOR 1), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0132	O2 Sensor Circuit High Voltage (Bank 1 Sensor 1)	<Ref. to EN(H4SO 2.0)(diag)-109, DTC P0132 O2 SENSOR CIRCUIT HIGH VOLTAGE (BANK 1 SENSOR 1), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0133	O2 Sensor Circuit Slow Response (Bank 1 Sensor 1)	<Ref. to EN(H4SO 2.0)(diag)-111, DTC P0133 O2 SENSOR CIRCUIT SLOW RESPONSE (BANK 1 SENSOR 1), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

ENGINE (DIAGNOSTICS)

WIRING DIAGRAM:



EN-03519

Step	Check	Yes	No
1 CHECK INPUT VOLTAGE OF ECM. 1) Turn the ignition switch to ON. 2) Measure the voltage between ECM connector and chassis ground. Connector & terminal (B135) No. 5 (+) — Chassis ground (-): (B135) No. 6 (+) — Chassis ground (-):	Is the voltage 10 — 13 V?	Go to step 2.	Repair the open or ground short circuit of power supply circuit.

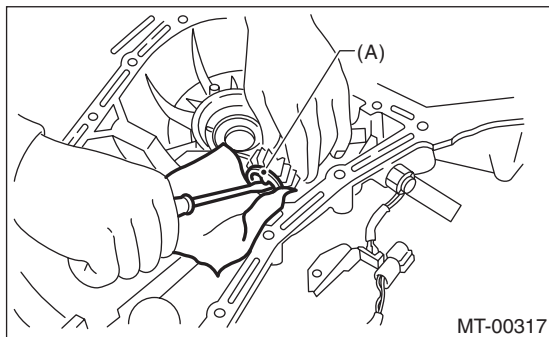
Counter Gear

MANUAL TRANSMISSION AND DIFFERENTIAL

22.Counter Gear

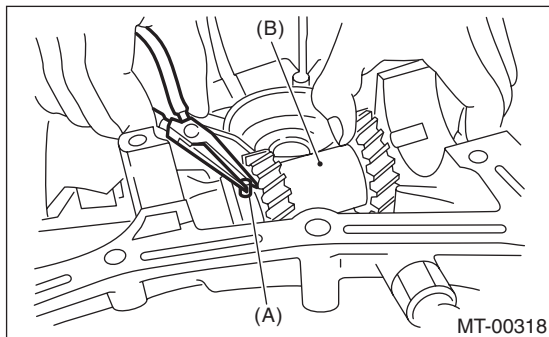
A: REMOVAL

- 1) Remove the manual transmission assembly from vehicle. <Ref. to 5MT-30, REMOVAL, Manual Transmission Assembly.>
- 2) Remove the transfer case with extension case assembly. <Ref. to 5MT-43, REMOVAL, Transfer Case and Extension Case Assembly.>
- 3) Remove the transmission case. <Ref. to 5MT-55, REMOVAL, Transmission Case.>
- 4) Move the counter gear shaft until it touches transmission case, and remove the snap ring with a suitable tool.



(A) Snap ring

- 5) Slide the washer to the rear of high-low counter shaft, and remove the straight pin from counter shaft.



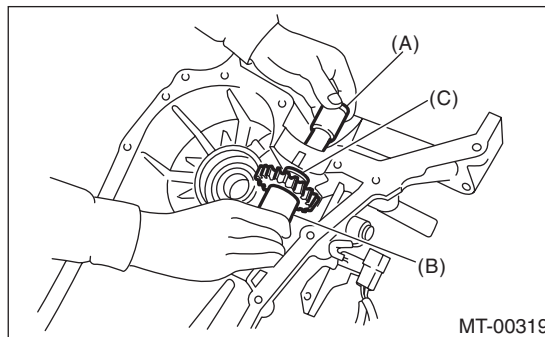
(A) Straight pin
(B) Counter gear

- 6) Remove the counter shaft from transmission case, taking care not to drop the counter gear and two washers.

NOTE:

- Be careful not to damage the O-ring.
- Be careful not to drop the straight pin on front side.

- Be careful not to drop the two needle bearings and collar contained in counter gear.



(A) Counter shaft
(B) Counter gear
(C) Washers

B: INSTALLATION

- 1) Install the O-ring and straight pin onto counter gear shaft.
- 2) Install the following parts in main case (Right-side), and push the shaft perfectly into case.
 - Counter gear shaft
 - Two counter gear washers
 - Two needle bearings
 - Counter gear collar
 - Counter gear
 - Straight pin
 - Snap ring
- 3) Install the transmission case. <Ref. to 5MT-57, INSTALLATION, Transmission Case.>
- 4) Install the transfer case with extension case assembly. <Ref. to 5MT-43, INSTALLATION, Transfer Case and Extension Case Assembly.>
- 5) Install the manual transmission assembly on vehicle. <Ref. to 5MT-32, INSTALLATION, Manual Transmission Assembly.>

NOTE:

- Make sure that the cut-out end surface of counter gear shaft does not protrude above the end surface of the case.
- Position the cut-out portion of counter gear shaft.

C: INSPECTION

- 1) After installing the snap ring, measure the clearance between snap ring and counter washer.

Clearance:

0.05 — 0.35 mm (0.0020 — 0.0138 in)

- 2) If the clearance is out of specified value, select a snap ring and install to put clearance within specified value. <Ref. to 5MT-97, ADJUSTMENT, Counter Gear.>

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

P: DTC 45 SIDE AIRBAG RH FAILURE

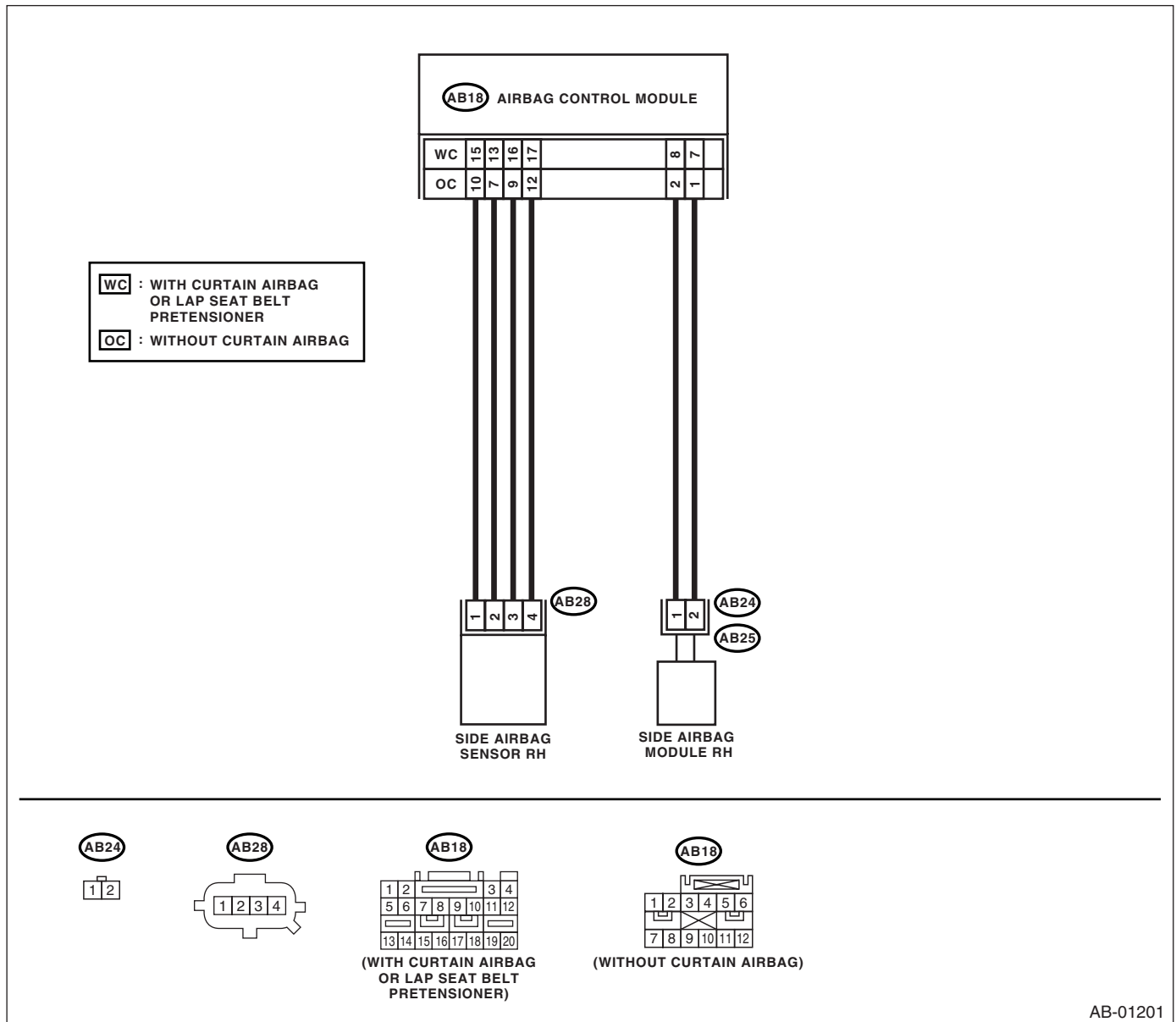
DTC DETECTING CONDITION:

- Side airbag harness (RH) circuit is shorted to power supply.
- Airbag control module is faulty.

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- When replacing the airbag module, seat belt pretensioner, roll connector, control module and sensor, reconnect each part and check that the warning light operates properly.
- When inspecting the airbag main harness, disconnect the airbag module connector of the driver's and passenger's seats for safety reasons.
- When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector, seat belt pretensioner connector and lap seat belt pretensioner connector for safety reasons.

WIRING DIAGRAM:



AB-01201

BJ:DTC P0452 EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR LOW INPUT

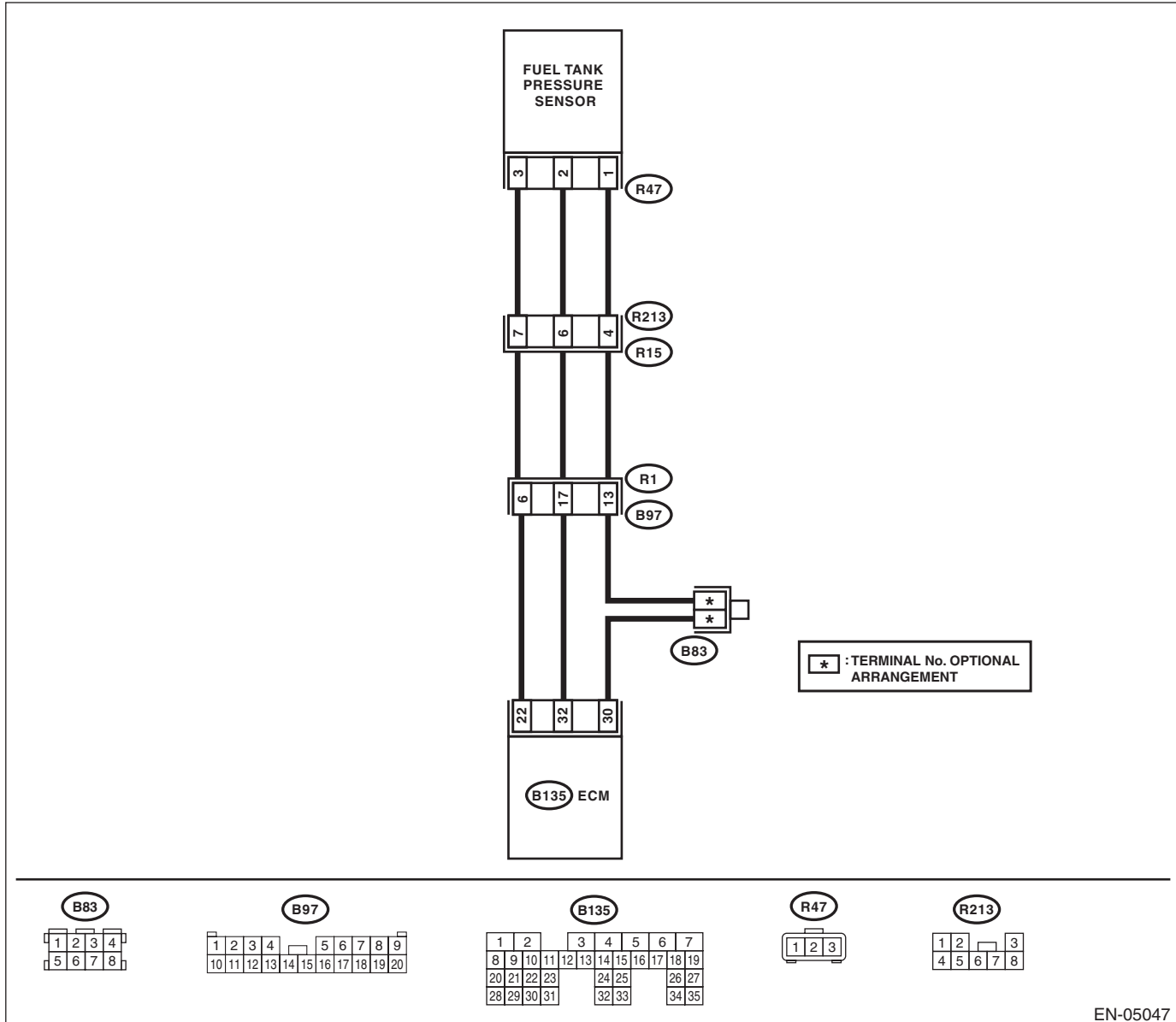
DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(H4SO)-123, DTC P0452 EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR LOW INPUT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H4SO)(diag)-50, OPERATION, Clear Memory Mode.>, and Inspection Mode <Ref. to EN(H4SO)(diag)-41, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:

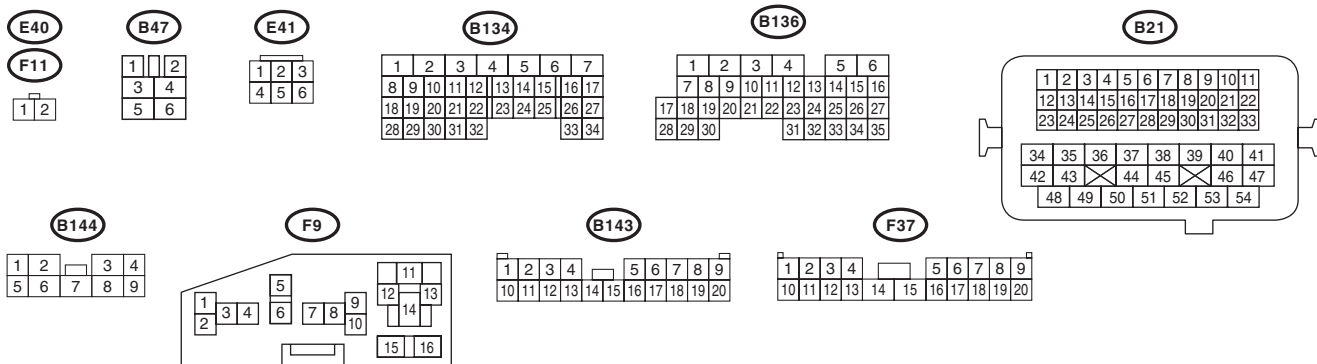
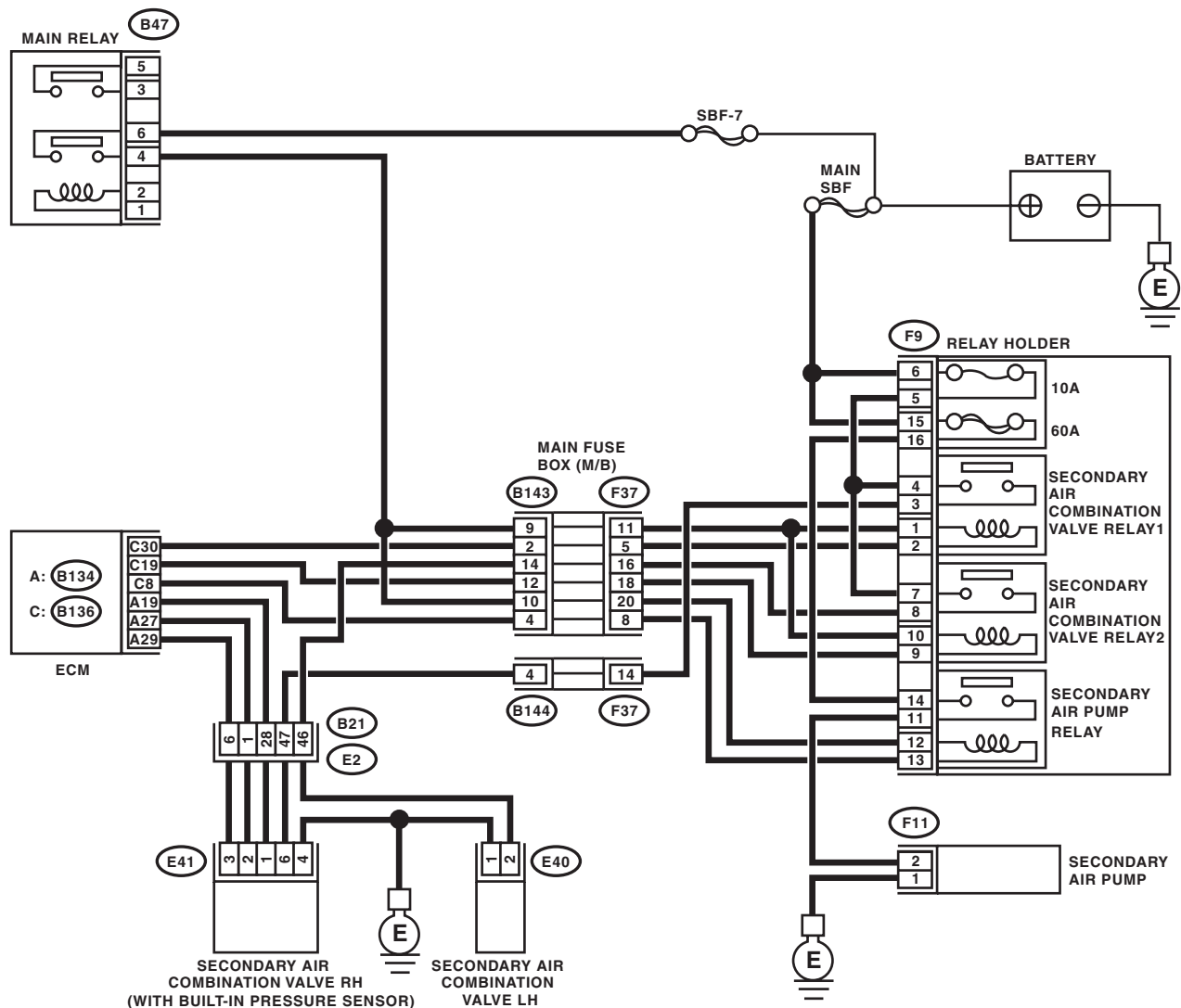


EN-05047

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

ENGINE (DIAGNOSTICS)

WIRING DIAGRAM:



EN-05678

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	CHECK DTC.	Is DTC of CAN communication displayed?	Perform the diagnosis according to DTC.	Go to step 2.
2	CHECK FUSE (NO. 8). 1) Turn the ignition switch to OFF. 2) Remove the fuse (No. 8).	Is the fuse (No. 8) blown out?	Replace the fuse (No. 8). If the replaced fuse (No. 8) has blown out easily, repair the short circuit of harness between fuse (No. 8) and stop light switch.	Go to step 3.
3	CHECK FUSE (RELAY BLOCK) (7.5A). Remove the fuse (relay block) (7.5 A).	Is the fuse (7.5A) blown out?	Replace the fuse (7.5A). If the replaced fuse (7.5A) blows out easily, repair the short circuit of harness between fuse (7.5A) and TCM.	Go to step 4.
4	CHECK BODY INTEGRATED UNIT. 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to data link connector. 3) Turn the ignition switch to ON. (engine OFF) 4) Run the Subaru Select Monitor. 5) Depress the brake pedal. 6) Read the data of "Stop Light Switch" using Subaru Select Monitor. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is ON displayed?	Go to step 5.	Go to step 6.
5	CHECK TCM. Read the data of "Stop Light Switch" using Subaru Select Monitor. <Ref. to 4AT(diag)-16, OPERATION, Subaru Select Monitor.>	Is ON displayed?	A temporary poor contact of connector or harness may be the cause. Check the poor contact.	Replace the TCM. <Ref. to 4AT-61, Transmission Control Module (TCM).>
6	CHECK BODY INTEGRATED UNIT INPUT SIGNAL. 1) Disconnect the connector from body integrated unit. 2) Depress the brake pedal. 3) Measure the voltage of harness between the body integrated unit and chassis ground. Connector & terminal (B281) No. 23 (+) — Chassis ground (-):	Is the voltage 10 V or more?	Go to step 9.	Go to step 7.
7	CHECK HARNESS CONNECTOR BETWEEN BODY INTEGRATED UNIT AND STOP LIGHT SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from stop light switch. 3) Measure the resistance of harness between body integrated unit and stop light switch. Connector & terminal (B281) No. 23 — (B65) No. 3:	Is the resistance less than 1 Ω ?	Go to step 8.	Repair the open circuit of harness between body integrated unit and stop light switch.

Airbag Connector

AIRBAG SYSTEM

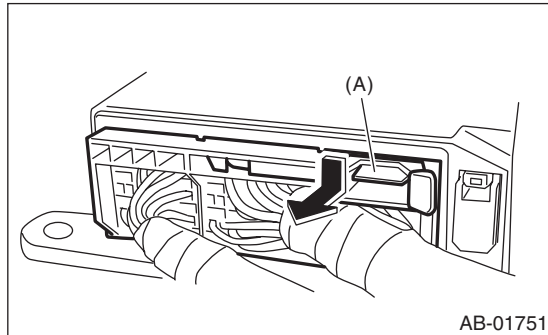
2. Airbag Connector

A: PROCEDURE

1. AIRBAG CONTROL MODULE

1) How to disconnect:

Press the lock lever plate (A) and pull out the lock lever.



2) How to connect:

Insert the connector, push the lock lever in securely.

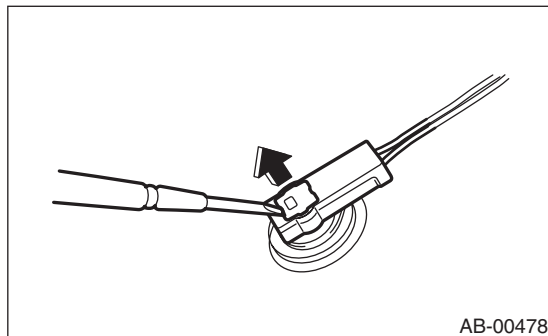
CAUTION:

Be sure to insert the connector in until it is locked. Then pull it lightly to make sure that it is locked.

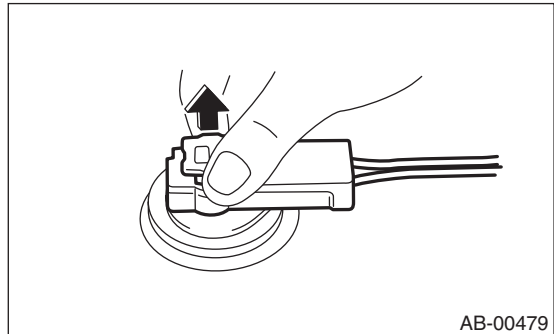
2. DRIVER'S AIRBAG MODULE, PRETENSIONER AND CURTAIN AIRBAG MODULE

1) How to disconnect:

(1) Using a flat tip screwdriver, pry the push lock upward to unlock.



(2) Pull the connector to disconnect from the driver's airbag module assembly or the retractor assembly.

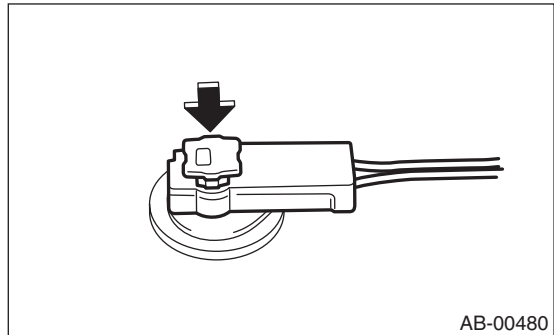


2) How to connect:

Connect the connector in the reverse order of disconnecting. At this time, be sure to insert the push lock until a clicking sound is heard.

CAUTION:

- Be sure to insert the connector in until it is locked. Then pull it lightly to make sure that it is locked.
- Be sure to push the push lock in securely.



NOTE:

The connector cannot be connected when the push lock is in the lock position. Move the push lock to the release position and connect the connector.