

# **ENGINE (DIAGNOSTICS)**

BASIC DIAGNOSTIC PROCEDURE to you by Eris Studios

### 1. Basic Diagnostic Procedure

#### A: PROCEDURE

#### 1. ENGINE

	Step	Check	Yes	No
1	CHECK ENGINE START FAILURE. 1)Ask the customer when and how trouble occurred using the interview check list. <ref. to EN(STi)-3, CHECK, Check List for Inter- view.&gt; 2)Start the engine.</ref. 	Does the engine start?	Go to step <b>2</b> .	Inspection using "Diagnostics for Engine Start Fail- ure". <ref. to<br="">EN(STi)-54, Diag- nostics for Engine Starting Failure.&gt;</ref.>
2	CHECK ILLUMINATION OF MALFUNCTION INDICATOR LIGHT.	Does the malfunction indicator light illuminate?		Inspection using "General Diagnos- tics Table". <ref. to EN(STi)-359, General Diagnos- tic Table.&gt;</ref. 
3	CHECK INDICATION OF DTC ON DISPLAY. 1)Turn the ignition switch to OFF. 2)Connect the Subaru Select Monitor or OBD- II general scan tool to data link connector. 3)Turn the ignition switch to ON and the Sub- aru Select Monitor or OBD-II general scan tool switch to ON. 4)Read the DTC on Subaru Select Monitor or OBD-II general scan tool.	Does the Subaru Select Moni- tor or OBD-II general scan tool indicate DTC?	Record the DTC code. Repair the trouble cause. <ref. en(sti)-<br="" to="">66, List of Diag- nostic Trouble Code (DTC).&gt; Go to step <b>4</b>.</ref.>	Repair the related parts. NOTE: If a DTC is not shown on display although malfunc- tion indicator light illuminates, per- form diagnostics of malfunction indica- tor light circuit or combination meter. <ref. to<br="">EN(STi)-45, Mal- function Indicator Light.&gt;</ref.>
4	PERFORM THE DIAGNOSIS. 1)Perform the clear memory mode. <ref. to<br="">EN(STi)-42, Clear Memory Mode.&gt; 2)Perform the inspection mode. <ref. to<br="">EN(STi)-35, Inspection Mode.&gt;</ref.></ref.>	Does the Subaru Select Moni- tor or OBD-II general scan tool indicate DTC?	Inspect using "Diagnostics Pro- cedure with Diag- nostic Trouble Code (DTC)". <ref. en(sti)-<br="" to="">73, Diagnostic Procedure with Diagnostic Trou- ble Code (DTC).&gt;</ref.>	Complete the diagnosis.

ENGINE (DIAGNOSTICS)

### 2. Check List for Interview

#### A: CHECK

#### 1. CHECK LIST NO. 1

Check the following items when problem has occurred.

#### NOTE:

Use copies of this page for interviewing customers.

Customer's name		Engine No.	
Date of sale		Fuel brand	
Date of repair		Odometer reading	km
VIN			miles
Weather	<ul> <li>Fine</li> <li>Cloudy</li> <li>Rainy</li> <li>Snowy</li> <li>Various/Others:</li> </ul>		
Outdoor temperature	°C (°	F)	
	☐ Hot ☐ Warm ☐ Cool ☐ Cold		
Place	<ul> <li>Highway</li> <li>Suburbs</li> <li>Inner city</li> <li>Uphill</li> <li>Downhill</li> <li>Rough road</li> <li>Others:</li> </ul>		
Engine temperature	<ul> <li>Cold</li> <li>Warming-up</li> <li>After warming-up</li> <li>Any temperature</li> <li>Others:</li> </ul>		
Engine speed	rp	m	
Vehicle speed	MF	ΫΗ	
Driving conditions	<ul> <li>Not affected</li> <li>At starting</li> <li>While idling</li> <li>At racing</li> <li>While accelerating</li> <li>While cruising</li> <li>While decelerating</li> <li>While turning (RH/LH)</li> </ul>		
Headlight		Rear defogger	
Blower		Radio	
A/C compressor		CD/Cassette	ON/D OFF
Cooling fan		Car phone	ON/D OFF
Front wiper		CB	
Rear wiper			

CHECK LIST FOR INTERVIEW

2. CHECK LIST NO. 2
 Check the following items about the vehicle's state when malfunction indicator light turns on.

NOTE:

Use copies of this page for interviewing customers.

a) Other warning lights or indicators turn on.  Yes/ No
Low fuel warning light
AT diagnostics indicator light
BABS warning light
Engine oil pressure warning light
b) Fuel level
<ul> <li>Lack of gasoline: □ Yes/□ No</li> </ul>
Indicator position of fuel gauge:
<ul> <li>Had run out of gas before: □ Yes/□ No</li> </ul>
c) Intentional connecting or disconnecting of harness connectors or spark plug cords:  Yes/ No
What:
d) Intentional connecting or disconnecting of hoses:
What:
e) Installing of parts other than genuine parts: 🗅 Yes/🗅 No
What:
Where:
f) Occurrence of noise:  Yes/ No
From where:
What kind:
g) Occurrence of smell: □ Yes/□ No
From where:
What kind:
h) Intrusion of water into engine compartment or passenger compartment: 🖵 Yes/🗆 No
i) Troubles occurred
Engine does not start.
Engine stalls during idling.
Engine stalls while driving.
Engine speed decreases.
Engine speed does not decrease.
□ No shift
Excessive shift shock

#### 3. General Description

#### A: CAUTION

1) Airbag system wiring harness is routed near the ECM, main relay and fuel pump relay.

#### CAUTION:

 All airbag system wiring harness and connectors are colored yellow. Do not use the electrical test equipment on these circuit.

 Be careful not to damage the airbag system wiring harness when servicing the ECM, TCM, main relay and fuel pump relay.

2) Never connect the battery in reverse polarity.

The ECM will be destroyed instantly.

 The fuel injector and other part will be damaged in just a few minutes more.

3) Do not disconnect the battery cables while the engine is running.

 A large counter electromotive force will be generated in the alternator, and this voltage may damage electronic parts such as ECM, etc.

4) Before disconnecting the connectors of each sensor and the ECM, be sure to turn the ignition switch to OFF.

5) Poor contact has been identified as a primary cause of this problem. To measure the voltage and/ or resistance of individual sensors or all electrical control modules at the harness side connector, use a tapered pin with a diameter of less than 0.64 mm (0.025 in). Do not insert the pin more than 5 mm (0.20 in) into the part.

6) Before removing the ECM from located position, disconnect two cables on battery.

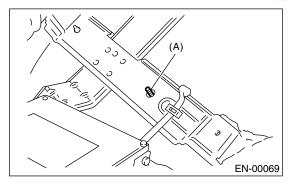
• Otherwise, the ECM may be damaged.

#### CAUTION:

#### When replacing the ECM, be careful not to use the wrong spec. ECM to avoid any damage on the fuel injection system.

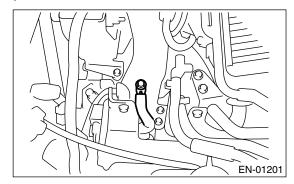
7) The connectors to each sensor in the engine compartment and the harness connectors on the engine side and body side are all designed to be waterproof. However, it is still necessary to take care not to allow water to get into the connectors when washing the vehicle, or when servicing the vehicle on a rainy day.

8) Use the ECM mounting stud bolt at the body head grounding points when measuring voltage and resistance inside the passenger compartment.



(A) Stud bolt

9) Use the engine grounding terminal or engine proper as the grounding point to the body, when measuring voltage and resistance in the engine compartment.



10) Every MFI-related part is a precision part. Do not drop them.

11) Observe the following cautions when installing a radio in MFI equipped models.

#### CAUTION:

 The antenna must be kept as far apart as possible from the control unit.

(The ECM is located under the steering column, inside of the instrument panel lower trim panel.)

 The antenna feeder must be placed as far as possible from ECM and MFI harness.

· Carefully adjust the antenna for correct matching.

 When mounting a large power type radio, pay special attention to the three items above mentioned.

 Incorrect installation of the radio may affect the operation of ECM.

12) Before disconnecting the fuel hose, disconnect the fuel pump connector and crank the engine for more than 5 seconds to release pressure in the fuel system. If the engine starts during this operation, run it until it stops.

### Bro GENERAL DESCRIPTION

#### ENGINE (DIAGNOSTICS)

13) Diagnostics should be conducted by rotating with simple, easy operations and proceeding to complicated, difficult operations. The most important thing in diagnostics is to understand the customer's complaint, and distinguish between the three causes.

14) On model with ABS, when performing driving test in jacked-up or lifted-up position, sometimes the warning light may be lit, but this is not a malfunction of the system. The reason for this is the speed difference between front and rear wheels. After diagnosis of engine control system, perform the ABS memory clearance procedure of self-diagnosis system.

#### **B: INSPECTION**

Before performing diagnostics, check the following items which might affect engine problems:

#### 1. BATTERY

1) Measure the battery voltage and specific gravity of electrolyte.

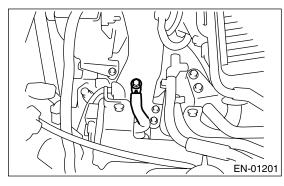
#### Standard voltage: 12 V

#### Specific gravity: Above 1.260

2) Check the condition of main and other fuses, and harnesses and connectors. Also check for proper grounding.

#### 2. ENGINE GROUNDING

Make sure the engine grounding terminal is properly connected to engine.



#### C: NOTE

#### 1. DESCRIPTION

OR RESALE The on-board diagnostics (OBD) system detects and indicates a fault in various inputs and outputs of complex electronic control. Malfunction indicator light in combination meter indicates occurrence of a fault or trouble.

 Further, against such a failure or sensors as may disable the drive, the fail-safe function is provided to ensure the minimal driveability.

 The OBD system incorporated with the vehicles within this engine family complies with Section 1968.1, California Code of Regulations (OBD-II regulation). The OBD system monitors the components and the system malfunction listed in Engine Section which affects on emissions.

 When the system decides that a malfunction occurs, malfunction indicator light illuminates. At the same time of malfunction indicator light illumination or blinking, a DTC and a freeze frame engine conditions are stored into on-board computer.

 The OBD system stores freeze frame engine condition data (engine load, engine coolant temperature, fuel trim, engine speed and vehicle speed, etc.) into on-board computer when it detects a malfunction first.

 If the OBD system detects the various malfunctions including the fault of fuel trim or misfire, the OBD system first stores freeze frame engine conditions about the fuel trim or misfire.

· When the malfunction does not occur again for three consecutive driving cycles, malfunction indicator light is turned off, but DTC remains at onboard computer.

 The OBD-II system is capable of communication with a general scan tool (OBD-II general scan tool) formed by ISO 9141 CARB.

 The OBD-II diagnostics procedure is different from usual diagnostics procedure. When troubleshooting model with OBD-II, connect the Subaru Select Monitor or the OBD-II general scan tool to the vehicle.

#### 2. ENGINE AND EMISSION CONTROL SYS-TEM

• The Multipoint Fuel Injection (MFI) system is a system that supplies the optimum air-fuel mixture to the engine for all the various operating conditions through the use of the latest electronic technology.

With this system fuel, which is pressurized at a constant pressure, is injected into the intake air passage of the cylinder head. The injection quantity of fuel is controlled by an intermittent injection system where the electro-magnetic injection valve (fuel injector) opens only for a short period of time, depending on the quantity of air required for one cycle of operation. In actual operation, the injection quantity is determined by the duration of an electric

#### D: PREPARATION TOOL

pulse applied to the fuel injector and this permits simple, yet highly precise metering of the fuel.

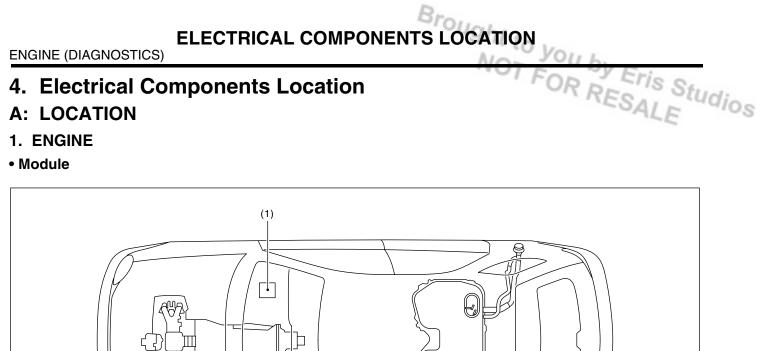
Idios • Further, all the operating conditions of the engine are converted into electric signals, and this results in additional features of the system, such as large improved adaptability, easier addition of compensating element, etc.

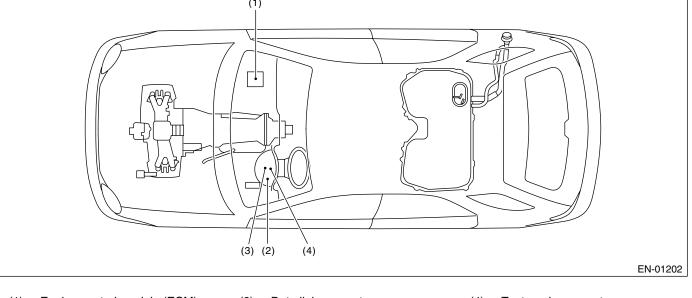
The MFI system also has the following features:

- Reduced emission of harmful exhaust gases.
- Reduced in fuel consumption.
- Increased engine output.
- Superior acceleration and deceleration.

· Superior startability and warm-up performance in cold weather since compensation is made for coolant and intake air temperature.

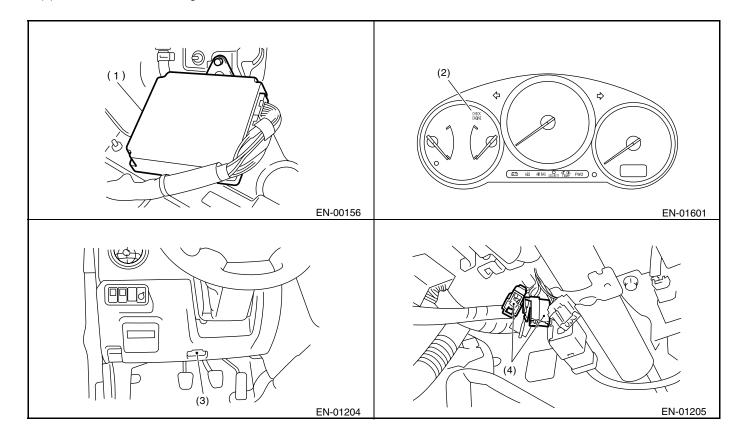
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
ST24082AA230	24082AA230	CARTRIDGE	Troubleshooting for electrical systems.
ST22771AA030	22771AA030	SUBARU SELECT MONITOR KIT	Troubleshooting for electrical systems.

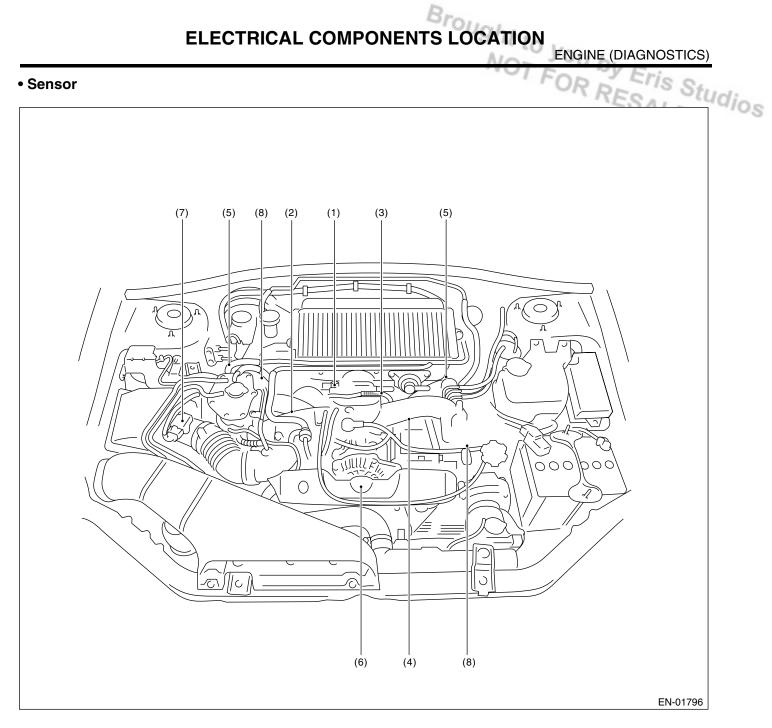




- (1) Engine control module (ECM)
- (3) Data link connector
- (4) Test mode connector

(2) Malfunction indicator light



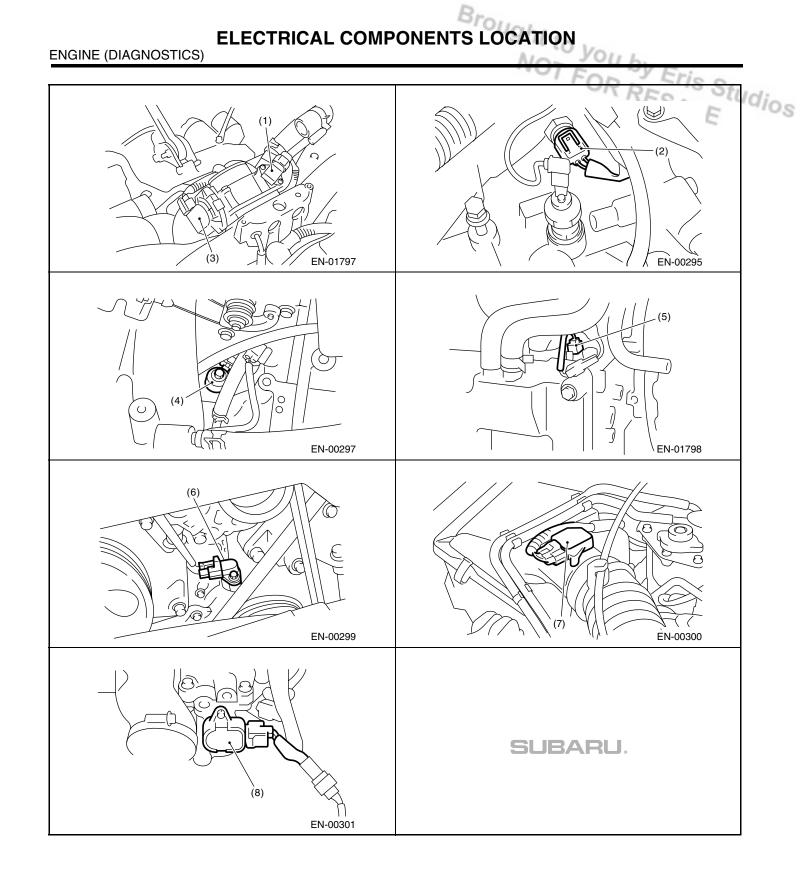


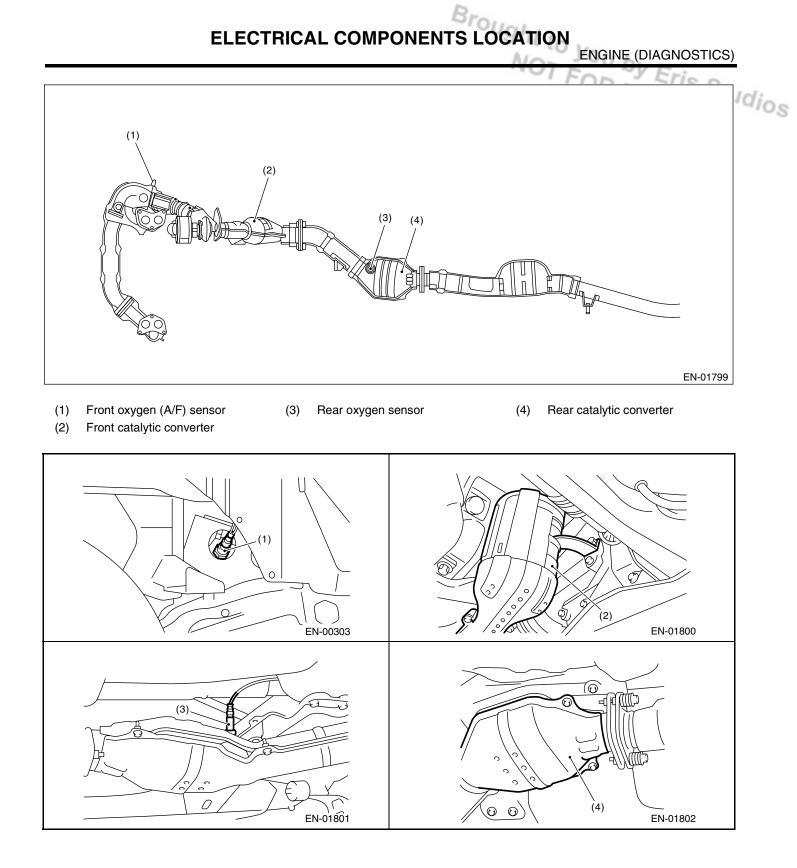
- (1) Manifold absolute pressure sensor
- (5) Camshaft position sensor Crankshaft position sensor
- Engine coolant temperature sen-(6) (7)
- Electric throttle (3)
- (4) Knock sensor

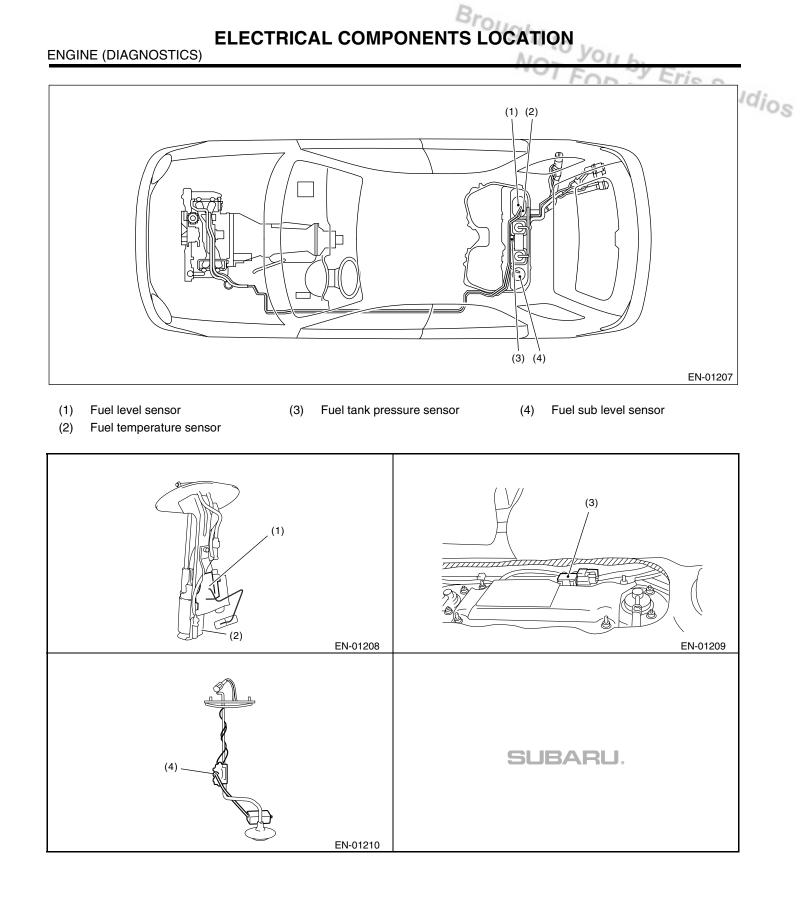
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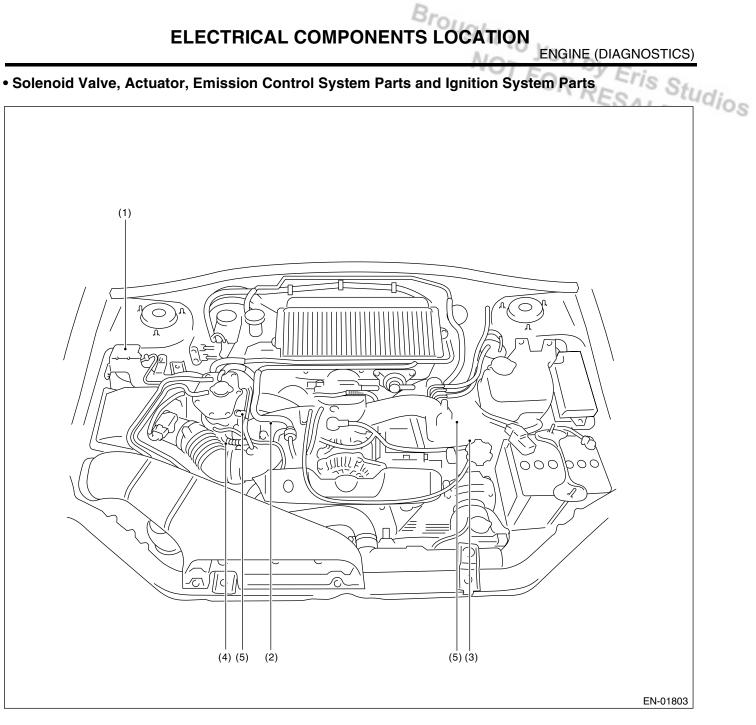
(2)

- Mass air flow and intake air temperature sensor
- (8) Tumble generator valve position sensor







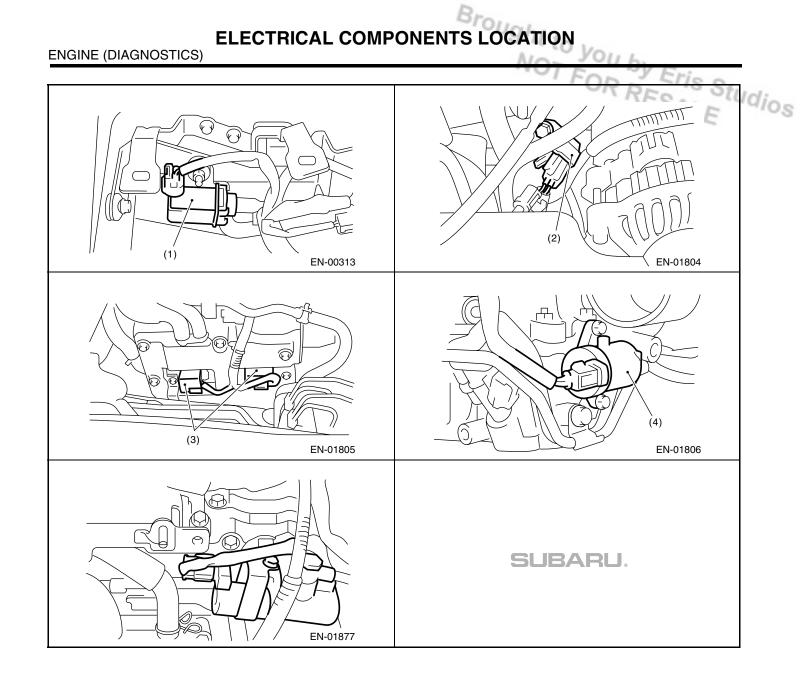


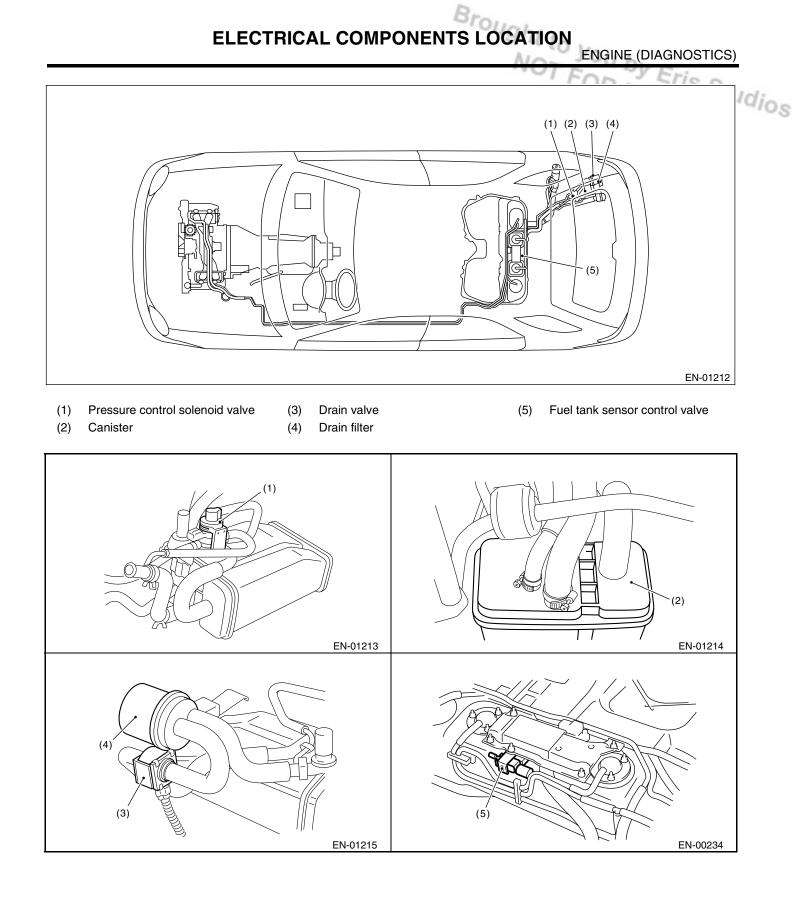
- (1) Wastegate control solenoid valve
- (3) Ignition coil

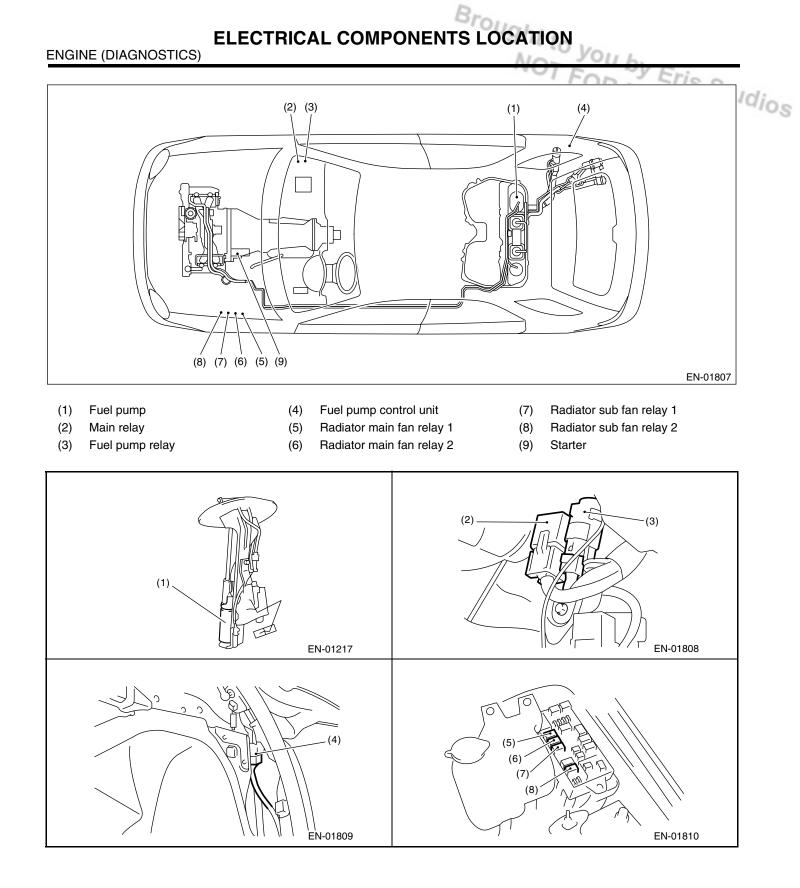
(4)

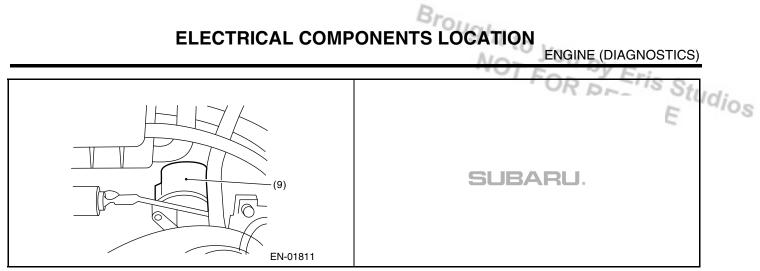
- Ignition coll Tumble generator valve actuator
- (5) Variable valve timing solenoid valve

(2) Purge control solenoid valve



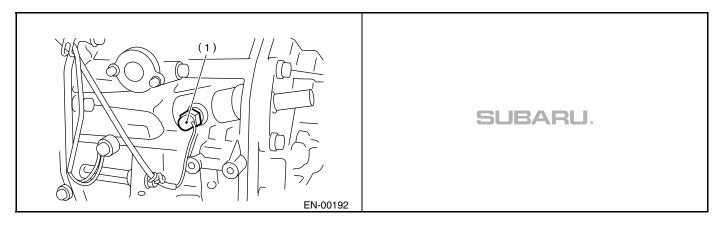






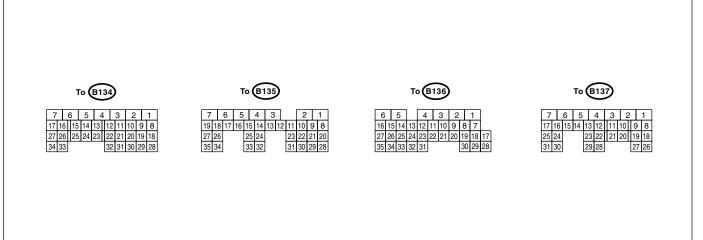
#### 2. TRANSMISSION

Solenoid Valve and Switch



(1) Neutral position switch

## ENGINE CONTROL MODULE (ECM) I/O SIGNAL ENGINE (DIAGNOSTICS) 5. Engine Control Module (ECM) I/O Signal A: ELECTRICAL SPECIFICATION



EN-01812

		Con-	Termi-	Sign		
Content		nector No.	nal No.	Ignition SW ON (Engine OFF)	Engine ON (Idling)	Note
Crank-	Signal (+)	B135	10	0	-7 +7	Sensor output waveform
shaft posi-	Signal (–)	B135	22	0	0	—
tion sensor	Shield	B135	31	0	0	—
D	Signal	B137	25	0	0 — 0.9	—
Rear oxy- gen sen-	Shield	B137	31	0	0	—
sor	GND (sen- sor)	B136	35	0	0	—
Front oxy-	Signal 1	B134	3	0 — 1.0	—	Sensor output waveform
gen (A/F) sensor heater	Signal 2	B134	2	0 — 1.0	_	Sensor output waveform
Rear oxyger heater signa		B135	2	0 — 1.0	_	Sensor output waveform
Engine	Signal	B136	14	1.0 — 1.4	1.0 — 1.4	After warm-up the engine.
coolant tempera- ture sen- sor	GND (sen- sor)	B136	35	0	0	After warm-up the engine.
Vehicle spe	ed signal	B135	27	0 or 5	0 or 5	"5" and "0" are repeatedly dis- played when vehicle is driven.
Mass air	Signal	B136	23	_	0.3 — 4.5	—
flow sen-	Shield	B136	32	0	0	—
sor	GND	B136	31	0	0	—
Intake air te sensor sign	•	B136	13	0.3 — 4.6	0.3 — 4.6	_

# ENGINE CONTROL MODULE (ECM) I/O SIGNAL ENGINE (DIAGNOSTICS)

						For "y Eri	
		Con-	Termi-	Signa	al (V)	OR REG Sti	Id.
Con	itent	nector No.	nal No.	Ignition SW ON (Engine OFF)	Engine ON (Idling)	Note ALE	1910s
Tumble Signal		B136	27	Fully closed: 3.8 — 4.9 Fully opened: 0.2 — 0.9		—	
generator valve posi- tion sensor	Power supply	B136	16	5	5	_	
RH	GND (sensor)	B136	35	0	0	_	
Tumble	Signal	B136	26	Fully closed Fully opened		—	
generator valve posi- tion sensor	Power supply	B136	16	5	5	_	
LH	GND (sensor)	B136	35	0	0	_	
Tumble gen RH (open)	erator valve	B134	9	0 or 10 — 13	0 or 13 — 14	Sensor output waveform	
Tumble gen RH (close)	erator valve	B134	8	0 or 10 — 13	0 or 13 — 14	Sensor output waveform	
Tumble gen LH (open)		B134	11	0 or 10 — 13	0 or 13 — 14	Sensor output waveform	
Tumble gen LH (close)	erator valve	B134	10	0 or 10 — 13	0 or 13 — 14	Sensor output waveform	
Wastegate on noid valve	control sole-	B134	32	0 or 10 — 13	0 or 13 — 14	Sensor output waveform	
Starter swite	ch	B137	8	0	0	Cranking: 8 — 14	
A/C switch		B137	16	ON: 10 — 13 OFF: 0	ON: 13 — 14 OFF: 0	_	
Ignition swite	ch	B137	15	10 — 13	13 — 14		
Neutral posi	tion switch	B137	9	ON: 10 — 13 OFF: 0	ON: 13 — 14 OFF: 0	—	
Test mode of	connector	B137	14	5	5	When connected: 0	
Knock	Signal	B136	25	2.8	2.8	—	
sensor	Shield	B136	33	0	0	—	
Back-up pov	wer supply	B135	19	10 — 13	13 — 14	Ignition switch "OFF": 10 - 13	
Control unit	power sup-	B135	5	10 — 13	13 — 14	—	
ply		B135	6	10 — 13	13 — 14	—	
Sensor pow	er supply	B136	16	5	5	—	
	#1	B135	18	0	13 — 14	Waveform	
Ignition	#2	B135	17	0	13 — 14	Waveform	
control	#3	B135	16	0	13 — 14	Waveform	
	#4	B135	16	0	13 — 14	Waveform	
	#1	B136	6	10 — 13	1 — 14	Waveform	
Fuel injec-	#2	B136	5	10 — 13	1 — 14	Waveform	
tor	#3	B136	4	10 — 13	1 — 14	Waveform	
	#4	B136	3	10 — 13	1 — 14	Waveform	
Fuel pump	Signal 1	B135	26	0 or 5	0 or 5	Sensor output waveform	
control unit	Signal 2	B137	28	10 — 13	13 — 14	—	ĺ
A/C relay co	ontrol	B133	33	ON: 0.5 or less OFF: 10 — 13	ON: 0.5 or less OFF: 13 — 14	—	
Radiator fan control	n relay 1	B135	25	ON: 0.5 or less OFF: 10 — 13	ON: 0.5 or less OFF: 13 — 14	-	
Radiator fan control	relay 2	B135	24	ON: 0.5 or less OFF: 10 — 13	ON: 0.5 or less OFF: 13 — 14	Model with A/C only	

## ENGINE CONTROL MODULE (ECM) I/O SIGNAL VOILL

		<u> </u>	 T			FOD Eris e.
Col	ntant	Con- nector	Termi-	Signa Ignition SW ON		Note
Content Malfunction indicator		No.	nal No.	(Engine OFF)	Engine ON (Idling)	
Malfunction indicator lamp		B134	17	—	—	Light "ON": 1 or less Light "OFF": 10 — 14
Engine spe	ed output	B134	23	—	0 — 13 or more	Waveform
Purge contr valve	ol solenoid	B134	14	ON: 1 or less OFF: 10 — 13	ON: 1 or less OFF: 13 — 14	Sensor output waveform
	Signal	B136	22	1.7 — 2.4	1.1 — 1.6	
Manifold absolute	Power supply	B136	16	5	5	_
pressure sensor	GND (sen- sor)	B136	35	0	0	
Fuel tank pressure	Signal	B136	21	2.3 — 2.7	2.3 — 2.7	The valve operates when fuel filler cap is removed and rein- stalled.
sensor	GND (sen- sor)	B136	35	0	0	_
Fuel tank pi trol solenoid	ressure con- d valve	B134	12	ON: 1 or less OFF: 10 — 13	ON: 1 or less OFF: 13 — 14	_
Drain valve		B134	13	ON: 1 or less OFF: 10 — 13	ON: 1 or less OFF: 13 — 14	_
Fuel tank se valve	ensor control	B134	24	ON: 1 or less OFF: 10 — 13	ON: 1 or less OFF: 13 — 14	_
Fuel level s	ensor	B136	20	0.12 — 4.75	0.12 — 4.75	—
Fuel tempe sor signal	rature sen-	B136	12	2.5 — 3.8	2.5 — 3.8	Ambient temperature: 25°C (75°F)
Blow-by lea signal	ık diagnosis	B137	24	0	0	When disconnection (malfunction): 5
Small light s	switch	B137	12	ON: 0 OFF: 10 — 13	ON: 0 OFF: 13 — 14	_
Blower fan	switch	B137	13	ON: 0 OFF: 10 — 13	ON: 0 OFF: 13 — 14	_
Rear defog	-	B137	11	ON: 0 OFF: 10 — 13	ON: 0 OFF: 13 — 14	_
Power stee sure switch	ring oil pres-	B137	10	10 — 13	ON: 0 OFF: 13 — 14	_
sor signal (-		B134	33	2.8 — 3.2	2.8 — 3.2	_
sor signal (-		B134	26	2.4 — 2.7	2.4 — 2.7	_
sor shield	en (A/F) sen-	B134	25	0	0	_
tion line	communica-	B137	20	Less than $1 \leftrightarrow \rightarrow$ More than $4$	Less than 1 $\leftarrow \rightarrow$ More than 4	_
GND (inject		B137	7	0	0	
GND (ignitio	on system)	B135	12	0	0	—
GND (powe	r supply)	B135	4	0	0	
	i supply)	B135	1	0	0	
GND (contr	ol systems)	B137	1	0	0	
	or systems)	B137	2	0	0	
GND (front F) sensor h	eater 1)	B134	7	0	0	_
GND (front F) sensor h	oxygen (A/ eater 2)	B134	6	0	0	—

# ENGINE CONTROL MODULE (ECM) I/O SIGNAL ENGINE (DIAGNOSTICS)

			1			Eon Y Eria	
Content Camshaft position sen-		Con- Term		1	al (V)	OR REG Sti	Id:
		nector No.	nal No.	Ignition SW ON (Engine OFF)	Engine ON (Idling)	Note ALE	I'VIOS
Camshaft p sor (LH)	osition sen-	B135	8	0 — 0.9	ON: 0 OFF: 4.7 — 5.3	Sensor output waveform	
Camshaft p sor (RH)	osition sen-	B135	9	0 — 0.9	ON: 0 OFF: 4.7 — 5.3	Sensor output waveform	
	Main	B136	18	0.64 — 0.72 Fully opened: 3.96	0.64 — 0.72 (After engine warm-up)	Fully closed: 0.6 Fully opened: 3.96	
Electric	Sub	B136	29	1.51 — 1.58 Fully opened: 4.17	1.51 — 1.58 (After engine warm-up)	Fully closed: 1.48 Fully opened: 4.17	
throttle	Power supply	B136	16	5	5	—	
	GND (sen- sor)	B137	3	0	0	_	
Electric thro (+)		B137	5	Duty waveform	Duty waveform	Driving frequeney: 500Hz	
Electric thro		B137	4	Duty waveform	Duty waveform	Driving frequeney: 500Hz	
Electric thro power supp	у	B137	6	10 — 13	13 — 14	_	
Electric thro relay	ttle motor	B135	35	ON: 0 OFF: 10 — 13	ON: 0 OFF: 13 — 14	When ignition switch is ON: ON	
Variable valve tim-	Signal (+)	B134	19	ON: 10 — 13 OFF: 0	ON: 13 — 14 OFF: 0	_	
ing sole- noid valve (LH)	Signal (–)	B134	29	0	0	—	
Variable valve tim-	Signal (+)	B134	18	ON: 10 — 13 OFF: 0	ON: 13 — 14 OFF: 0	—	
ing sole- noid valve (RH)	Signal (–)	B134	28	0	0	_	
	Main	B136	17	Fully closed: 1 Fully opened: 3.5	Fully closed: 1 Fully opened: 3.5	_	
Accelera- tor position	Power supply	B136	15	5	5	—	
sensor	GND (sen- sor)	B136	34	0	0	—	
	Sub	B136	28	Fully closed: 1 Fully opened: 3.5	Fully closed: 1 Fully opened: 3.5		
Cruise control set light		B134	16	ON: 0 OFF: 10 — 13	ON: 0 OFF: 13 — 14	_	
Main light		B134	15	ON: 0 OFF: 10 — 13	ON: 0 OFF: 13 — 14	_	
Clutch switch		B134	1	When clutch pedal is depressed: 0 When clutch pedal is released: 10 — 13	When clutch pedal is depressed: 0 When clutch pedal is released: 13 — 14	_	
SET/COAS	r switch	B136	11	ON: 10 — 13 OFF: 0	ON: 13 — 14 OFF: 0	_	
Brake switc	n 1	B136	9	When brake pedal is depressed: 0 When brake pedal is released: 10 — 13	When brake pedal is depressed: 0 When brake pedal is released: 13 — 14	_	

## ENGINE CONTROL MODULE (ECM) I/O SIGNAL YOUL

	Con-	Tamai	Signal (V)		FOR DEFIS Stud	
Content	nector No.	Termi- nal No.	Ignition SW ON (Engine OFF)	Engine ON (Idling)	Note ALE	Idios
Brake switch 2	B136	8	When brake pedal is depressed: 10 — 13 When brake pedal is released: 0	When brake pedal is depressed: 13 — 14 When brake pedal is released: 0	—	
RESUME/ACCEL switch	B136	10	ON: 10 — 13 OFF: 0	ON: 13 — 14 OFF: 0	—	
Main switch	B136	7	ON: 10 — 13 OFF: 0	ON: 13 — 14 OFF: 0	—	

# ENGINE CONDITION DATA ENGINE (DIAGNOSTICS)

#### 6. Engine Condition Data **A: ELECTRICAL SPECIFICATION**

	ENGINE CO	NDITION DATA ENGINE (DIAGNOSTICS)
6. Engine Cond A: ELECTRICAL S		FOR RESALE
Content		Specified data
Engine lood		1.2 — 2.9 (%): Idling
Engine load		4.7 — 12.8 (%): 2,500 rpm racing

Measuring condition:

- After warm-up the engine.
- Gear position is in neutral position.
- A/C is turned to OFF.
- All accessory switches are turned to OFF.

DATA LINK CONNECTOR<sup>ght</sup> to you by Eris Studios

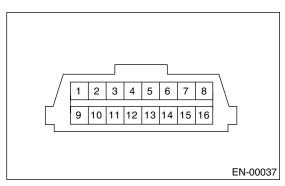
#### 7. Data Link Connector

#### A: NOTE

This connector is used both for the OBD-II general scan tools and Subaru Select Monitor.

#### **CAUTION:**

Do not connect any scan tools other than the OBD-II general scan tools and Subaru Select Monitor, because the circuit for Subaru Select Monitor may be damaged.



Terminal No.	Contents	Terminal No.	Contents
1	Power supply	9	Blank
2	Blank	10	Subaru Select Monitor/OBD-II general scan tool signal
3	Blank	11	Blank
4	Blank	12	Ground
5	Blank	13	Ground
6	Line end check signal 1	14	Blank
7	Blank	15	Blank
8	Line end check signal 2	16	Blank

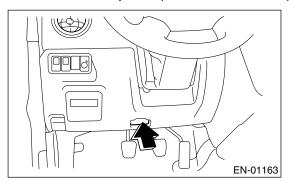
### 8. OBD-II General Scan Tool

#### A: OPERATION

#### 1. HOW TO USE OBD-II GENERAL SCAN TOOL

1) Prepare a general scan tool (OBD-II general scan tool) required by SAE J1978.

2) Open the cover and connect the OBD-II general scan tool to data link connector located in the lower portion of instrument panel (on the driver's side).



3) Using the OBD-II general scan tool, call up DTC

OBD-II general scan tool functions consist of:

(1) MODE \$01: Current powertrain diagnostic data

(2) MODE \$02: Powertrain freeze frame data (3) MODE \$03: Emission-related powertrain

DTC

(4) MODE \$04: Clear/Reset emission-related diagnostic information

(5) MODE \$06: Request on-board monitoring test results for non-continuously monitored systems

(6) MODE \$07: Request on-board monitoring test results for continuously monitored systems (7) MODE \$09: Request vehicle information

Read out the data according to repair procedures. (For detailed operation procedures, refer to the OBD-II General Scan Tool Operation Manual.)

#### NOTE:

For details concerning DTC, refer to the List of Diagnostic Trouble Code (DTC). < Ref. to EN(STi)-66, List of Diagnostic Trouble Code (DTC).>

#### 2. MODE \$01 (CURRENT POWERTRAIN DIAGNOSTIC DATA)

Refers to data denoting the current operating condition of analog input/output, digital input/output and/or the powertrain system.

A list of the support data and PID (Parameter Identification) codes are shown in the following table.

PID	Data	Unit of measure
01	Number of emission-related powertrain DTC and malfunction indicator light status and diag- nosis support information	—
03	Fuel system control status	—
04	Calculated engine load value	%
05	Engine coolant temperature	°C
06	Short term fuel trim	%
07	Long term fuel trim	%
0B	Intake manifold absolute pressure	kPa
0C	Engine revolution	rpm
0D	Vehicle speed	km/h
0E	Ignition timing advance	0
0F	Intake air temperature	°C
10	Air flow rate from mass air flow sensor	g/sec
11	Throttle valve absolute opening angle	%
13	Check whether oxygen sensor is installed.	—
15	Oxygen sensor output voltage and short term fuel trim associated with oxygen sensor	V and %
1C	Supporting OBD system	—
24	A/F value and A/F sensor output voltage	— and V
34	A/F value and A/F sensor current	— and mA

NOTE:

Refer to OBD-II general scan tool manufacturer's instruction manual to access generic OBD-II PIDs (MODE \$01).

#### 3. MODE \$02 (POWERTRAIN FREEZE FRAME DATA)

Eris Studios Refers to data denoting the operating condition when trouble is sensed by the on-board diagnosis system. A list of the support data and PID (Parameter Identification) codes are shown in the following table.

PID	Data	Unit of measure
02	DTC that caused CARB required freeze frame data storage	—
03	Fuel system control status	—
04	Calculated engine load value	%
05	Engine coolant temperature	°C
06	Short term fuel trim	%
07	Long term fuel trim	%
0B	Intake manifold absolute pressure	mmHg
0C	Engine revolution	rpm
0D	Vehicle speed	km/h
0E	Ignition timing advance	0
0F	Intake air temperature	°C
10	Air flow rate from mass air flow sensor	g/sec
11	Throttle valve opening angle	%
15	O <sub>2</sub> sensor output voltage and O <sub>2</sub> sensor short term fuel trim	V and %

#### NOTE:

Refer to OBD-II general scan tool manufacturer's instruction manual to access freeze frame data (MODE \$02).

#### 4. MODE \$03 (EMISSION-RELATED POWERTRAIN DIAGNOSTIC TROUBLE CODE (DTC))

Refer to Read Diagnostic Trouble Code (DTC) for information about data denoting emission-related powertrain DTC. <Ref. to EN(STi)-34, Read Diagnostic Trouble Code (DTC).>

#### 5. MODE \$04 (CLEAR/RESET EMISSION-RELATED DIAGNOSTIC INFORMATION)

Refers to the mode used to clear or reset emission-related diagnostic information (OBD-II trouble diagnostic information).

#### NOTE:

Refer to OBD-II general scan tool manufacturer's instruction manual to clear or reset emission-related diagnostic information (MODE \$04).

#### 6. MODE \$06

Refer to test value of troubleshooting and data of test limit on support data bit sequence table. List of support data is shown in the following table.

TID	CID	Test value & Test limit	
\$01	\$01	Catalyst system efficiency below threshold	
	\$01	Evaporative emission control system large leak	
\$03	\$02	Evaporative emission control system small leak	
	\$03	Evaporative emission control system very small leak	
\$05	\$01	O <sub>2</sub> sensor circuit slow response (Bank 1 Sensor 1)	
\$06	\$01	O <sub>2</sub> sensor circuit (Bank 1 Sensor 2)	
<b>\$</b> 00	\$02		
\$07	\$01	O <sub>2</sub> sensor circuit slow response (Bank 1 Sensor 2)	
\$0C	\$01	Coolant thermostat (Coolant temperature below thermostat regulating temperature)	
\$0F	\$01		
φυΓ	\$02	Drain valve range/performance	

#### 7. MODE \$07

Refer to data of DTC (pending code) for troubleshooting result about emission in first time.

# OBD-II GENERAL SCAN TOOL ENGINE (DIAGNOSTICS)

ENGINE (DIAGNOSTICS)

#### 8. MODE \$09

Refer to data of vehicle specification (VIN, calibration ID, etc.).

#### 9. Subaru Select Monitor

#### A: OPERATION

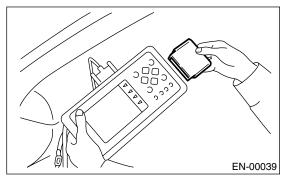
#### 1. HOW TO USE SUBARU SELECT MONI-TOR

1) Prepare the Subaru Select Monitor kit. <Ref. to EN(STi)-7, PREPARATION TOOL, General Description.>



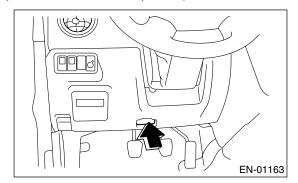
2) Connect the diagnosis cable to Subaru Select Monitor.

3) Insert the cartridge into Subaru Select Monitor. <Ref. to EN(STi)-7, PREPARATION TOOL, General Description.>



4) Connect the Subaru Select Monitor to data link connector.

(1) Data link connector is located in the lower portion of instrument panel (on the driver's side).

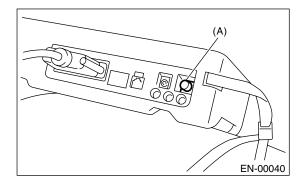


(2) Connect the diagnosis cable to data link connector.

#### CAUTION:

#### Do not connect the scan tools except for Subaru Select Monitor and OBD-II general scan tool.

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



(A) Power switch

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

#### 2. READ DIAGNOSTIC TROUBLE CODE (DTC) FOR ENGINE. (NORMAL MODE)

Refer to Read Diagnostic Trouble Code (DTC) for information about how to indicate DTC. <Ref. to EN(STi)-34, Read Diagnostic Trouble Code (DTC).>

#### 3. READ DIAGNOSTIC TROUBLE CODE (DTC) FOR ENGINE. (OBD MODE)

Refer to Read Diagnostic Trouble Code (DTC) for information about how to indicate DTC. <Ref. to EN(STi)-34, Read Diagnostic Trouble Code (DTC).>

## 4. READ CURRENT DATA FOR ENGINE. (NORMAL MODE)

1) On the «Main Menu» display screen, select the {Each System Check} and press the [YES] key.

2) On the «System Selection Menu» display screen, select the {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 {Current Data Display & Save} and press the [YES] key.

5) On the «Data Display Menu» display screen, select the {Data Display} and press the [YES] key.

## SUBARU SELECT MONITOR ENGINE (DIAGNOSTICS)

ENGINE (DIAGNOSTICS)

6) Using the scroll key, move the display screen up

or down until desired data is shown.

• A list of the support data is shown in the following table.

Contents	Display	Unit of measure
Battery voltage	Battery Voltage	V
Vehicle speed signal	Vehicle Speed	km/h or MPH
Engine speed signal	Engine Speed	rpm
Engine coolant temperature signal	Coolant Temp.	°C or °F
Ignition timing signal	Ignition Timing	deg
Throttle position signal	Throttle Opening Angle	%
Injection pulse width	Fuel Injection #1 Pulse	ms
Fuel pump duty control signal	Fuel Pump Duty	%
A/F sensor current	A/F Sensor #1 Current	mA
A/F sensor resistance	A/F Sensor #1 Resistance	ohm
Front oxygen (A/F) sensor lambda value	A/F Sensor #1	—
Rear oxygen sensor output signal	Rear O <sub>2</sub> Sensor	V
Short term fuel trim	A/F Correction #1	%
Knock sensor correction	Knocking Correction	deg
· · · · · · · · · · · · · · · · · · ·		mmHg or kPa or inHg or
Atmospheric absolute pressure signal	Atmosphere Pressure	psi
Intake manifold relative pressure signal	Mani. Relative Pressure	mmHg or kPa or inHg or psi
Intake manifold absolute pressure signal	Mani. Absolute Pressure	mmHg or kPa or inHg or psi
A/F correction (short term fuel trim) by rear oxygen sensor	A/F Correction #3	%
Long term whole fuel trim	A/F Learning #1	%
Canister purge control solenoid valve duty ratio	CPC Valve Duty Ratio	%
Primary supercharged pressure control signal	Primary Control	%
Tumble generator valve position sensor signal (right side)	TGV Position Sensor R	V
Tumble generator valve position sensor signal (left side)	TGV Position Sensor L	V
Accelerator position	Accel.Opening Angle	%
VVT advanced timing (R)	VVTAdv.Amount R	deg
VVT advanced timing (L)	VVTAdv.Amount L	deg
OCV duty ratio (R)	OCV Duty R	%
OCV duty ratio (L)	OCV Duty L	%
OCV duty current (R)	OCV Current R	mA
OCV duty current (L)	OCV Current L	mA
Throttle motor duty	Throttle Motor Duty	%
Throttle power supply voltage	Throttle Motor Voltage	V
Sub-throttle sensor voltage	Sub-Throttle Sensor	V
Main-throttle sensor voltage	Main-Throttle Sensor	V
Sub-accelerator sensor voltage	Sub-Accelerator Sensor	V
Main-accelerator sensor voltage	Main-Accelerator Sensor	V
Memorized cruise speed	Memorized Cruise Speed	km/h
Roughness Monitor for #1 cylinder	Roughness Monitor #1	—
Roughness Monitor for #2 cylinder	Roughness Monitor #2	—
Roughness Monitor for #3 cylinder	Roughness Monitor #3	—
Roughness Monitor for #4 cylinder	Roughness Monitor #4	—
Fuel level signal	Fuel Level	V
Intake air temperature signal	Intake Air Temp.	°C or °F
Mass air flow sensor signal	Mass Air Flow	g/s
Mass air flow sensor signal	Air Flow Sensor Voltage	V

#### ENGINE (DIAGNOSTICS)

# SUBARU SELECT MONITOR

	1011	Son Y Fri-
Contents	Display	Unit of measure
Fuel tank pressure signal	Fuel Tank Pressure	mmHg or kPa or inHg or psi
Fuel temperature signal	Fuel Temp.	°C or °F
AT/MT identification signal	AT Vehicle ID Signal	ON or OFF
Fuel pressure control signal	PCV Solenoid Valve	ON or OFF
Drain valve signal	Vent. Solenoid Valve	ON or OFF
Tank sensor control solenoid valve signal	Tank Sensor Cntl Valve	ON or OFF
ETC Motor Relay	ETC Motor Relay	ON or OFF
Clutch SW	Clutch Switch	ON or OFF
Stop light SW	Stop Light Switch	ON or OFF
SET/COAST SW	SET/COAST Switch	ON or OFF
RESUME/ACCEL SW	RESUME/ACCEL Switch	ON or OFF
Brake SW	Brake Switch	ON or OFF
Main SW	Main Switch	ON or OFF
Ignition switch signal	Ignition Switch	ON or OFF
Test mode signal	Test Mode Signal	ON or OFF
Neutral position switch signal	Neutral Position Switch	ON or OFF
Air conditioning switch signal	A/C Switch	ON or OFF
Air conditioning signal	A/C Compressor Signal	ON or OFF
Radiator main fan relay signal	Radiator Fan Relay #1	ON or OFF
Blow-by leak diagnosis SW	Blow-by Leak Connector	ON or OFF
Knocking signal	Knocking Signal	ON or OFF
Radiator sub fan relay signal	Radiator Fan Relay #2	ON or OFF
Power steering switch signal	P/S Switch	ON or OFF
Rear oxygen sensor rich signal	Rear O <sub>2</sub> Rich Signal	ON or OFF
Starter switch signal	Starter Switch	ON or OFF
Idle switch signal	Idle Switch	ON or OFF
Crankshaft position sensor signal	Crankshaft Position Sig.	ON or OFF
Camshaft position sensor signal	Camshaft Position Sig.	ON or OFF
Rear defogger switch signal	Rear Defogger SW	ON or OFF
Blower fan switch signal	Blower Fan SW	ON or OFF
Small light switch signal	Light Switch	ON or OFF
Tumble generator valve output signal	TGV Output	ON or OFF
Tumble generator valve drive signal	TGV Drive	OPEN or CLOSE

NOTE:

For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MANUAL.

#### Bro SUBARU SELECT MONITOR

ENGINE (DIAGNOSTICS)

10

#### 5. READ CURRENT DATA FOR ENGINE. (OBD MODE)

Studios 1) On the «Main Menu» display screen, select the {Each System Check} and press the [YES] key.

2) On the «System Selection Menu» display screen, select the {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 {OBD System} and press the [YES] key.

5) On the «OBD Menu» display screen, select the {Current Data Display & Save} and press the [YES] key.

6) On the «Data Display Menu» display screen, select the {Data Display} and press the [YES] key.

7) Using the scroll key, move the display screen up or down until desired data is shown.

• A list of the support data is shown in the following table.

Contents	Display	Unit of measure
Number of DTC	Number of DTC	_
Malfunction indicator light status	MI (MIL)	ON or OFF
Monitoring test of misfire	Misfire monitoring	Complete or incomplete
Monitoring test of fuel system	Fuel system monitoring	Complete or incomplete
Monitoring test of comprehensive component	Component monitoring	Complete or incomplete
Test of catalyst	Catalyst Diagnosis	Complete or incomplete
Test of heated catalyst	Heated catalyst	No support
Test of evaporative emission purge control system	Evaporative purge system	Complete or incomplete
Test of secondary air system	Secondary air system	No support
Test of air conditioning system refrigerant	A/C system refrigerant	No support
Test of oxygen sensor	Oxygen sensor	Complete or incomplete
Test of oxygen sensor heater	O <sub>2</sub> Heater Diagnosis	Complete or incomplete
Test of EGR system	EGR system	No support
Air fuel ratio control system for bank 1	Fuel System for Bank 1	_
Engine load data	Calculated load value	%
Engine coolant temperature signal	Coolant Temp.	°C or °F
Short term fuel trim by front oxygen (A/F) sensor	Short term fuel trim B1	%
Long term fuel trim by front oxygen (A/F) sensor	Long term fuel trim B1	%
Intake manifold absolute pressure signal	Mani. Absolute Pressure	mmHg or kPa or inHg or psi
Engine speed signal	Engine Speed	rpm
Vehicle speed signal	Vehicle Speed	km/h or MPH
Ignition timing advance for #1 cylinder	Ignition timing adv. #1	0
Intake air temperature signal	Intake Air Temp.	°C or °F
Intake air amount	Mass Air Flow	g/s
Throttle position signal	Throttle Opening Angle	%
Oxygen sensor #11	Oxygen Sensor #11	—
Oxygen sensor #12	Oxygen Sensor #12	—
Rear oxygen sensor output signal	Oxygen Sensor #12	V
Air fuel ratio correction by rear oxygen sensor	Short term fuel trim #12	%
On-board diagnostic system	OBD System	CARB-OBD2
A/F sensor output signal	A/F sensor #11	V
A/F lambda signal	A/F sensor #11	—
A/F lambda signal #11	A/F sensor #11	—
A/F sensor current #11		

NOTE:

For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MANUAL.

### Bro SUBARU SELECT MONITOR

#### 6. READ FREEZE FRAME DATA FOR ENGINE. (OBD MODE)

Eris Studios 1) On the «Main Menu» display screen, select the {Each System Check} and press the [YES] key.

2) On the «System Selection Menu» display screen, select the {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 {OBD System} and press the [YES] key.

5) On the «OBD Menu» display screen, select the {Freeze Frame Data} and press the [YES] key.

• A list of the support data is shown in the following table.

Contents	Display	Unit of measure
DTC for freeze frame data	Freeze frame data	DTC
Air fuel ratio control system for bank 1	Fuel system for Bank1	Closed loop or Open loop
Air fuel ratio control system for bank 2	Fuel system for Bank2	Open loop
O <sub>2</sub> sensor output voltage	Oxygen Sensor #12	V
Short term fuel trim by O <sub>2</sub> sensor	Short term fuel trim #12	%
Engine load data	Calculated load value	%
Engine coolant temperature signal	Coolant Temp.	°C or °F
Short term fuel trim by front oxygen (A/F) sensor	Short term fuel trim B1	%
Long term fuel trim by front oxygen (A/F) sensor	Long term fuel trim B1	%
Intake manifold absolute pressure signal	Mani. Absolute Pressure	mmHg, kPa, inHg or psi
Engine speed signal	Engine Speed	rpm
Vehicle speed signal	Vehicle Speed	km/h or MPH
Ignition timing advance for #1 cylinder	Ignition timing adv. #1	0
Intake air temperature signal	Intake Air Temp.	°C or °F
Intake air amount	Mass Air Flow	g/s
Throttle position signal	Throttle Opening Angle	%

#### NOTE:

For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MANUAL.

ENGINE (DIAGNOSTICS)

10

#### 7. LED OPERATION MODE FOR ENGINE

Studios 1) On the «Main Menu» display screen, select the {Each System Check} and press the [YES] key.

2) On the «System Selection Menu» display screen, select the {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 {Current Data Display & Save} and press the [YES] key.

5) On the «Data Display Menu» display screen, select the {Data & LED Display} and press the [YES] key.

6) Using the scroll key, move the display screen up or down until the desired data is shown.

• A list of the support data is shown in the following table.

Contents	Display	Message	LED "ON" requirements
Ignition switch signal	Ignition Switch	ON or OFF	When ignition switch is turned to ON.
Test mode signal	Test Mode Signal	ON or OFF	When test mode connector is connected.
Neutral position switch signal	Neutral Position Switch	ON or OFF	When neutral position signal is entered.
Air conditioning switch signal	A/C Switch	ON or OFF	When air conditioning switch is turned ON.
Air conditioning relay signal	A/C Compressor Signal	ON or OFF	When air conditioning relay is in function.
Radiator main fan relay signal	Radiator Fan Relay #1	ON or OFF	When radiator main fan relay is in function.
Knocking signal	Knocking Signal	ON or OFF	When knocking signal is entered.
Radiator sub fan relay signal	Radiator Fan Relay #2	ON or OFF	When radiator sub fan relay is in function.
Rear oxygen sensor rich signal	Rear O <sub>2</sub> Rich Signal	ON or OFF	When rear oxygen sensor mixture ratio is rich.
Starter switch signal	Starter Switch Signal	ON or OFF	When starter switch signal is entered.
Idle switch signal	Idle Switch Signal	ON or OFF	When idle switch signal is entered.
Crankshaft position sensor signal	Crankshaft Position Signal	ON or OFF	When crankshaft position sensor signal is entered.
Camshaft position sensor signal	Camshaft Position Signal	ON or OFF	When camshaft position sensor signal is entered.
Power steering switch signal	P/S Switch	ON or OFF	When power steering switch is entered.
Rear defogger switch signal	Rear Defogger Switch	ON or OFF	When rear defogger switch is turned ON.
Blower fan switch signal	Blower Fan Switch	ON or OFF	When blower fan switch is turned ON.
Small light switch signal	Light Switch	ON or OFF	When small light switch is turned ON.
Tumble generator valve actuator signal	TGV Output	ON or OFF	When TGV actuator signal is entered.
Tumble generator valve drive sig- nal	TGV Drive	Close or Open	When TGV moves and valve opens.
Fuel pressure control solenoid	PCV Solenoid Valve	ON or OFF	When fuel pressure control solenoid valve is in function.
Drain valve signal	Vent. Solenoid Valve	ON or OFF	When drain valve is in function.
Fuel tank sensor control solenoid valve signal	Fuel Tank Sensor Ctrl Valve	ON or OFF	When tank sensor control solenoid valve is in function.
Blow-by leak diagnosis SW	Blow-by Leak Connector	ON or OFF	When connected.
Handle SW	Handle SW	RHD/LHD	When the vehicle is LHD model.
ETC motor relay	ETC Motor Relay	ON or OFF	When electric throttle is in function.
Clutch SW	Clutch SW	ON or OFF	When clutch switch is turned ON.
Stop SW	Stop Light Switch	ON or OFF	When stop light switch is turned ON.
SET/CST SW	SET/COAST Switch	ON or OFF	When SET/COAST switch is turned ON.
RES/ACC SW	RESUME/ACCEL Switch	ON or OFF	When RESUME/ACCEL switch is turned ON.
Brake SW	Brake Switch	ON or OFF	When brake switch is turned ON.
Main SW	Main Switch	ON or OFF	When main switch is turned ON.

NOTE:

For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MANUAL.

#### **10.Read Diagnostic Trouble** Code (DTC)

#### A: OPERATION

#### 1. SUBARU SELECT MONITOR (NORMAL MODE)

1) On the «Main Menu» display screen, select the {Each System Check} and press the [YES] key.

2) On the «System Selection Menu» display screen, select the {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 {DTC Display} and press the [YES] key.

5) On the «DTC Display» display screen, select the {Current DTC} or {History DTC} and press the [YES] key.

#### NOTE:

 For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MAN-UAL.

 For detailed concerning DTC, refer to the List of Diagnostic Trouble Code (DTC). < Ref. to EN(STi)-66, List of Diagnostic Trouble Code (DTC).>

#### 2. SUBARU SELECT MONITOR (OBD MODE)

1) On the «Main Menu» display screen, select the {2. Each System Check} and press the [YES] key.

2) On the «System Selection Menu» display screen, select the {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 {OBD System} and press the [YES] key.

5) On the «OBD Menu» display screen, select the {DTC Display} and press the [YES] key.

Make sure that a DTC is shown on the display screen.

#### NOTE:

 For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MAN-UAL.

 For detailed concerning DTC, refer to the List of Diagnostic Trouble Code (DTC). < Ref. to EN(STi)-66, List of Diagnostic Trouble Code (DTC).>

# 3. OBD-II GENERAL SCAN TOOL

train DTC.

For details concerning DTC, refer to the List of Diagnostic Trouble Code (DTC). < Ref. to EN(STi)-66, List of Diagnostic Trouble Code (DTC).>

#### NOTE:

Br.

Refer to OBD-II general scan tool manufacturer's instruction manual to access emission-related powertrain DTC (MODE \$03).

### **11.Inspection Mode**

#### A: OPERATION

Carry out trouble diagnosis shown in the following DTC table.

When performing trouble diagnosis which is not shown in the DTC table, refer to the next item Drive cycle. <Ref. to EN(STi)-40, Drive Cycle.>

DTC	Item	Condition
P0011	"A" Camshaft Position-Timing Over-Advanced or System Perfor- mance (Bank 1)	_
P0021	"A" Camshaft Position-Timing Over-Advanced or System Perfor- mance (Bank 2)	_
P0030	HO2S Heater Control Circuit (Bank 1 Sensor 1)	_
P0031	HO2S Heater Control Circuit Low (Bank 1 Sensor 1)	_
P0032	HO2S Heater Control Circuit High (Bank 1 Sensor 1)	_
P0037	HO2S Heater Control Circuit Low (Bank 1 Sensor 2)	_
P0038	HO2S Heater Control Circuit High (Bank 1 Sensor 2)	_
P0101	Mass or Volume Air Flow Circuit Range/Performance	_
P0102	Mass or Volume Air Flow Circuit Low Input	_
P0103	Mass or Volume Air Flow Circuit High Input	_
P0107	Manifold Absolute Pressure/Barometric Pressure Circuit Low Input	_
P0108	Manifold Absolute Pressure/Barometric Pressure Circuit High Input	
P0112	Intake Air Temperature Circuit Low Input	_
P0113	Intake Air Temperature Circuit High Input	_
P0117	Engine Coolant Temperature Circuit Low Input	_
P0118	Engine Coolant Temperature Circuit High Input	
P0122	Throttle/Pedal Position Sensor/Switch "A" Circuit Low Input	_
P0123	Throttle/Pedal Position Sensor/Switch "A" Circuit High Input	_
P0129	Atmospheric Pressure Sensor Circuit Range/Performance	_
P0131	O <sub>2</sub> Sensor Circuit Low Voltage (Bank 1 Sensor 1)	_
P0132	O <sub>2</sub> Sensor Circuit High Voltage (Bank 1 Sensor 1)	_
P0134	O <sub>2</sub> Sensor Circuit No Activity Detected (Bank 1 Sensor 1)	
P0137	O <sub>2</sub> Sensor Circuit Low Voltage (Bank 1 Sensor 2)	
P0138	O <sub>2</sub> Sensor Circuit High Voltage (Bank 1 Sensor 2)	
P0182	Fuel Temperature Sensor "A" Circuit Low Input	
P0183	Fuel Temperature Sensor "A" Circuit High Input	_
P0222	Throttle/Pedal Position Sensor/Switch "B" Circuit Low Input	_
P0223	Throttle/Pedal Position Sensor/Switch "B" Circuit High Input	_
P0230	Fuel Pump Primary Circuit	_
P0245	Turbo/Super Charger Wastegate Solenoid "A" Low	_
P0327	Knock Sensor 1 Circuit Low Input (Bank 1 or Single Sensor)	_
P0328	Knock Sensor 1 Circuit High Input (Bank 1 or Single Sensor)	_
P0335	Crankshaft Position Sensor "A" Circuit	
P0336	Crankshaft Position Sensor "A" Circuit Range/Performance	
P0340	Camshaft Position Sensor "A" Circuit (Bank 1 or Single Sensor)	_
P0341	Camshaft Position Sensor "A" Circuit Range/Performance (Bank 1 or Single Sensor)	_
P0345	Camshaft Position Sensor "A" Circuit (Bank 2)	_
P0447	Evaporative Emission Control System Vent Control Circuit Open	_
P0448	Evaporative Emission Control System Vent Control Circuit Shorted	
P0452	Evaporative Emission Control System Pressure Sensor Low Input	
P0453	Evaporative Emission Control System Pressure Sensor High Input	_

# INSPECTION MODE

#### ENGINE (DIAGNOSTICS)

DTC	Item	Condition	
P0458	Evaporative Emission Control System Purge Control Valve Circuit	RESALF	lios
	Fuel Level Sensor Circuit Low Input		
	Fuel Level Sensor Circuit High Input		
	Vehicle Speed Sensor Circuit Low Input		
	Vehicle Speed Sensor Intermittent/Erratic/High		
	Starter Request Circuit		
	Idle Control System Malfunction (Fail-Safe)		
	Internal Control Module Random Access Memory (RAM) Error		
	Internal Control Module Read Only Memory (ROM) Error		
	Control Module Performance		
	Throttle Actuator Control Range/Performance (Bank 1)		
	Cooling Fan 1 Control Circuit Low Neutral Switch Input Circuit Low		
	Neutral Switch Input Circuit Low Neutral Switch Input Circuit High		
	Tumble Generated Valve Position Sensor 2 Circuit Low		
	Tumble Generated Valve Position Sensor 2 Circuit High Tumble Generated Valve Position Sensor 1 Circuit Low		
	Tumble Generated Valve Position Sensor 1 Circuit Low		
	ç		
	Tumble Generated Valve System 1 (Valve Close)		
	Tumble Generated Valve System 2 (Valve Close) Tumble Generated Valve Signal 1 Circuit Malfunction (Open)		
	Tumble Generated Valve Signal 1 Circuit Malfunction (Short)		
	Tumble Generated Valve Signal 2 Circuit Malfunction (Open)		
	Tumble Generated Valve Signal 2 Circuit Malfunction (Short)		
	Atmospheric Pressure sensor circuit malfunction (Low input)		
	Atmospheric Pressure sensor circuit malfunction (High input)		
	O <sub>2</sub> Sensor Circuit Range/Performance (Low) (Bank1 Sensor1)	—	
	O <sub>2</sub> Sensor Circuit Range/Performance (High) (Bank1 Sensor1)	—	
	Return Spring Failure	—	
	Fuel Tank Pressure Control Solenoid Valve Circuit Low	—	
	Fuel Tank Pressure Control Sol. Valve Circuit High	—	
	Fuel Tank Sensor Control Valve Circuit Low	—	
	Fuel Tank Sensor Control Valve Circuit High	—	
	Positive Crankcase Ventilation (Blow-by) Function Problem	—	
	Starter Switch Circuit Low Input	—	
	Back-up Voltage Circuit Malfunction		
	OCV Solenoid Valve Signal A Circuit Open (Bank 1)		
	OCV Solenoid Valve Signal A Circuit Short (Bank 1)	—	
	OCV Solenoid Valve Signal A Circuit Open (Bank 2)		
	OCV Solenoid Valve Signal A Circuit Short (Bank 2)	—	
	Throttle Actuator Control Motor Circuit Range/Performance	—	
	Throttle Actuator Control Motor Circuit Low	—	
	Throttle Actuator Control Motor Circuit High		
	Throttle/Pedal Position Sensor A Minimum Stop Performance		
	Throttle/Pedal Position Sensor/Switch "D" Circuit Low Input	_	
P2123	Throttle/Pedal Position Sensor/Switch "D" Circuit High Input	—	
P2127	Throttle/Pedal Position Sensor/Switch "E" Circuit Low Input		
P2128	Throttle/Pedal Position Sensor/Switch "E" Circuit High Input	—	
P2135	Throttle/Pedal Position Sensor/Switch "A" / "B" Voltage Rationality	_	
2138	Throttle/Pedal Position Sensor/Switch "D" / "E" Voltage Rationality	_	

#### 1. PREPARATION FOR THE INSPECTION MODE

1) Make sure that the fuel remains approx. half amount [20 - 40 & (5.3 - 10.6 US gal, 4.4 - 8.8 Imp gal)] and the battery voltage is 12 V or more.

2) Raise the vehicle using a garage jack and place on safety stands or drive the vehicle onto free rollers.

#### WARNING:

 Before raising the vehicle, ensure the parking brake is applied.

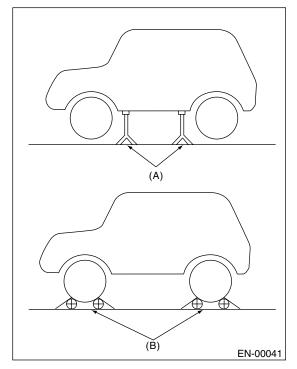
 Do not use a pantograph jack in place of a safety stand.

 Secure a rope or wire to the front and rear towing or tie-down hooks to prevent the lateral runout of front wheels.

 Do not abruptly depress/release the clutch pedal or accelerator pedal during works even when engine is operating at low speeds since this may cause vehicle to jump off free rollers.

 In order to prevent the vehicle from slipping due to vibration, do not place any wooden blocks or similar items between the safety stands and the vehicle.

 Since the rear wheels will also rotate, do not place anything near them. Also, make sure that nobody goes in front of the vehicle.



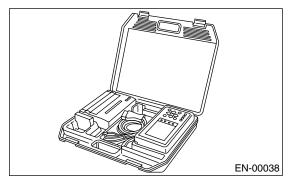
(A) Safety stand

(B) Free rollers

## DE ENGINE (DIAGNOSTICS) 2. SUBARU SELECT MONITOR

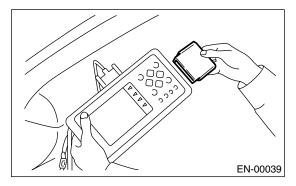
1) Warm up the engine.

is Studios 2) Prepare the Subaru Select Monitor kit. < Ref. to EN(STi)-7, PREPARATION TOOL, General Description.>

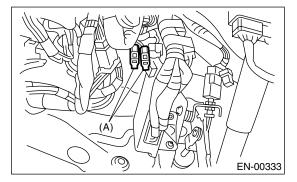


3) Connect the diagnosis cable to Subaru Select Monitor.

Insert the cartridge into Subaru Select Monitor. <Ref. to EN(STi)-7, PREPARATION TOOL, General Description.>

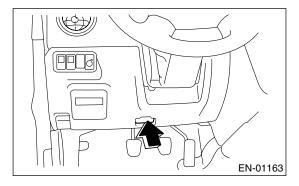


5) Connect the test mode connector (A) at the lower portion of instrument panel (on the driver's side).



(A) Test mode connector

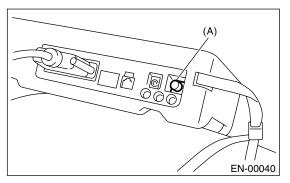
6) Connect the Subaru Select Monitor to data link connector located in the lower portion of the instrument panel (on the driver's side).



#### CAUTION:

#### Do not connect the scan tools except for Subaru Select Monitor and OBD-II general scan tool.

7) Turn the ignition switch to ON (engine OFF) and Subaru Select Monitor switch to ON.



#### (A) Power switch

8) On the «Main Menu» display screen, select the {2. Each System Check} and press the [YES] key.

9) On the «System Selection Menu» display screen, select the {Engine Control System} and press the [YES] key.

10) Press the [YES] key after the information of engine type is displayed.

11) On the «Engine Diagnosis» display screen, select the {Dealer Check Mode Procedure} and press the [YES] key.

12) When the "Perform Inspection (Dealer Check) Mode?" is shown on the display screen, press the [YES] key.

13) Perform subsequent procedures as instructed on the display screen.

• If trouble still remains in the memory, the corresponding DTC appears on the display screen.

#### NOTE:

• For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MAN-UAL.

 For detailed concerning the DTC, refer to the List of Diagnostic Trouble Code (DTC).
 <Ref. to EN(STi)-66, List of Diagnostic Trouble Code (DTC).>

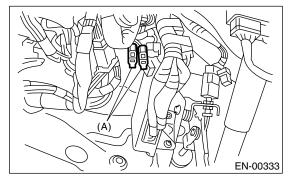
• Release the parking brake.

• The speed difference between front and rear wheels may light either the ABS warning light, but this indicates no malfunctions. When the engine control diagnosis is finished, perform the ABS memory clearance procedure of self-diagnosis system.

#### 3. OBD-II GENERAL SCAN TOOL

1) Warm up the engine.

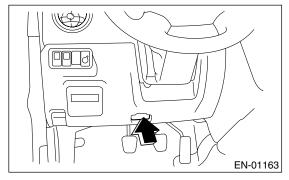
2) Connect the test mode connector (A) at the lower side of instrument panel (on the driver's side).



3) Connect the OBD-II general scan tool to its data link connector in the lower portion of instrument panel (on the driver's side).

#### CAUTION:

Do not connect the scan tools except for Subaru Select Monitor and OBD-II general scan tool.



4) Start the engine.

#### NOTE:

Depress the clutch pedal when starting engine.

5) Using the shift lever, turn the "N" position switch to ON.

6) Keep the engine speed in 2,500 - 3,000 rpm range for 40 seconds.

7) Place the shift lever in "1st" gear and drive the vehicle at 5 to 10 km/h (3 to 6 MPH).

#### NOTE:

• On AWD model, release the parking brake.

• The speed difference between front and rear wheels may light ABS warning light, but this indicates no malfunctions. When the engine control diagnosis is finished, perform the ABS memory clearance procedure of self-diagnosis system.

8) Using the OBD-II general scan tool, check for DTC and record the result(s).

NOTE:

· For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

· For detailed concerning DTC, refer to the List of Diagnostic Trouble Code (DTC).

<Ref. to EN(STi)-66, List of Diagnostic Trouble Code (DTC).>

### **12.Drive Cycle**

#### A: OPERATION

E NOT FOR RESALE There are three drive patterns for the trouble diagnosis. Driving in the specified pattern allows to diagnose malfunctioning items listed below. After the malfunctioning items listed below are repaired, always check whether they correctly resume their functions by driving in the required drive pattern.

**DRIVE CYCLE** 

#### 1. PREPARATION FOR THE DRIVE CYCLE

1) Make sure that the fuel remains approx. half amount [20 - 40 & (5.3 - 10.6 US gal, 4.4 - 8.8 Imp gal)], and battery voltage is 12 V or more.

2) Separate the test mode connector.

NOTE:

 Except for the engine coolant temperature specified items at starting, the diagnosis is carried out after engine warm up.

 Carry out the diagnosis which is marked \* on DTC twice, then, after finishing first diagnosis, stop the engine and do second time at the same condition.

#### 2. AFTER RUNNING 20 MINUTES AT 80 KM/H (50 MPH), IDLE ENGINE FOR 1 MINUTE.

DTC	Item	Condition
*P0125	Insufficient Coolant Temperature for Closed Loop Fuel Control	Engine coolant temperature is less than 20°C (68°F) at engine start.
*P0128	Coolant Thermostat	Engine coolant temperature is less than 55°C (131°F) at engine start.
*P0133	O <sub>2</sub> Sensor Circuit Slow Response (Bank 1 Sensor 1)	—
*P0181	Fuel Temperature Sensor A Performance Problem	—
*P0420	Catalyst System Efficiency Below Threshold (Bank 1)	—
*P0442	Evaporative Emission Control System Leak Detected (small leak)	—
*P0451	Evaporative Emission Control System Pressure Sensor Range/Performance	—
*P0456	Evaporative Emission Control System Leak Detected (very small leak)	—
*P0457	Evaporative Emission Control System Leak Detected (fuel cap loose/off)	—
P0459	Evaporative Emission Control System Purge Control Valve Circuit High	—
P0461	Fuel Level Sensor Circuit Range/Performance	—
P0692	Cooling Fan 1 Control Circuit High	—
P1443	Vent Control Solenoid Valve Function Problem	—
*P1448	Fuel Tank Sensor Control Valve Range/Performance	—
*P2096	Post Catalyst Fuel Trim System Too Lean Bank 1	—
*P2097	Post Catalyst Fuel Trim System Too Rich Bank 1	—

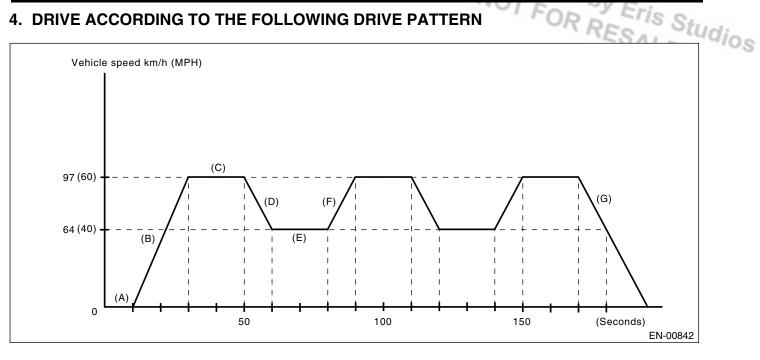
#### 3. IDLE FOR 10 MINUTES

NOTE:

Before the diagnosis, drive the vehicle at 10 km/h (6 MPH) or more.

DTC	Item	Condition
*P0111	Intake Air Temperature Sensor Range/Performance Problem	Engine coolant temperature is less than 30°C (86°F) at engine start.
P0171	System too Lean (Bank 1)	—
P0172	System too Rich (Bank 1)	—
*P0464	Fuel Level Sensor Circuit Intermittent	—
*P0483	Cooling Fan Rationality Check	—
*P0506	Idle Control System RPM Lower Than Expected	—
*P0507	Idle Control System RPM Higher Than Expected	_

## E ENGINE (DIAGNOSTICS) 4. DRIVE ACCORDING TO THE FOLLOWING DRIVE PATTERN



**DRIVE CYCLE** 

(A) Idle engine for 10 seconds or more. Accelerate to 97 km/h (60 MPH)

within 20 seconds.

(B)

- (D) Decelerate with fully closed throttle to 64 km/h (40 MPH).
- Drive vehicle at 64 km/h (40 MPH) (E) for 20 seconds.
- (C) Drive vehicle at 97 km/h (60 MPH) for 20 seconds.
- (F) Accelerate to 97 km/h (60 MPH) within 10 seconds.
- (G) Stop vehicle with throttle fully closed.

DTC	Item	Condition
P0068	Manifold Absolute Pressure/Barometric Pressure Circuit Range/Perfor- mance	_
*P0139	O <sub>2</sub> Sensor Circuit Slow Response (Bank 1 Sensor 2)	—
P0244	Turbo/Supercharger Wastegate Solenoid "A" Range/Performance	—
P0246	Turbo/Supercharger Wastegate Solenoid "A" High	—
*P0301	Cylinder 1 Misfire Detected	In some cases, diagnosis may complete at once.
*P0302	Cylinder 2 Misfire Detected	In some cases, diagnosis may complete at once.
*P0303	Cylinder 3 Misfire Detected	In some cases, diagnosis may complete at once.
*P0304	Cylinder 4 Misfire Detected	In some cases, diagnosis may complete at once.
P1090	Tumble Generated Valve System 1 (Valve Open)	—
P1092	Tumble Generated Valve System 2 (Valve Open)	—

#### **13.Clear Memory Mode**

#### A: OPERATION

### 1. SUBARU SELECT MONITOR (NORMAL MODE)

 On the «Main Menu» display screen, select the {2. Each System Check} and press the [YES] key.
 On the «System Selection Menu» display screen, select the {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' and 'Turn Ignition Switch OFF' are shown on the display screen, turn the ignition switch to OFF, and then turn the Subaru Select Monitor to OFF.

#### NOTE:

For detailed operation procedure, refer to the SUB-ARU SELECT MONITOR OPERATION MANUAL.

### 2. SUBARU SELECT MONITOR (OBD MODE)

1) On the «Main Menu» display screen, select the

{2. Each System Check} and press the [YES] key.

2) On the «System Selection Menu» display screen, select the {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 {OBD System} and press the [YES] key.

5) On the «OBD Menu» display screen, select the {4. Diagnosis Code(s) Cleared} and press the [YES] key.

6) When the 'Clear Diagnostic Code?' is shown on the display screen, press the [YES] key.

7) Turn the ignition switch to OFF, and then turn the Subaru Select Monitor to OFF.

#### NOTE:

For detailed operation procedure, refer to the SUB-ARU SELECT MONITOR OPERATION MANUAL.

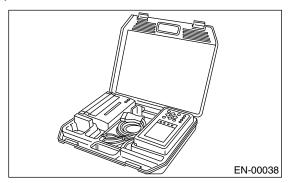
#### 3. OBD-II GENERAL SCAN TOOL

For clear memory procedures using the OBD-II general scan tool, refer to the OBD-II General Scan Tool Instruction Manual.

#### 14.Compulsory Valve Operation Check Mode

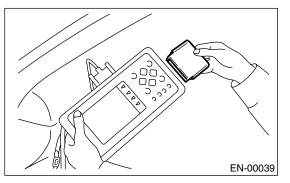
#### A: OPERATION

1) Prepare the Subaru Select Monitor kit. <Ref. to EN(STi)-7, PREPARATION TOOL, General Description.>

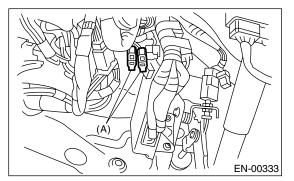


2) Connect the diagnosis cable to Subaru Select Monitor.

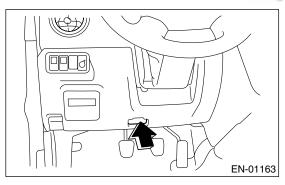
3) Insert the cartridge into Subaru Select Monitor. <Ref. to EN(STi)-7, PREPARATION TOOL, General Description.>



4) Connect the test mode connector (A) at the lower portion of instrument panel (on the driver's side).



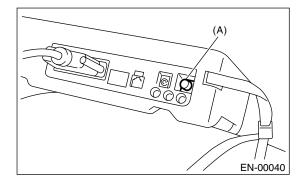
5) Connect the Subaru Select Monitor to data link connector located in the lower portion of instrument panel (on the driver's side).



#### CAUTION:

#### Do not connect scan tools except for the Subaru Select Monitor and OBD-II general scan tool.

6) Turn the ignition switch to ON (engine OFF) and Subaru Select Monitor switch to ON.



(A) Power switch

7) On the «Main Menu» display screen, select the {2. Each System Check} and press the [YES] key.
8) On the «System Selection Menu» display screen, select the {Engine Control System} and press the [YES] key.

9) Press the [YES] key after the information of engine type is displayed.

10) On the «Engine Diagnosis» display screen, select the {System Operation Check Mode} and press the [YES] key.

11) On the «System Operation Check Mode» display screen, select the {Actuator ON/OFF Operation} and press the [YES] key.

12) Select the desired compulsory actuator on the «Actuator ON/OFF Operation» display screen and press the [YES] key.

13) Pressing the [NO] key completes the compulsory operation check mode. The display will then return to the «Actuator ON/OFF Operation» screen.

A ...

#### • A list of support data is shown in the following table.

Contents	Display
Compulsory fuel pump relay oper- ation check	Fuel Pump Relay
Compulsory radiator fan relay operation check	Radiator Fan Relay
Compulsory air conditioning relay operation check	A/C Compressor Relay
Compulsory purge control sole- noid valve operation check	CPC Solenoid Valve
Compulsory pressure control sole- noid valve operation check	PCV Solenoid Valve
Compulsory drain valve operation check	Vent. Control Solenoid Valve
Compulsory fuel tank sensor con- trol valve operation check	Fuel Tank Sensor Con- trol Valve

#### NOTE:

• The following parts will be displayed but not func-tional because they are not installed on the vehicle.

Display
EGR Solenoid Valve
ASV Solenoid Valve
FICD Solenoid
Pressure Switching Sol. 1
Pressure Switching Sol. 2
AAI Solenoid Valve
Turbocharger Wastegate Solenoid

• For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MAN-UAL.

# MALFUNCTION INDICATOR LIGHT ENGINE (DIAGNOSTICS)

### **15.Malfunction Indicator Light** A: PROCEDURE

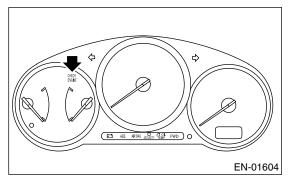
ENGINE (DIAGNOSTICS)	
15.Malfunction Indicator Light A: PROCEDURE	d
1. Activation of check malfunction indicator light. <ref. activation="" en(sti)-46,="" indicator="" light,="" light.="" malfunction="" of="" to=""></ref.>	
$\downarrow$	
2. Check that the malfunction indicator light does not come on. <ref. come="" does="" en(sti)-47,="" indicator="" light="" light.="" malfunction="" not="" on.,="" to=""></ref.>	
$\downarrow$	
3. Check that the malfunction indicator light does not go off. <ref. does="" en(sti)-49,="" go="" indicator="" light="" light.="" malfunction="" not="" off.,="" to=""></ref.>	
$\downarrow$	
4. Check that the malfunction indicator light does not blink at a cycle of 3 Hz. <ref. 3="" a="" at="" blink="" cycle="" does="" en(sti)-50,="" hz.,="" indicator="" light="" light.="" malfunction="" not="" of="" to=""></ref.>	
$\downarrow$	
5. Check that the malfunction indicator light remains blinking at a cycle of 3 Hz. <ref. en(sti)-52,="" indica-<br="" malfunction="" to="">TOR LIGHT REMAINS BLINKING AT A CYCLE OF 3 HZ., Malfunction Indicator Light.&gt;</ref.>	

#### B: ACTIVATION OF MALFUNCTION INDICATOR LIGHT

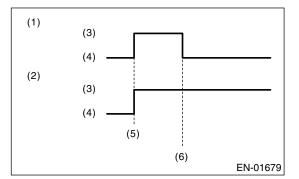
1) When the ignition switch is turned to ON (engine off), the malfunction indicator light in the combination meter illuminates.

#### NOTE:

If the malfunction indicator light does not illuminate, perform diagnostics of the malfunction indicator light circuit or the combination meter circuit. <Ref. to EN(STi)-47, MALFUNCTION INDICATOR LIGHT DOES NOT COME ON., Malfunction Indicator Light.>

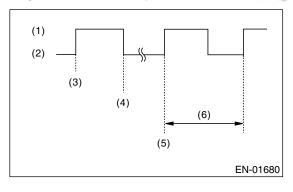


2) After starting the engine, the malfunction indicator light goes out. If it does not, either the engine or the emission control system is malfunctioning.



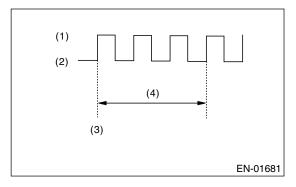
- (1) No trouble
- (2) Trouble occurs
- (3) ON
- (4) OFF
- (5) Ignition switch ON
- (6) Engine start

3) If the diagnosis system senses a misfire which could damage the catalyzer, the malfunction indicator light will blink at a cycle of 1 Hz.



- (1) ON
- (2) OFF
- (3) Ignition switch ON
- (4) Engine start
- (5) Misfire start
- (6) 1 second

4) When the ignition switch is turned to ON (engine off) or to START with the test mode connector connected, the malfunction indicator light blinks at a cycle of 3 Hz.



- (1) ON
- (2) OFF
- (3) Ignition switch ON
- (4) 1 second

### Bro MALFUNCTION INDICATOR LIGHT

ENGINE (DIAGNOSTICS)

RESAL

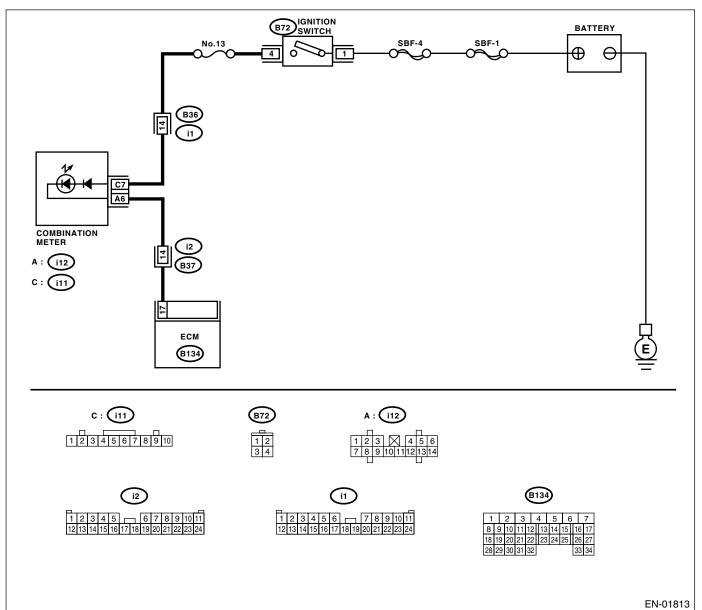
Studios

F

#### C: MALFUNCTION INDICATOR LIGHT DOES NOT COME ON.

#### • DIAGNOSIS:

- The malfunction indicator light circuit is shorted.
- **TROUBLE SYMPTOM:** •
  - When the ignition switch is turned to ON (engine OFF), malfunction indicator light does not come on.
- WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK OUTPUT SIGNAL FROM ECM. 1)Turn the ignition switch to ON. 2)Measure the voltage between ECM connec- tor and chassis ground. <i>Connector &amp; terminal</i> (B134) No. 17 (+) — Chassis ground (–):	Is the voltage less than 1 V?	Go to step 4.	Go to step 2.
2	CHECK POOR CONTACT.	Does the malfunction indicator light come on when shaking or pulling ECM connector and harness?		Go to step 3.

#### ENGINE (DIAGNOSTICS)

# MALFUNCTION INDICATOR LIGHT

			For	y Erie	1
	Step	Check	Yes	REO'NO' Sti	Id:
3	CHECK ECM CONNECTOR.	Is the ECM connector correctly connected?	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	Repair the con- nection of ECM connector.	1410
4	<ol> <li>1)Turn the ignition switch to OFF.</li> <li>2)Remove the combination meter. <ref. idi-<br="" to="">10, Combination Meter Assembly.&gt;</ref.></li> <li>3)Disconnect the connector from ECM and combination meter.</li> <li>4)Measure the resistance of harness between ECM and combination meter connector.</li> <li>Connector &amp; terminal (B134) No. 17 — (i12) No. 6:</li> </ol>		Go to step 5.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between ECM and combi- nation meter con- nector • Poor contact in coupling connector	
5	CHECK POOR CONTACT. Check poor contact in combination meter con- nector.	Is there poor contact in combi- nation meter connector?	Repair the poor contact in combi- nation meter con- nector.	Go to step <b>6</b> .	
6	CHECK HARNESS BETWEEN COMBINA- TION METER AND IGNITION SWITCH CON- NECTOR. 1)Turn the ignition switch to ON. 2)Measure the voltage between combination meter connector and chassis ground. <i>Connector &amp; terminal</i> (i11) No. 7 (+) — Chassis ground (–):	Is the voltage more than 10 V?	Replace the com- bination meter cir- cuit board. <ref. to IDI-10, Combi- nation Meter Assembly.&gt;</ref. 	Check the follow- ing and repair if necessary. NOTE: • Blown out fuse (No. 13) • Open or short circuit in harness between fuse (No. 13) and battery terminal • Poor contact in ignition switch connector	

## MALFUNCTION INDICATOR LIGHT

ENGINE (DIAGNOSTICS)

RESALE

Studios

#### D: MALFUNCTION INDICATOR LIGHT DOES NOT GO OFF.

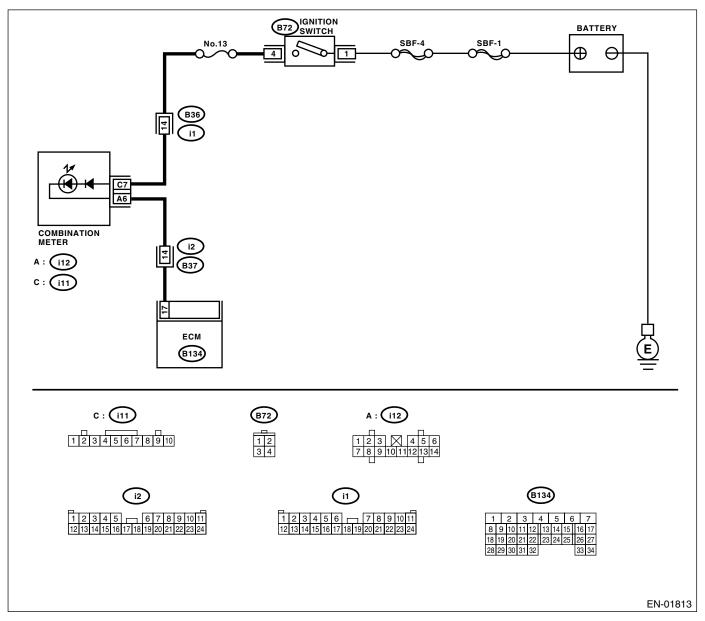
#### • DIAGNOSIS:

• The malfunction indicator light circuit is shorted.

#### • TROUBLE SYMPTOM:

• Although malfunction indicator light comes on when engine runs, but DTC is not shown on Subaru Select Monitor or OBD-II general scan tool display.

#### • WIRING DIAGRAM:



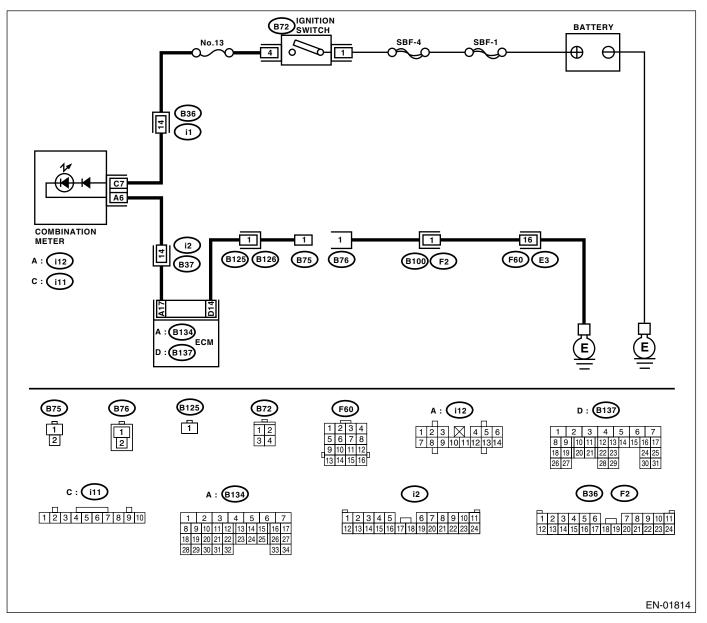
	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN COMBINA-	Does the malfunction indicator	Repair the short	Replace the ECM.
	TION METER AND ECM CONNECTOR.	light come on?	circuit in harness	<ref. fu(sti)-<="" th="" to=""></ref.>
	<ol> <li>Turn the ignition switch to OFF.</li> </ol>		between combina-	41, Engine Con-
	2)Disconnect the connector from ECM.		tion meter and	trol Module
	3)Turn the ignition switch to ON.		ECM connector.	(ECM).>

VOIL

F

## ENGINE (DIAGNOSTICS) E: MALFUNCTION INDICATOR LIGHT DOES NOT BLINK AT A CYCLE OF 3 HZ.

- The malfunction indicator light circuit is open or shorted.
- Test mode connector circuit is open.
- **TROUBLE SYMPTOM:** 
  - During inspection mode, malfunction indicator light does not blink at a cycle of 3 Hz.
- WIRING DIAGRAM:



# MALFUNCTION INDICATOR LIGHT ENGINE (DIAGNOSTICS)

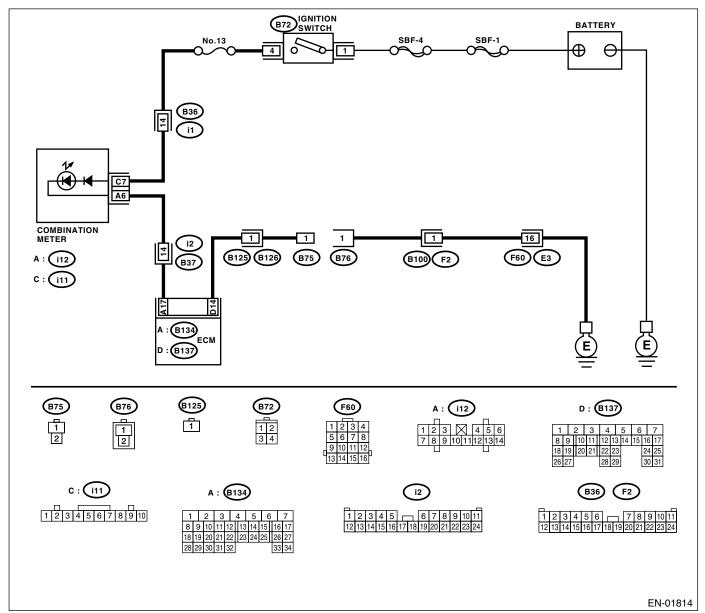
	Step	Check	Yes	No St	10000
1	CHECK STATUS OF MALFUNCTION INDI- CATOR LIGHT. 1)Turn the ignition switch to OFF. 2)Disconnect the test mode connector. 3)Turn the ignition switch to ON. (engine OFF)	Does the malfunction indicator light come on?	Go to step 2.	Repair the mal- function indicator light circuit. <ref. to EN(STi)-47, MALFUNCTION INDICATOR LIGHT DOES NOT COME ON., Malfunction Indica- tor Light.&gt;</ref. 	Idio:
2	CHECK HARNESS BETWEEN COMBINA- TION METER AND ECM CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Turn the ignition switch to ON.	Does the malfunction indicator light come on?	Repair the ground short circuit in har- ness between combination meter and ECM connec- tor.	Go to step <b>3</b> .	
3	CHECK HARNESS BETWEEN TEST MODE CONNECTOR AND CHASSIS GROUND. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Measure the resistance of harness between test mode connector and chassis ground. Connector & terminal (B76) No. 1 — Chassis ground:	Is the resistance less than 1 Ω?	Go to step 4.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between test mode connec- tor and chassis ground	
4	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact in ECM connector.	Go to step 5.	
5	CHECK HARNESS BETWEEN ECM AND TEST MODE CONNECTOR. 1)Connect the test mode connector. 2)Measure the resistance of harness between ECM and chassis ground. Connector & terminal (B137) No. 14 — Chassis ground:	Is the resistance less than 1 $\Omega$ ?	Go to step <b>6</b> .	Repair the open circuit in harness between ECM and test mode connec- tor.	
6	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact in ECM connector.	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	

### Bro MALFUNCTION INDICATOR LIGHT

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## F: MALFUNCTION INDICATOR LIGHT REMAINS BLINKING AT A CYCLE OF 3

- **DIAGNOSIS:** •
  - Test mode connector circuit is shorted.
- **TROUBLE SYMPTOM:** 
  - Malfunction indicator light blinks at a cycle of 3 Hz when ignition switch is turned to ON.
- WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK TEST MODE CONNECTOR. 1)Disconnect the test mode connector. 2)Turn the ignition switch to ON.	Does the malfunction indicator light blink?		System is in good order. NOTE: Malfunction indica tor light blinks at a
				cycle of 3 Hz when test mode connector is connected.

# MALFUNCTION INDICATOR LIGHT ENGINE (DIAGNOSTICS)

Step	Check	Yes	Pro No Sti	101
	Is the resistance less than 5 Ω?	Repair the short circuit in harness between ECM and test mode connec- tor.	41, Engine Con-	

### **16.Diagnostics for Engine Starting Failure** A: PROCEDURE

DIAGNOSTICS FOR ENGINE STARTING FAILURE ENGINE (DIAGNOSTICS)	
ENGINE (DIAGNOSTICS)  16.Diagnostics for Engine Starting Failure  A: PROCEDURE	dios
1. Check the fuel level.	
$\downarrow$	
2. Inspection of starter motor circuit. <ref. circuit,="" diagnostics="" en(sti)-55,="" engine="" fail-<br="" for="" motor="" starter="" starting="" to="">ure.&gt;</ref.>	
$\downarrow$	
<ol> <li>Inspection of ECM power supply and ground line. <ref. and<br="" control="" en(sti)-58,="" module="" power="" supply="" to="">GROUND LINE, Diagnostics for Engine Starting Failure.&gt;</ref.></li> </ol>	
$\downarrow$	
<ol> <li>Inspection of ignition control system. <ref. control="" diagnostics="" en(sti)-60,="" engine="" for="" ignition="" starting<br="" system,="" to="">Failure.&gt;</ref.></li> </ol>	
$\downarrow$	
5. Inspection of fuel pump circuit. < Ref. to EN(STi)-63, FUEL PUMP CIRCUIT, Diagnostics for Engine Starting Failure.>	
$\downarrow$	
6. Inspection of fuel injector circuit. < Ref. to EN(STi)-64, FUEL INJECTOR CIRCUIT, Diagnostics for Engine Starting Failure.>	

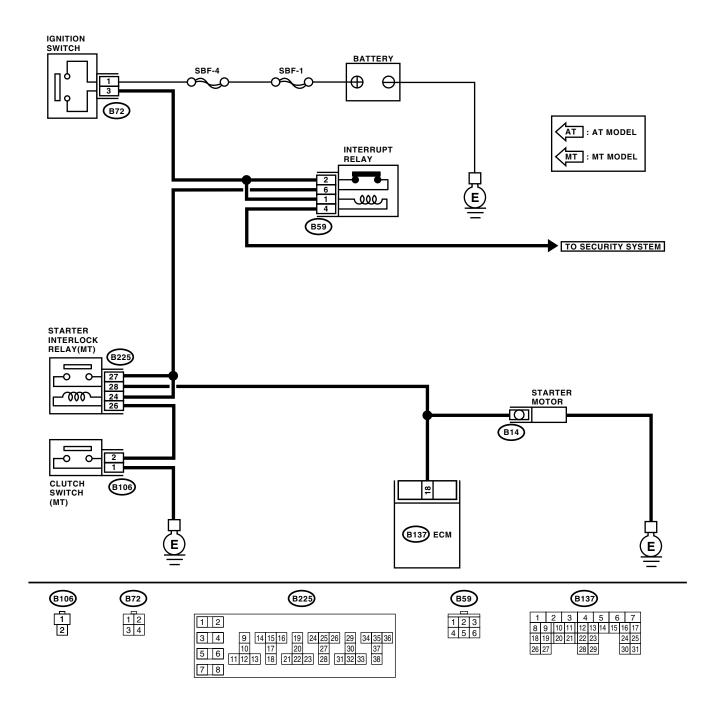
**ENGINE (DIAGNOSTICS)** Eris Studios

#### **B: STARTER MOTOR CIRCUIT**

#### **CAUTION:**

RRESALE After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

• WIRING DIAGRAM:



EN-01815

### DIAGNOSTICS FOR ENGINE STARTING FAILURE OIL

			For	y Eris	-
	Step	Check	Yes	No St	Id:
1	CHECK OPERATION OF STARTER MOTOR.	Does the starter motor oper- ate?	Go to step 2.	Go to step 3.	Idios
2	CHECK DTC.	Is the DTC displayed? <ref. to<br="">EN(STi)-34, OPERATION, Read Diagnostic Trouble Code (DTC).&gt;</ref.>	Using the List of Diagnostic Trou- ble Code (DTC), check the appro- priate DTC. <ref. to EN(STi)-66, List of Diagnostic Trouble Code (DTC).&gt;</ref. 	Repair the poor contact in ECM connector.	•
3	CHECK INPUT SIGNAL FOR STARTER MO- TOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from starter motor. 3)Turn the ignition switch to START. 4)Measure the power supply voltage between starter motor connector terminal and engine ground. <i>Connector &amp; terminal</i> <i>(B14) No. 1 (+) — Engine ground (–):</i> NOTE: Depress the clutch pedal.	Is the voltage more than 10 V?	Go to step <b>4</b> .	Go to step <b>5</b> .	
4	CHECK GROUND CIRCUIT OF STARTER MOTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the terminal from starter motor. 3)Measure the resistance of ground cable between ground cable terminal and engine ground.	Is the resistance less than 5 $\Omega$ ?	Check the starter motor. <ref. to<br="">SC(H4SO)-7, Starter.&gt;</ref.>	Repair the open circuit of ground cable.	
5	CHECK HARNESS BETWEEN BATTERY AND IGNITION SWITCH CONNECTOR. 1)Disconnect the connector from ignition switch. 2)Measure the power supply voltage between ignition switch connector and chassis ground. <i>Connector &amp; terminal</i> (B72) No. 1 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 6.	<ul> <li>Check the follow- ing, repair if nec- essary.</li> <li>Fuse is blown out.</li> <li>Open circuit in harness between igni- tion switch and battery.</li> </ul>	
6	<ul> <li>CHECK IGNITION SWITCH.</li> <li>1)Disconnect the connector from ignition switch.</li> <li>2)Measure the resistance between ignition switch terminals while turning ignition switch to START.</li> <li>Terminals</li> <li>No. 1 - No. 3:</li> </ul>	Is the resistance less than 5 $\Omega$ ?	Go to step 7.	Replace the igni- tion switch.	
7	CHECK INPUT VOLTAGE OF STARTER IN- TERLOCK RELAY. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from starter inter- lock relay. 3)Connect the connector to ignition switch. 4)Measure the input voltage between starter interlock relay connector and chassis ground while turning ignition switch to START. Connector & terminal (B104) No. 27 (+) — Chassis ground (-): (B104) No. 24 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step <b>8</b> .	Repair open or short circuit to ground in harness between starter interlock relay and ignition switch. NOTE: Check security system (if equipped). <ref. to SL-20, Security System.&gt;</ref. 	

# DIAGNOSTICS FOR ENGINE STARTING FAILURE ENGINE (DIAGNOSTICS)

			VI For	y Eria	-
	Step	Check	Yes	No Sti	lel:
8	CHECK STARTER INTERLOCK RELAY. 1)Connect the battery to starter interlock relay terminals No. 26 and No. 24. 2)Measure the resistance between starter interlock relay terminals. Terminals No. 27 — No. 28:	Is the resistance less than 1 $\Omega$ ?	Go to step 9.	Replace the starter interlock relay.	1410S
9	CHECK GROUND CIRCUIT OF CLUTCH SWITCH. 1)Disconnect the connector from clutch switch. 2)Measure the resistance between clutch switch connector and chassis ground. Connector & terminal (B106) No. 1 — Chassis ground:	Is the resistance less than 5 $\Omega$ ?	Go to step 10.	Repair open circuit of ground cable.	
10	CHECK CLUTCH SWITCH. Measure the resistance between clutch switch terminals while depressing the clutch pedal. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance less than 1 $\Omega$ ?	Go to step 11.	Replace the clutch switch. <ref. to<br="">CL-30, Clutch Switch.&gt;</ref.>	
11	CHECK CLUTCH SWITCH CIRCUIT. 1)Connect the connector to clutch switch. 2)Measure the resistance between starter interlock relay connector and chassis ground while depressing the clutch pedal. Connector & terminal (B104) No. 26 — Chassis ground:	Is the resistance less than 1 $\Omega$ ?	Repair short circuit to ground in har- ness between starter interlock relay and starter motor.	Repair open circuit in harness between starter interlock relay and clutch switch.	

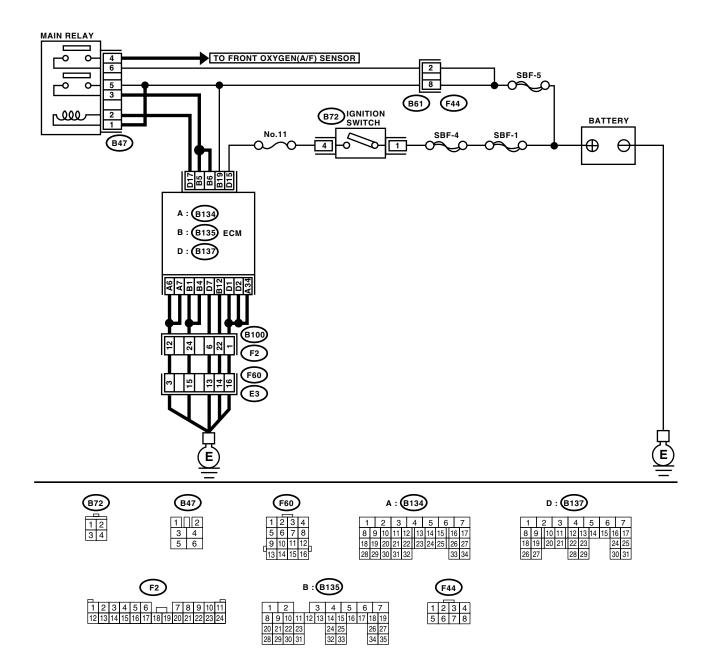
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ENGINE (DIAGNOSTICS)

## C: CONTROL MODULE POWER SUPPLY AND GROUND LINE RESAL

Eris Studios After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

• WIRING DIAGRAM:



# DIAGNOSTICS FOR ENGINE STARTING FAILURE ENGINE (DIAGNOSTICS)

		U Far	Y Fri-	_
Step	Check	Yes	REG Nos Sti	Id:
<ol> <li>CHECK MAIN RELAY.         <ol> <li>Turn the ignition switch to OFF.</li> <li>Remove the main relay.</li> <li>Connect the battery to main relay terminals.</li> <li>No. 1 and No. 2.</li> <li>Measure the resistance between main relaterminals.</li> </ol> </li> <li>Terminals</li> <li>No. 3 - No. 5:</li> </ol>		Go to step 2.	Replace the main relay.	<sup>rq</sup> ios
No. 4 — No. 6: CHECK GROUND CIRCUIT OF ECM. 1)Disconnect the connector from ECM. 2)Measure the resistance of harness between ECM and chassis ground. Connector & terminal (B134) No. 6 — Chassis ground: (B134) No. 7 — Chassis ground: (B134) No. 34 — Chassis ground: (B135) No. 1 — Chassis ground: (B135) No. 1 — Chassis ground: (B135) No. 1 — Chassis ground: (B137) No. 1 — Chassis ground: (B137) No. 2 — Chassis ground: (B137) No. 2 — Chassis ground: (B137) No. 7 — Chassis ground: (B137) No. 7 — Chassis ground:		Go to step 3.	Repair the open circuit in harness between ECM connector and engine grounding terminal.	
3 CHECK INPUT VOLTAGE OF ECM. Measure the voltage between ECM connected and chassis ground. Connector & terminal (B135) No. 19 (+) — Chassis ground (-) (B137) No. 15 (+) — Chassis ground (-)	2	Go to step 4.	Repair the open or ground short cir- cuit of power sup- ply circuit.	
<ul> <li>CHECK INPUT VOLTAGE OF MAIN RELA Measure the voltage between main relay con nector and chassis ground.</li> <li>Connector &amp; terminal (B47) No. 1 (+) — Chassis ground (-): (B47) No. 5 (+) — Chassis ground (-): (B47) No. 6 (+) — Chassis ground (-):</li> </ul>	I-		Repair the open or ground short cir- cuit in harness of power supply cir- cuit.	
<ul> <li>5 CHECK INPUT VOLTAGE OF ECM.</li> <li>1)Connect the main relay connector.</li> <li>2)Turn the ignition switch to ON.</li> <li>3)Measure the voltage between ECM connector and chassis ground.</li> <li>Connector &amp; terminal</li> <li>(B135) No. 5 (+) — Chassis ground (-):</li> <li>(B135) No. 6 (+) — Chassis ground (-):</li> <li>(B137) No. 17 (+) — Chassis ground (-):</li> </ul>		Check the ignition control system. <ref. en(sti)-<br="" to="">60, IGNITION CONTROL SYS- TEM, Diagnostics for Engine Start- ing Failure.&gt;</ref.>	Repair the open or ground short cir- cuit in harness between ECM connector and main relay con- nector.	

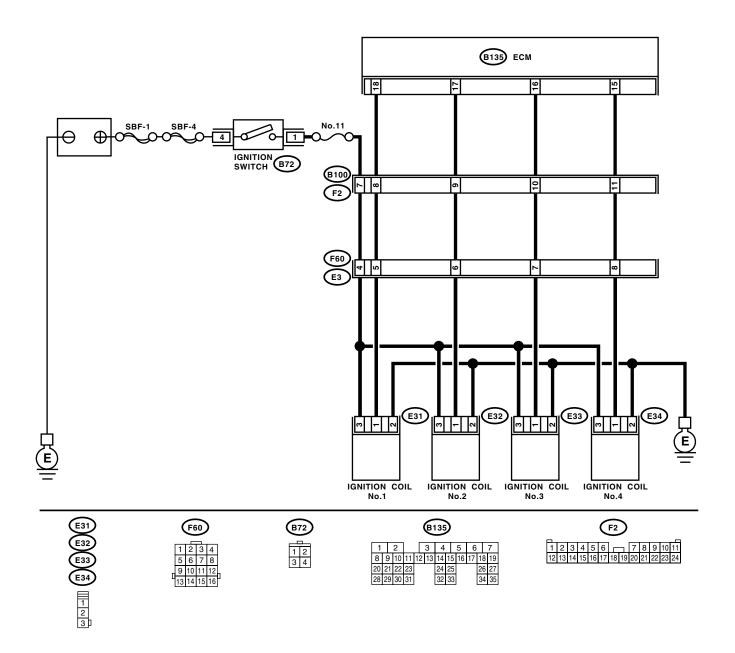
ENGINE (DIAGNOSTICS)

#### **D: IGNITION CONTROL SYSTEM**

#### **CAUTION:**

by Eris Studios RESALE After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

• WIRING DIAGRAM:



EN-01817

# DIAGNOSTICS FOR ENGINE STARTING FAILURE ENGINE (DIAGNOSTICS)

Step         Check         Yes         No           1         CHECK SPARK PLUG CONDITION.         Is the spark plug's status OK?         Go to step 2.         Reptace the spark plug.           1         CHECK SPARK PLUG CONDITION.         Is the spark plug's status OK?         Go to step 2.         Reptace the spark plug.           2)Check the spark plug condition.			VI For	y Fri-	-
<ul> <li>1)Remove the spark plug - Ref. to (G(STI)-5, INSTALATION, Spark Plug - 2)Check the spark plug condition - Ref. to (G(STI)-5, INSPECTION, Spark Plug - 2)Check the true pressure - Ref. to FU(STI)- ds, RELEASING CF PUEL PRESSURE, </li></ul>	•		Yes	120 - 11	Id:
INSTALLATION. Spark Plug.>         2)Check the spark plug to gondition. sHe to IG(STI)-5, INSPECTION. Spark Plug.>         2)Check (IGNITION SYSTEM FOR SPARKS. Dicenses the fuel pressure. After, to FU(STI)- 45, RELEASING OF FUEL PRESSURE, OPERATION, Fuel.>       Check H6 (NSTI)- 83, FUEL PUMP CIRCUIT), Diag- nostics for Engine Starting Failure.>       Go to step 3.         3)Contact the spark plug's thread portion on engine.       Interview fuel (NSTI)- 83, FUEL PUMP CIRCUIT) FOR IG- NITION COLL & (SMITOR ASSEMBLY. (T) Turn the ignition switch to OFF.       Is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connec- tor.         3)Contact the spark plug's thread portion on engine.       Is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connec- tor.         3)Contact the spark plug's thread portion on engine.       Is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connec- tor.         3)Connector & command (ignition coil & ignitor assembly connector and engine ground.       In this case, repair the to following:       In the sease the point on all (ignition sould & ignitor assembly. and ignition sould & ignitor assembly connector and engine ground.       Go to step 5.       Repair the har- ness and connec- tors         4)       CHECK HARNESS OF IGNITION COIL & GO NTOTE.       Is the resistance less than 5. (E33) No. 3 (-) = Engine ground (-); (E33) No. 3 (-) = Engine ground; (E33) No. 3 (-		Is the spark plug's status OK?	Go to step 2.		'YIOS
2)Check the spark plug conditionRef. to IG(ST)-5, INSPECTION, Spark PL03, SPARK5.       Does spark occur at each cyl- inder?       Check the fuel pump system. -Ref. to EN(ST)- -S, FUEL PMESURE.       Go to step 3.         2)Pelaase the fuel pressueRef. to FU(ST)- -45, RELEASING OF FUEL PRESURE.       Does spark occur at each cyl- inder?       Check the fuel pump system. -Ref. to EN(ST)- -S, FUEL PMESURE.       Go to step 3.         3)Contact the spark plug's thread portion on engine.       OPERATION, Fuel->       Repair the har- ness and connec- tor.       Repair the har- ness and connec- tor.         3)       CHECK POWER SUPPLY CIRCUIT FOR IG- inder.       Is the voltage more than 10 V7       Go to step 4.       Repair the har- ness and connec- tor.         3)       Intro COLL a (Softron CASSEMEL)       Is the voltage more than 10 V7       Go to step 4.       Repair the har- ness and connec- tor.         4)       OPERATION COLL a (Softron CASSEMEL)       Is the voltage more than 10 V7       Go to step 4.       Repair the har- ness and connec- tor.         4)       CHECK HARNESS OF IGNITION COLL & IG- (E33) No. 3 (r) — Engine ground (-): (E33) No. 3 (r) — Engine ground: (E33) No. 2 — Engine ground: (E33) No. 1 — (E34) No. 1: (				plug.	
IG(STI)-5, INSPECTION. Sperk Plug.>       Des Spark occur at each cyl- inder?       Deck the fuel pump system.         2       CHECK IONITION SYSTEM FOR SPARKS. OPERATION, Fuel.>       Does spark occur at each cyl- inder?       Deck the fuel pump system.       Got to step 3.         3       CHECK IONITION System FOR SPARSS. OPERATION, Fuel.>       Soft to EN(STI)- sit Fuel PUMP CIRCUIT, Diag- nostics for Engine Starting Failure.>       Repair the har- ness and connec- tor.         3       CHECK POWER SUPPLY CIRCUIT FOR IG- ignitor assembly.       Is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connec- tor.         3)       CHECK POWER SUPPLY ORCUIT FOR IG- ignitor assembly.       Is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connec- tor.         4)       CHECK HARNESS OF IGNITION COLL & IGNI COLL & IGNI (E33) No. 3 (-) — Engine ground (-): (E33) No. 2 (-) Engine ground (-): (E33) No. 2 — Engine ground: (C33) No. 2 — Eng					
2       CHECK IGNITION SYSTEM FOR \$PARKS. INCOMMENT ON SYSTEM FOR \$PARKS. PRELEXSING OF UPLIC PRESURE. PRELEXSING OF UPLIC PRESURE. SySchradt the spark plug's thread portion on engine. 4)While opening the throttle valve fully, crank engine to check that spark occurs at each cyl- inder.       Check The TULE PRESURE. CREUT T, Diagonal Starting Failure.>       Repair the har- ness and connec- tor.         3       CHECK POWER SUPPLY CIRCUIT FOR IG- inter.       Is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connec- tor.         4       WHECK POWER SUPPLY CIRCUIT FOR IG- inter.       Is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connec- tor.         3       CHECK POWER SUPPLY CIRCUIT FOR IG- int this case, repair the following: * Open contact in connector from ignition coil & ignition resembly connector and engine or 0.4 (pi) - Engine ground (-): (E33) No. 3 (+) - Engine ground: (E33) No. 2 - Engine groun					
1/Connect the spark plug to ignition coll.       inder?       pump system.         2)Reliases the fuel pressureRef. to EV(STI)- 45, RELEASING OF FUEL PRESSURE, OPERATION, FueL>       s. Fuel LPUMP Starting Failure.>         3)Contact the spark plug's thread portion on engine.       s. Fuel LPUMP CIRCUIT, Diag- nostics for Engine Starting Failure.>         3)Contact the spark plug's thread portion on engine.       is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connec- tor.         3)Contact the spark plug's thread portion on engine.       is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connec- tor.         3)Contact the spark plug to between ignition coll & ignitor assembly.       is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connec- tor.         4)Weasure the power supply voltage between ignition coll & ignitor assembly.       is the resistance less than 5       NOTE: (E33) No. 3 (-) — Engine ground (-): (E33) No. 3 (-) — Engine ground (-): (E33) No. 3 (-) — Engine ground (-): (E33) No. 2 (-) Engine ground: (C33) No. 2 —		Does spark occur at each cyl-	Check the fuel	Go to step 3.	
45, RELEASING OF FUEL PRESSURE, OPERATION, Fuel>       63, FUEL PUWP CIRCUIT, Diag- nositos for Engine Starting Failure.>         3)Contact the spark plug's thread portion on engine. 4)While opening the throtte valve fully, crank engine to check that spark occurs at each cyl- inde.       Repair the har- ness and connec- tor.         3       CHECK POWER SUPPLY CIRCUIT FOIL information coll & igniton switch to OFF. (2)Disconnect the connector from ignition coll & ignitor assembly. (E32) No. 3 (+) — Engine ground (-): (E33) No. 2 — Engine ground: (E33)					
OPERATION, Fuel.>       CIRCUIT, Diag- nositions for Engine Starting Failure.>         4) While opening the throttle value fully, crank engine to check that spark occurs at each cyl- inder.       Is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connec- tor.         3) CHECK POWER SUPPLY CIRCUIT FOR IG- NITION COLL & KINTOR ASSEMBLY.       Is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connec- tor.         4) Measure the power supply voltage between ignition coll & ignitor assembly connector and engine ground.       Is the voltage between ignition coll & ignitor assembly connector and engine ground (-): (E32) No. 3 (+) — Engine ground (-): (E33) No. 2 — Engine ground: (E33) No. 3 — (Connector & terminal (B135) No. 15 — (E34) No. 1: (B135) No. 16 — (E33) No. 1: (B135) No. 16 — (E33) N	2)Release the fuel pressure. <ref. fu(sti)-<="" td="" to=""><td></td><td><ref. en(sti)-<="" td="" to=""><td></td><td></td></ref.></td></ref.>		<ref. en(sti)-<="" td="" to=""><td></td><td></td></ref.>		
3)Contact the spark plug's thread portion on engine, 4)While opening the throttle value fully, crank engine to check that spark occurs at each cyl- inder.       Instance for Engine Starting Failure,>         3       CHECK POWER SUPPLY CIRCUT FOR IG- lightlom Switch to OFF.       Is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connec- tor.         3)Turn the ignition switch to ON, 4)Measure the power supply voltage between ignition coil & ignitor assembly connector and engine ground.       Is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connec- tor.         6(E33) No. 3 (+) — Engine ground (-): (E33) No. 3 (+) — Engine ground (-): (E34) NO. 3 (+) — Engine ground (-): (E33) No. 3 (-) — Engine ground: (E33) No. 3 (-) — Engine ground: (E33) No. 2 — Engine ground: (E33) No. 15 — (E34) No. 1: (B133) No.					
engine.       Starting Failure.>         4)WMile opening the throttle valve fully, crank engine to check that spark occurs at each cylinder.       Starting Failure.>         3       CHECK POWER SUPPLY CIRCUIT FOR IG- INTION COIL & IGNITOR ASSEMBLY.       Is the voltage more than 10 V?       Go to step 4.       Repair the harness and connector.         1)Turn the ignition switch to ON.       Sylint assembly connector and engine ground.       Is the voltage more than 10 V?       Go to step 4.       Repair the harness and connector.         4)Measure the power supply voltage between ignition coil & ignitor assembly connector at erminal (E31) No. 3 (+) — Engine ground (-): (E33) No. 3 (+) — Engine ground (-): (C33) No. 2 (+) — Engine ground: (+) (+) (+) (+) (+) (+) (+) (+) (+) (+)					
4)While opening the throttle value fully, crank engine to check that spark occurs at each cyl- inder.       Repair the har- ness and connec- tor.         3       CHECK POWER SUPPLY CIRCUIT FOR IG- ignitor Coll & digniton switch to OFF.       Is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connec- tor.         2)Disconnect the connector from ignition coll & ignitor assembly.       Throm the ignition switch to ON.       NOTE: In this case, repair the following:       • Open circuit in namess between ignition coll & ignitor         4)Measure the power supply voltage between ignition coll & ignitor assembly connector and engine ground.       Estimation of the following:       • Open circuit in namess between ignition coll & ignitor         (E32) No. 3 (+) — Engine ground (-): (E33) No. 3 (+) — Engine ground (-): (E34) No. 3 (+) — Engine ground (-):       Is the resistance less than 5 Ω?       Go to step 5.       Repair the har- ness and connec- tors         4       CHECK HARNESS OF IGNITION COLL & IG- IGITOR ASSEMBLY GROUND CIRCUIT.       Ω       Is the resistance less than 5 Ω?       Go to step 5.       Repair the har- ness and connec- tors         4       CHECK HARNESS OF IGNITION COLL & IG- IGITOR assembly connector and engine ground.       Is the resistance less than 5 Ω?       Go to step 5.       Repair the har- ness and connec- tors         5       CHECK HARNESS BETWEEN ECM AND IG- IGITOR SSEMBLY CON- NECTOR.       Is the resistance less than 1 Ω?       Go to step 6.       Repair the har- ness and connec- tor.					
engine to check that spark occurs at each cyl- inder.       Is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connector tor.         3       CHECK POWER SUPPLY CIRCUIT FOR IG- INITION COIL & IGNITOR ASSEMBLY.       Is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connector tor.         2)Disconnect the connector from ignition coil & ignitor assembly connector and engine ground.       Is the voltage more than 10 V?       Go to step 4.       NOTE: In this case, repair the following:         4       Check HARNESS OF IGNITION COIL & IG- IE33 No. 3 (+) — Engine ground (-): (E33 No. 2 — Engine ground: (E33 No. 2 — Engine ground: (E34 No. 5 — (E34 No. 1: (B135 No. 15 — (E34 No. 1: (B135 No					
3       CHECK POWER SUPPLY CIRCUIT FOR IG NITION COL & IGNITOR ASSEMBLY.       Is the voltage more than 10 V?       Go to step 4.       Repair the har- ness and connec- tor.         1)Turm the ignition switch to OFF.       2)Disconnect the connector from ignition coil & ignition coil & ignitor assembly.       NOTE:       NOTE:       NOTE:         3)Turm the ignition switch to ON.       4)Measure the power supply voltage between ignition coil & ignitor assembly connector and engine ground.       For assembly connector and engine ground (-):       • Open circuit in harness between ignition coil & ignit- tor assembly, and ignition coil & ignit- tor assembly connector       • Open circuit in harness between ignition coil & ignit- tor assembly connector         4       CHECK HARNESS OF IGNITION COIL & IG- NITOR ASSEMBLY GROUND CIRCUIT.       Is the resistance less than 5 Ω?       Go to step 5.       Repair the har- ness and connec- tor.         2)Measure the resistance between ignition coil & ignitor assembly connector and engine ground.       Is the resistance less than 5 Ω?       Go to step 5.       Repair the har- ness and connec- tor.         5       CHECK HARNESS BETWEEN ECM AND IG- NECTOR.       Is the resistance less than 1 (E33) No. 2 - Engine ground: (E34) No. 2 - Engine ground: (E33) No. 5 - (E34) No. 1: (B135) No. 15 - (E34) No. 1: (B135) No. 15 - (E34) No. 1:       Is the resistance less than 1 Ω?       Go to step 6.       Repair the har- ness and connec- tor.         1)Turm the ignition switch to OFF. 2)Disconnect the con					
NITION COIL & IGNITOR ASSEMBLY.       i) Turn the ignition switch to OFF.       i) Disconnect the connector from ignition coil & ignitor assembly.         (1) Turn the ignition switch to ON.       (4) Measure the power supply voltage between ignition coil & ignitor assembly connector and engine ground.       • Open circuit in this case, repair the following:       • Open circuit in function coil & ignitor switch to Circuit (E32) No. 3 (+) — Engine ground (-):       • Open circuit in function coil & ignition switch to Circuit (E33) No. 3 (+) — Engine ground (-):       • Poor contact in complex set ween ignition coil & ignition switch core contact in coupling connector (E33) No. 3 (+) — Engine ground (-):       • Poor contact in complex set ween ignition coil & ignition switch core contact in coupling connector (E33) No. 3 (+) — Engine ground (-):       • Repair the har-in ness and connector core is complex set ween ignition coil & ignition switch to OFF.       • Not Circuit (Circuit (	inder.				
1)Turn the ignition switch to OFF.       2)Disconnect the connector from ignition coil & ignitor assembly.       NOTE:         3)Turn the ignition switch to ON.       • Open circuit in line case, repair the following:       • Open circuit in harness between ignition coil & ignitor assembly.         4)Measure the power supply voltage between ignition coil & ignitor assembly connector and engine ground.       • Open circuit in harness between ignition coil & igniton switch (-):       • Open circuit in harness between ignition coil & igniton switch (-):         (E33) No. 3 (+) — Engine ground (-):       (E34) No. 3 (+) — Engine ground (-):       • Poor contact in coupling connector         4       CHECK HARNESS OF IGNITION COIL & IG-       Is the resistance less than 5       Go to step 5.       Repair the harness and connector         1)Turn the ignition switch to OFF.       2)Measure the resistance between ignition coil & ignitor assembly connector and engine ground:       Ω?       Open circuit in harness between ignition coil         (E33) No. 2 — Engine ground:       (E33) No. 2 — Engine ground:       Ω?       • Open circuit in harness between ignition coil & ignitor assembly connector from ECM.       NOTE:       NOTE:         3) Disconnect the connector from ECM.       S) No. 2 — Engine ground:       Ω?       • Open circuit in harness between ignition coil & ignitor assembly connector from ECM.       NOTE:         3) Disconnect the connector from ECM.       S) Disconnect the connector from ECM.       S) Check HARNESS BETWEEN ECM AND IG-		Is the voltage more than 10 V?	Go to step 4.		
2)Disconnect the connector from ignition coil & ignitor assembly.       NOTE:       In this case, repair the following:         4)Measure the power supply voltage between ignition coil & ignitor assembly connector and engine ground.       • Open circuit in harmess between ignition coil & igniton coil & igniton coil & igniton switch to (-):       • Open circuit in this case, repair the resistance less than 5         (E33) No. 3 (+) — Engine ground (-):       • Poor contact in coupling connector (E33) No. 3 (+) — Engine ground (-):       • Poor contact in coupling connector (E33) No. 3 (+) — Engine ground (-):         • CHECK HARNESS OF IGNITION COIL & IG       Is the resistance less than 5       Go to step 5.       Repair the harmess and connector.         • NOTE:       (E33) No. 3 (-) — Engine ground:       (E33) No. 2 — Engine ground:       Ω?         • (E33) No. 2 — Engine ground:       (E33) No. 2 — Engine ground:       Ω?         • (E33) No. 2 — Engine ground:       Is the resistance less than 1       Go to step 6.         • Open circuit in the case, repair the harmess between ignition coil & ignitor assembly connector and engine ground:       Is the resistance less than 1         • Open circuit in the case, repair the harmess between ignition coil & ignitor assembly connector for mignition coil & ignitor assembly connector for EGM.       Go to step 6.         • Open circuit in the scase, repair the harmess between ignition coil & ignitor assembly.       • Poor contact in the following:         • Open circuit in this case, repair the harmess between ign					
<ul> <li>ignitor assembly.</li> <li>in this case, repair the following:</li> <li>Open circuit in harness between ignition coil &amp; ignitor assembly connector and engine ground.</li> <li><i>Connector &amp; terminal</i></li> <li>(E31) No. 3 (+) — Engine ground (-):</li> <li>(E32) No. 3 (+) — Engine ground (-):</li> <li>(E33) No. 3 (+) — Engine ground (-):</li> <li>(E34) No. 3 (+) — Engine ground (-):</li> <li>(E34) No. 3 (+) — Engine ground (-):</li> <li>(E33) No. 3 (+) — Engine ground (-):</li> <li>(E33) No. 3 (+) — Engine ground (-):</li> <li>(Connector &amp; terminal</li> <li>(a) The second of the provided of th</li></ul>					
<ul> <li>Turn the ignition switch to ON.</li> <li>4)Measure the power supply voltage between ignition coil &amp; ignitor assembly connector and engine ground.</li> <li><i>Connector &amp; terminal</i> (<i>E31</i>) No. 3 (+) — Engine ground (-): (<i>E32</i>) No. 3 (+) — Engine ground (-): (<i>E33</i>) No. 3 (+) — Engine ground (-): (<i>E33</i>) No. 3 (+) — Engine ground (-): (<i>E34</i>) No. 2 — Engine ground: (<i>E33</i>) No. 3 — Engine ground: (<i>E33</i>) No. 3 — Engine ground: (<i>E33</i>) No. 4 — Engine ground: (<i>E33</i>) No. 5 — (<i>E34</i>) No. 1: (<i>E34</i>) No. 1: (<i>E35</i>) No. 15 — (<i>E33</i>) No. 15</li></ul>					
<ul> <li>4)Measure the power supply voltage between ignition coil &amp; ignitor assembly connector and engine ground.</li> <li>Connector &amp; terminal (E31) No. 3 (+) — Engine ground (-): (E32) No. 3 (+) — Engine ground (-): (E33) No. 3 (+) — Engine ground (-): (E34) No. 3 (+) — Engine ground (-): (C34) No. 2 — Engine ground: (C34) No. 2 — Engine ground: (E34) No. 1 = (C34) No. 1 : (B133) No. 15 — (E34) No. 1 : (B133) No. 15 — (E34) No. 1 : (B133) No. 17 — (E32) No. 1 : (B133) No. 17 — (E32) No. 1 : (Connector &amp; terminal (B133) No. 17 — (E32) No. 1 : (Connector &amp; terminal (B133) No. 17 — (E32) No. 1 : (Connector A terminal (B133) No. 17 — (E32) No. 1 : (Connector A terminal (B133) No. 17 — (E32) No. 1 : (Connector A terminal (B133) No. 17 — (E32) No. 1 : (Connector A terminal (B133) No. 15 — (E33) No. 1 : (C33) No. 1 : (C33</li></ul>					
engine ground.       ignition coil & ignitor assembly, and ignition switch (E32) No. 3 (+) — Engine ground (-): (E33) No. 3 (+) — Engine ground (-): (E34) No. 3 (+) — Engine ground: (E34) No. 2 (-) — Engine ground: (E34) No. 2 — Engine ground: (E34) No. 2 — Engine ground: (E33) No. 2 — Engine ground: (E33) No. 2 — Engine ground: (E33) No. 2 — Engine ground: (E34) No. 2 — Engine ground: (E34) No. 2 — Engine ground: (E33) No. 2 — Engine ground: (E34) No. 1 = (E135) No. 15 — (E34) No. 1 : (B135) No. 15 — (E34) No. 1 : (B135) No. 17 — (E32) No. 1 : (B135) No. 17 — (E32) No. 1 : (E33) No. 1 : (E33) No. 17 — (E32) No. 1 : (E33) No. 1 = (E33) No. 1 : (E33) No. 1 = (E33) No. 1 : (E33) No. 1 = (E33) No. 1 = (E33) No. 1 : (E33) No. 1 =				<ul> <li>Open circuit in</li> </ul>	
Connector & terminal       (E31) No. 3 (+) — Engine ground (-):       (E32) No. 3 (+) — Engine ground (-):       (E32) No. 3 (+) — Engine ground (-):       (Connector & Poor contact in coupling connector         4       CHECK HARNESS OF IGNITION COLL & IG- (E33) No. 3 (+) — Engine ground (-):       Is the resistance less than 5       Go to step 5.       Repair the har- ness and connector tor.         1) Turn the ignition switch to OFF.       2) Measure the resistance between ignition coil & ignitor assembly connector and engine ground.       Is the resistance less than 5       Go to step 5.       Repair the har- ness and connec- tor.         Connector & terminal (E33) No. 2 — Engine ground: (E34) No. 2 — Engine ground:       Is the resistance less than 1       Go to step 6.       NOTE: In this case, repair the following:         5       CHECK HARNESS BETWEEN ECM AND IG- NITION COLL & IGNITOR ASSEMBLY CON- NECTOR.       Is the resistance less than 1       Go to step 6.       Repair the har- ness and connec- tor.         3) Disconnect the connector from E0M.       3) Disconnect the connector from E0M.       Is the resistance less than 1       Go to step 6.       Repair the har- ness and connec- tor.         4) Measure the resistance of harness between ECM and ignition coil & ignitor coil & ignitor coil & ignitor assembly con- nector.       Is the resistance less than 1       Go to step 6.       Repair the har- ness and connec- tor.         4) Measure the resistance of harness between ECM and ignition coil & ignitor coil & ignitor assembly connec- tor.       Signito					
<ul> <li>(E31) No. 3 (+) — Engine ground (-): (E32) No. 3 (+) — Engine ground (-): (E33) No. 3 (+) — Engine ground (-):</li> <li>CHECK HARNESS OF IGNITION COLL &amp; IG- NITOR ASSEMBLY GROUND CIRCUIT. 1)Turn the ignition switch to OFF.</li> <li>2)Measure the resistance between ignition coil &amp; ignitor assembly connector and engine ground.</li> <li>Connector &amp; terminal (E32) No. 2 — Engine ground: (E32) No. 2 — Engine ground: (E33) No. 5 — (E34) No. 1: (B135) No. 15 — (E34) No. 1: (B135) No. 17 — (E32) No. 1: (B135) No. 17 — (E33) No. 1: (C10) Call Call Call Call Call Call Call</li></ul>					
(E32) No. 3 (+) - Engine ground (-):       connector       • Poor contact in coupling connector         (E33) No. 3 (+) - Engine ground (-):       endoted and connector       • Poor contact in coupling connectors         4       CHECK HARNESS OF IGNITION COIL & IG- NITOR ASSEMBLY GROUND CIRCUIT.       Is the resistance less than 5       Go to step 5.       Repair the harness and connector.         1)Turn the ignition switch to OFF.       2)Measure the resistance between ignition coil       Is the resistance less than 5       Go to step 5.       Repair the harness and connector.         (E31) No. 2 - Engine ground:       (E31) No. 2 - Engine ground:       Is the resistance less than 1       NOTE:       In this case, repair the following:         • Open circuit in (E33) No. 2 - Engine ground:       Is the resistance less than 1       Go to step 6.       Repair the harnes between ignition coil & ignitor case mbly connector and engine ground:         5       CHECK HARNESS BETWEEN ECM AND IG- NITION COIL & IGNITOR ASSEMBLY CONNECTOR.       Is the resistance less than 1       Go to step 6.       Repair the harness between ignition coil & ignitor assembly connector.         1)Turn the ignition switch to OFF.       2)Disconnect the connector from ECM.       Is the resistance less than 1       Go to step 6.       Repair the harness between igniton coil & ignitor assembly connector.         4)Measure the resistance of harness between ECM and ignition coil & ignitor assembly connector.       Connector for E(33) No. 15 - (E33) No. 15 - (E33					
(E34) No. 3 (+) — Engine ground (-):       coupling connectors         4       CHECK HARNESS OF IGNITION COIL & IG- NITOR ASSEMBLY GROUND CIRCUIT. 1)Turn the ignition switch to OFF. 2)Measure the resistance between ignition coil & ignitor assembly connector and engine ground.       is the resistance less than 5 Ω?       Go to step 5.       Repair the har- ness and connec- tor.         Connector & terminal (E31) No. 2 — Engine ground: (E33) No. 2 — Engine ground: (E34) No. 1 = (E34) No. 1: (B135) No. 15 — (E34) No. 1: (B135) No. 16 — (E32) No. 1: (B135) No. 16 — (E32) No. 1: (B135) No. 16 — (E32) No. 1: (B135) No. 17 — (E32) No. 1:       Is the resistance less than 1 Ω?       Go to step 6.       Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between ECM and ignition coil & ignitor ooil & ignitor (B135) No. 16 — (E32) No. 1: (B135) No. 17 — (E32) No. 1:				-	
4       CHECK HARNESS OF IGNITION COIL & IG- NITOR ASSEMBLY GROUND CIRCUIT. 1) Turn the ignition switch to OFF. 2) Measure the resistance between ignition coil & ignitor assembly connector and engine ground. (E32) No. 2 — Engine ground: (E34) No. 2 — Engine ground: (E35) No. 15 — (E34) No. 1: (B135) No. 15 — (E34) No. 1: (B135) No. 17 — (E34) No. 1: (B135) No. 15 — (B135) No. 15 = (B135) No. 15				<ul> <li>Poor contact in</li> </ul>	
<ul> <li>CHECK HARNESS OF IGNITION COIL &amp; IGNITON ASSEMBLY GROUND CIRCUIT.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Measure the resistance between ignition coil &amp; ignitor assembly connector and engine ground.</li> <li>Connector &amp; terminal         <ul> <li>(E31) No. 2 — Engine ground:</li> <li>(E32) No. 2 — Engine ground:</li> <li>(E33) No. 2 — Engine ground:</li> <li>(E34) No. 2 — Engine ground:</li> <li>(Bastron Coll &amp; IGNITOR ASSEMBLY CON-MECTOR.</li> <li>(1) Turn the ignition switch to OFF.</li> <li>(2) Disconnect the connector from ECM.</li> <li>(3) Disconnect the connector from ignition coil &amp; ignitor assembly.</li> <li>(4) Measure the resistance of harness between ECM and ignition coil &amp; ignitor assembly connector.</li> <li>(2) Connector &amp; terminal</li> <li>(B135) No. 15 — (E34) No. 1:</li> <li>(B135) No. 17 — (E34) No. 1:</li> <li>(B135) No</li></ul></li></ul>	(E34) No. 3 (+) — Engine ground (–):				
NITOR ASSEMBLY GROUND CIRCUIT.       Ω?       ness and connectors.         1)Turn the ignition switch to OFF.       2)Measure the resistance between ignition coil & ignitor assembly connector and engine ground.       NOTE:       NOTE:         2)Measure the resistance between ignition coil & ignitor assembly connector and engine ground:       • Open circuit in harness between       NOTE:       NOTE:         (E31) No. 2 - Engine ground:       • Open circuit in harness between       ignitor assembly connector and engine ground:       • Open circuit in harness between         (E33) No. 2 - Engine ground:       Is the resistance less than 1       Go to step 6.       Repair the harness and connector.         5       CHECK HARNESS BETWEEN ECM AND IG-NECTOR.       Is the resistance less than 1       Go to step 6.       Repair the harness and connector.         1)Turn the ignition switch to OFF.       2)Disconnect the connector from ECM.       Ω?       NOTE:       In this case, repair the following:         3)Disconnect the connector from ginition coil & ignitor assembly.       4)Measure the resistance of harness between ECM and ignition coil & ignitor assembly connector.       NOTE:       NOTE:         6)Disconnect the terminal       In this case, repair       Hellowing:       • Open circuit in harness between ECM and ignition coil & ignitor assembly connector.         Connector & terminal       In this case, repair       Hellowing:       • Open circuit in harness between ECM and igni					
<ul> <li>1)Turn the ignition switch to OFF.</li> <li>2)Measure the resistance between ignition coil &amp; ignitor assembly connector and engine ground.</li> <li>Connector &amp; terminal         <ul> <li>(E31) No. 2 — Engine ground:</li> <li>(E32) No. 2 — Engine ground:</li> <li>(E33) No. 2 — Engine ground:</li> <li>(E33) No. 2 — Engine ground:</li> <li>(E34) No. 2 — Engine ground:</li> <li>(B35) No. 15 — (E34) No. 1:</li> <li>(B135) No. 15 — (E34) No. 1:</li> <li>(B135) No. 17 — (E32) No. 1:</li> </ul> </li> </ul>			Go to step 5.		
2)Measure the resistance between ignition coil & ignitor assembly connector and engine ground.       NOTE: In this case, repair the following:         Connector & terminal (E31) No. 2 — Engine ground: (E32) No. 2 — Engine ground: (E33) No. 2 — Engine ground: (E34) No. 2 — Engine ground: (E35) No. 10 — (E34) No. 11: (B135) No. 15 — (E34) No. 1: (B135) No. 16 — (E33) No. 1: (B135) No. 17 — (E32) No. 1:       Is the resistance less than 1 (B135) No. 17 — (E32) No. 1: (B135) No. 17 — (E32) No. 1:       NOTE: In this case, repair the following: In this case, repair the following: (B135) No. 17 — (E32) No. 1:		52 ?			
& ignitor assembly connector and engine ground.       In this case, repair the following:         Connector & terminal (E31) No. 2 — Engine ground: (E33) No. 2 — Engine ground: (E33) No. 2 — Engine ground: (E34) No. 2 — Engine ground:       • Open circuit in harness between ignition coil & igni- tor assembly con- nector and engine grounding terminal         5       CHECK HARNESS BETWEEN ECM AND IG- NITION COIL & IGNITOR ASSEMBLY CON- NECTOR.       Is the resistance less than 1 Ω?       Go to step 6.       Repair the har- ness and connec- tor.         1)Turn the ignition switch to OFF.       2)Disconnect the connector from ECM.       Ω?       NOTE: In this case, repair the following:         3)Disconnect the connector from ECM.       3)Disconnect the connector from spinition coil & ignitor assembly.       Ameress between ECM and ignition coil & ignitor assembly con- nector.       ECM and ignition coil & ignitor assembly connec- tor.         Connector & terminal (B135) No. 15 — (E34) No. 1: (B135) No. 17 — (E32) No. 1:       Fersital No. 15 — (E34) No. 1: (B135) No. 17 — (E32) No. 1:       Poor contact in coupling connector					
<ul> <li>Connector &amp; terminal         <ul> <li>(E31) No. 2 — Engine ground:</li> <li>(E32) No. 2 — Engine ground:</li> <li>(E33) No. 2 — Engine ground:</li> <li>(E33) No. 2 — Engine ground:</li> <li>(E34) No. 2 — Engine ground:</li> <li>(E34) No. 2 — Engine ground:</li> <li>(E34) No. 2 — Engine ground:</li> </ul> </li> <li>5 CHECK HARNESS BETWEEN ECM AND IG- NITION COIL &amp; IGNITOR ASSEMBLY CON- NECTOR.         <ul> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from ECM.</li> <li>3)Disconnect the connector from ECM.</li> <li>3)Disconnect the connector from ECM.</li> <li>4)Measure the resistance of harness between ECM and ignition coil &amp; ignitor assembly connector.</li> <li>Connector &amp; terminal</li></ul></li></ul>				-	
<ul> <li>(E31) No. 2 — Engine ground: (E32) No. 2 — Engine ground: (E33) No. 2 — Engine ground: (E33) No. 2 — Engine ground: (E34) No. 2 — Engine ground:</li> <li>5 CHECK HARNESS BETWEEN ECM AND IG- INITION COIL &amp; IGNITOR ASSEMBLY CON- NECTOR.</li> <li>1) Turn the ignition switch to OFF.</li> <li>2) Disconnect the connector from ECM.</li> <li>3) Disconnect the connector from ECM.</li> <li>3) Disconnect the connector from ginition coil &amp; ignitor assembly.</li> <li>4) Measure the resistance of harness between ECM and ignition coil &amp; ignitor assembly con- nector.</li> <li>Connector &amp; terminal (B135) No. 15 — (E34) No. 1: (B135) No. 17 — (E32) No. 1:</li> </ul>	•				
(E32) No. 2 — Engine ground: (E33) No. 2 — Engine ground: (E34) No. 2 — Engine ground:       ignition coil & igni- tor assembly con- nector and engine grounding terminal         5       CHECK HARNESS BETWEEN ECM AND IG- NITION COIL & IGNITOR ASSEMBLY CON- NECTOR.       Is the resistance less than 1 Ω?       Go to step 6.       Repair the har- ness and connec- tor.         1)Turn the ignition switch to OFF.       Ω?       NOTE: In this case, repair the following:       NOTE: NOTE: In this case, repair the following:         3)Disconnect the connector from ECM.       3)Disconnect the connector from ginition coil & ignitor assembly.       A)Measure the resistance of harness between ECM and ignition coil & ignitor assembly con- nector.       Connector & terminal (B135) No. 15 — (E34) No. 1: (B135) No. 16 — (E33) No. 1: (B135) No. 17 — (E32) No. 1:       EXAMPLE       EXAMPLE					
(E33) No. 2 — Engine ground:       tor assembly connector and engine grounding terminal         5       CHECK HARNESS BETWEEN ECM AND IG-NITION COIL & IGNITOR ASSEMBLY CONNECTOR.       Is the resistance less than 1       Go to step 6.       Repair the harness and connector.         1)Turn the ignition switch to OFF.       2)Disconnect the connector from ECM.       Ω?       NOTE:       NOTE:         2)Disconnect the connector from ignition coil & ignitor assembly.       4)Measure the resistance of harness between ECM and ignition coil & ignitor assembly connector.       • Open circuit in harness between ECM and ignition coil & ignitor assembly connector.         Connector & terminal (B135) No. 15 — (E34) No. 1:       (B135) No. 15 — (E32) No. 1:       • Opor contact in coupling connector					
(E34) No. 2 — Engine ground:       nector and engine grounding terminal         5       CHECK HARNESS BETWEEN ECM AND IG- NITION COIL & IGNITOR ASSEMBLY CON- NECTOR.       Is the resistance less than 1       Go to step 6.       Repair the har- ness and connec- tor.         1)Turn the ignition switch to OFF.       2)Disconnect the connector from ECM.       Ω?       NOTE: In this case, repair the following:       NOTE: Open circuit in harness between ECM and ignition coil & ignitor assembly con- nector.       Open circuit in harness between ECM and ignition coil & ignitor       No. 15 — (E34) No. 1: (B135) No. 15 — (E33) No. 1: (B135) No. 17 — (E32) No. 1:       To repair the second connector					
5       CHECK HARNESS BETWEEN ECM AND IG-NITION COIL & IGNITOR ASSEMBLY CONNECTOR.       Is the resistance less than 1       Go to step 6.       Repair the harness and connector.         1)Turn the ignition switch to OFF.       2)Disconnect the connector from ECM.       O?       NOTE:       In this case, repair         3)Disconnect the connector from ignition coil & ignitor assembly.       4)Measure the resistance of harness between ECM and ignition coil & ignitor assembly connector.       • Open circuit in harness between ECM and ignition coil & ignitor assembly connector.       ECM and ignition coil & ignitor assembly connector.         Connector & terminal       (B135) No. 15 — (E34) No. 1:       • Open circuit in coupling connector       • Poor contact in coupling connector         (B135) No. 16 — (E33) No. 17       • (B135) No. 17 — (E32) No. 1:       • Poor contact in coupling connector       • Poor contact in coupling connector					
NITION COIL & IGNITOR ASSEMBLY CON- NECTOR.Ω?ness and connec- tor.1)Turn the ignition switch to OFF.NOTE: In this case, repair the following:NOTE: In this case, repair the following:3)Disconnect the connector from ignition coil & ignitor assembly.• Open circuit in harness between ECM and ignition coil & ignitor assembly con- nector.• Open circuit in harness between ECM and ignition coil & ignitor assembly con- nector.Connector & terminal (B135) No. 15 — (E34) No. 1: (B135) No. 16 — (E33) No. 1: (B135) No. 17 — (E32) No. 1:• Poor contact in coupling connector				-	
NECTOR.tor.1)Turn the ignition switch to OFF.NOTE:2)Disconnect the connector from ECM.In this case, repair3)Disconnect the connector from ignition coil &the following:ignitor assembly.• Open circuit in4)Measure the resistance of harness betweenECM and ignition coil & ignitor assembly connector.Connector & terminalECM and ignition(B135) No. 15 — (E34) No. 1:the following:(B135) No. 16 — (E33) No. 1:• Poor contact in(B135) No. 17 — (E32) No. 1:• Coupling connector		Is the resistance less than 1	Go to step 6.		1
<ul> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from ECM.</li> <li>3)Disconnect the connector from ignition coil &amp; ignitor assembly.</li> <li>4)Measure the resistance of harness between ECM and ignition coil &amp; ignitor assembly connector.</li> <li>Connector &amp; terminal <ul> <li>(B135) No. 15 — (E34) No. 1:</li> <li>(B135) No. 16 — (E33) No. 1:</li> <li>(B135) No. 17 — (E32) No. 1:</li> </ul> </li> </ul>		Ω?			
<ul> <li>2)Disconnect the connector from ECM.</li> <li>3)Disconnect the connector from ignition coil &amp; ignitor assembly.</li> <li>4)Measure the resistance of harness between ECM and ignition coil &amp; ignitor assembly connector.</li> <li>Connector &amp; terminal <ul> <li>(B135) No. 15 — (E34) No. 1:</li> <li>(B135) No. 16 — (E33) No. 1:</li> <li>(B135) No. 17 — (E32) No. 1:</li> </ul> </li> </ul>					
<ul> <li>3)Disconnect the connector from ignition coil &amp; ignitor assembly.</li> <li>4)Measure the resistance of harness between ECM and ignition coil &amp; ignitor assembly connector.</li> <li>Connector &amp; terminal <ul> <li>(B135) No. 15 — (E34) No. 1:</li> <li>(B135) No. 16 — (E33) No. 1:</li> <li>(B135) No. 17 — (E32) No. 1:</li> </ul> </li> </ul>				-	
<ul> <li>ignitor assembly.</li> <li>Open circuit in harness between ECM and ignition coil &amp; ignitor assembly connector.</li> <li>Connector &amp; terminal (B135) No. 15 — (E34) No. 1: (B135) No. 16 — (E33) No. 1: (B135) No. 17 — (E32) No. 1:</li> </ul>					
<ul> <li>4)Measure the resistance of harness between</li> <li>ECM and ignition coil &amp; ignitor assembly connector.</li> <li>Connector &amp; terminal</li> <li>(B135) No. 15 — (E34) No. 1:</li> <li>(B135) No. 16 — (E33) No. 1:</li> <li>(B135) No. 17 — (E32) No. 1:</li> </ul>	· · ·			-	
nector.       coil & ignitor         Connector & terminal       assembly connector         (B135) No. 15 — (E34) No. 1:       tor         (B135) No. 16 — (E33) No. 1:       • Poor contact in coupling connector				harness between	
Connector & terminal         assembly connector           (B135) No. 15 — (E34) No. 1:         tor           (B135) No. 16 — (E33) No. 1:         • Poor contact in coupling connector					
(B135) No. 15 — (E34) No. 1:       tor         (B135) No. 16 — (E33) No. 1:       • Poor contact in         (B135) No. 17 — (E32) No. 1:       coupling connector					
(B135) No. 16 — (E33) No. 1: (B135) No. 17 — (E32) No. 1: coupling connector				-	
(B135) No. 17 — (E32) No. 1: coupling connector					
(B135) No. 18 — (E31) No. 1:	(B135) No. 17 — (E32) No. 1:				
(5755) NO. 10 – (551) NO. 1.	(B135) No. 18 — (E31) No. 1:				

### DIAGNOSTICS FOR ENGINE STARTING FAILURE VOILL

	Step	Check	Yes	Dro No Sti
6	CHECK HARNESS BETWEEN ECM AND IG- NITION COIL & IGNITOR ASSEMBLY CON- NECTOR. Measure the resistance of harness between ECM and engine ground. <i>Connector &amp; terminal:</i> (B135) No. 15 — Engine ground: (B135) No. 16 — Engine ground: (B135) No. 17 — Engine ground: (B135) No. 18 — Engine ground:	Is the resistance more than 1 MΩ?	Go to step 7.	Repair the ground short circuit in har- ness between ECM and ignition coil & ignitor assembly connec- tor.
7	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact in ECM connector.	Replace the igni- tion coil and ignitor assembly.

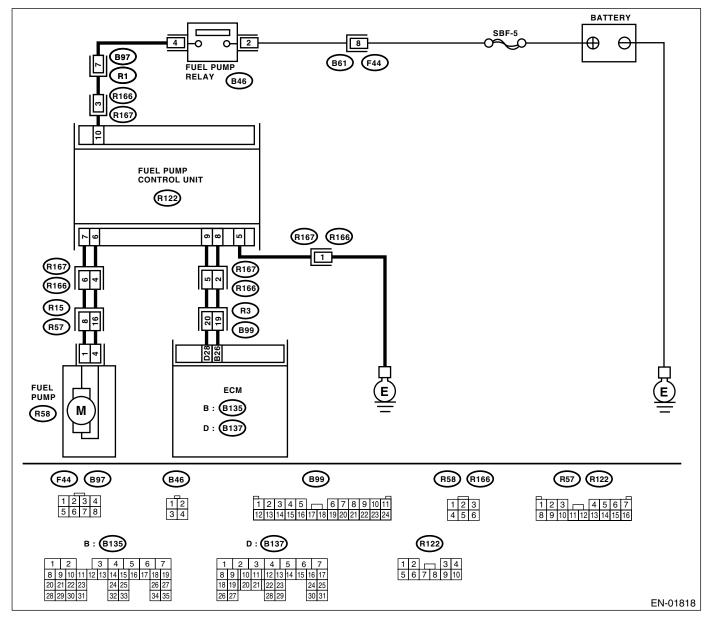
**ENGINE (DIAGNOSTICS)** 

#### E: FUEL PUMP CIRCUIT

#### CAUTION:

'is Studios ESAL After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

• WIRING DIAGRAM:



Step	Check	Yes	No
1 CHECK OPERATING SOUND OF FUEL PUMP. Make sure that the fuel pump is in operation for 2 seconds when turning ignition switch to ON. NOTE: Fuel pump operation check can also be execut ed using the Subaru Select Monitor. For the procedure, refer to "Compulsory Valve Operation Check Mode". <ref. en(sti)-43,<br="" to="">Compulsory Valve Operation Check Mode.&gt;</ref.>		Check the fuel injector circuit. <ref. en(sti)-<br="" to="">64, FUEL INJEC- TOR CIRCUIT, Diagnostics for Engine Starting Failure.&gt;</ref.>	Display the DTC. <ref. en(sti)-<br="" to="">34, OPERATION, Read Diagnostic Trouble Code (DTC).&gt;</ref.>

011

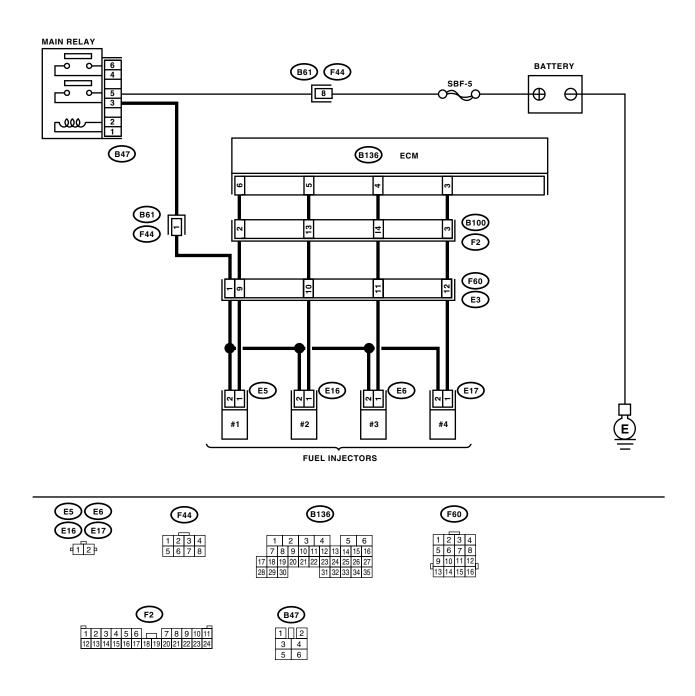
ENGINE (DIAGNOSTICS)

#### F: FUEL INJECTOR CIRCUIT

#### **CAUTION:**

by Eris Studios OR RESALE After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

• WIRING DIAGRAM:



# DIAGNOSTICS FOR ENGINE STARTING FAILURE ENGINE (DIAGNOSTICS)

			For	Y Eris	י ר
	Step	Check	Yes	Pro No Sti	Id:
1	CHECK OPERATION OF EACH FUEL INJEC- TOR. While cranking the engine, check that each fuel injector emits "operating" sound. Use a sound scope or attach a screwdriver to injector for this check.	"operating" sound?	Check the fuel pressure. <ref. to<br="">ME(STi)-27, INSPECTION, Fuel Pressure.&gt;</ref.>	Go to step 2.	Idios
2	CHECK POWER SUPPLY TO EACH FUEL INJECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from fuel injector. 3)Turn the ignition switch to ON. 4)Measure the power supply voltage between the fuel injector terminal and engine ground. <i>Connector &amp; terminal</i> #1 (E5) No. 2 (+) — Engine ground (-): #2 (E16) No. 2 (+) — Engine ground (-): #3 (E6) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-):	Is the voltage more than 10 V?		Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between main relay and fuel injector connector • Poor contact in main relay con- nector • Poor contact in coupling connector • Poor contact in fuel injector con- nector	
3	CHECK HARNESS BETWEEN ECM AND FUEL INJECTOR CONNECTOR. 1)Disconnect the connector from ECM. 2)Measure the resistance of harness between ECM and fuel injector connector. Connector & terminal (B136) No. 6 — (E5) No. 1: (B136) No. 5 — (E16) No. 1: (B136) No. 4 — (E6) No. 1: (B136) No. 3 — (E6) No. 1:	Is the resistance less than 1 $\Omega$ ?		Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between ECM and fuel injector connector • Poor contact in coupling connector	
4	CHECK HARNESS BETWEEN ECM AND FUEL INJECTOR CONNECTOR. Measure the resistance of harness between ECM and fuel injector connector. Connector & terminal (B136) No. 6 — Chassis ground: (B136) No. 5 — Chassis ground: (B136) No. 4 — Chassis ground: (B136) No. 3 — Chassis ground:	Is the resistance less than 1 $\Omega$ ?	Repair the ground short circuit in har- ness between ECM and fuel injector connector.		
5	<ul> <li>CHECK EACH FUEL INJECTOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Measure the resistance between each fuel injector terminals.</li> <li>Terminals</li> <li>No. 1 — No. 2:</li> </ul>	Is the resistance 5 — 20 $\Omega$ ?	Go to step <b>6</b> .	Replace the faulty fuel injector.	
6	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	contact in ÉCM connector.	Inspection using "General Diagnos- tic Table". <ref. to<br="">EN(STi)-359, INSPECTION, General Diagnos- tic Table.&gt;</ref.>	

LIST OF DIAGNOSTIC TROUBLE CODE (DTC)

### 17.List of Diagnostic Trouble Code (DTC)

### A: LIST

17.Lis <sup>:</sup> A: LIS <sup>-</sup>	t of Diagnostic Troub <sup>T</sup>	INOSTIC TROUBLE CODE (DTC)
DTC	Item	Index
P0011	A Camshaft Position-Timing Over- Advanced or System Performance (Bank 1)	<ref. "a"="" camshaft="" dtc="" en(sti)-73,="" p0011="" position-timing<br="" to="" —="">OVER-ADVANCED OR SYSTEM PERFORMANCE (BANK 1) —, Diagnos- tic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0021	A Camshaft Position-Timing Over- Advanced or System Performance (Bank 2)	<ref. "a"="" camshaft="" dtc="" en(sti)-74,="" p0021="" position-timing<br="" to="" —="">OVER-ADVANCED OR SYSTEM PERFORMANCE (BANK 2) —, Diagnos- tic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0030	HO2S Heater Control Circuit (Bank 1 Sensor 1)	<ref. circuit<br="" control="" dtc="" en(sti)-75,="" heater="" ho2s="" p0030="" to="" —="">(BANK 1 SENSOR 1) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0031	HO2S Heater Control Circuit Low (Bank 1 Sensor 1)	<ref. circuit<br="" control="" dtc="" en(sti)-77,="" heater="" ho2s="" p0031="" to="" —="">LOW (BANK 1 SENSOR 1) —, Diagnostic Procedure with Diagnostic Trou- ble Code (DTC).&gt;</ref.>
P0032	HO2S Heater Control Circuit High (Bank 1 Sensor 1)	<ref. circuit<br="" control="" dtc="" en(sti)-80,="" heater="" ho2s="" p0032="" to="" —="">HIGH (BANK 1 SENSOR 1) —, Diagnostic Procedure with Diagnostic Trou- ble Code (DTC).&gt;</ref.>
P0037	HO2S Heater Control Circuit Low (Bank 1 Sensor 2)	<ref. circuit<br="" control="" dtc="" en(sti)-82,="" heater="" ho2s="" p0037="" to="" —="">LOW (BANK 1 SENSOR 2) —, Diagnostic Procedure with Diagnostic Trou- ble Code (DTC).&gt;</ref.>
P0038	HO2S Heater Control Circuit High (Bank 1 Sensor 2)	<ref. circuit<br="" control="" dtc="" en(sti)-85,="" heater="" ho2s="" p0038="" to="" —="">HIGH (BANK 1 SENSOR 2) —, Diagnostic Procedure with Diagnostic Trou- ble Code (DTC).&gt;</ref.>
P0068	Manifold Absolute Pressure/Baro- metric Pressure Circuit Range/Per- formance	<ref. <br="" absolute="" dtc="" en(sti)-87,="" manifold="" p0068="" pressure="" to="" —="">BAROMETRIC PRESSURE CIRCUIT RANGE/PERFORMANCE —, Diag- nostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0101	Mass or Volume Air Flow Circuit Range/Performance	<ref. air="" cir-<br="" dtc="" en(sti)-89,="" flow="" mass="" or="" p0101="" to="" volume="" —="">CUIT RANGE/PERFORMANCE —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0102	Mass or Volume Air Flow Circuit Low Input	<ref. air="" cir-<br="" dtc="" en(sti)-91,="" flow="" mass="" or="" p0102="" to="" volume="" —="">CUIT LOW INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0103	Mass or Volume Air Flow Circuit High Input	<ref. air="" cir-<br="" dtc="" en(sti)-94,="" flow="" mass="" or="" p0103="" to="" volume="" —="">CUIT HIGH INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0107	Manifold Absolute Pressure/Baro- metric Pressure Circuit Low Input	<ref. <br="" absolute="" dtc="" en(sti)-96,="" manifold="" p0107="" pressure="" to="" —="">BAROMETRIC PRESSURE CIRCUIT LOW INPUT —, Diagnostic Proce- dure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0108	Manifold Absolute Pressure/Baro- metric Pressure Circuit High Input	<ref. <br="" absolute="" dtc="" en(sti)-98,="" manifold="" p0108="" pressure="" to="" —="">BAROMETRIC PRESSURE CIRCUIT HIGH INPUT —, Diagnostic Proce- dure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0111	Intake Air Temperature Circuit Range/Performance	<ref. air="" cir-<br="" dtc="" en(sti)-100,="" intake="" p0111="" temperature="" to="" —="">CUIT RANGE/PERFORMANCE —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0112	Intake Air Temperature Circuit Low Input	<ref. air="" cir-<br="" dtc="" en(sti)-102,="" intake="" p0112="" temperature="" to="" —="">CUIT LOW INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0113	Intake Air Temperature Circuit High Input	<ref. air="" cir-<br="" dtc="" en(sti)-104,="" intake="" p0113="" temperature="" to="" —="">CUIT HIGH INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0117	Engine Coolant Temperature Circuit Low Input	<ref. coolant="" dtc="" en(sti)-107,="" engine="" p0117="" temperature<br="" to="" —="">CIRCUIT LOW INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0118	Engine Coolant Temperature Circuit High Input	<ref. coolant="" dtc="" en(sti)-109,="" engine="" p0118="" temperature<br="" to="" —="">CIRCUIT HIGH INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>

# LIST OF DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

DTC	Item	Index OR DESTINATION SH
P0122	Throttle/Pedal Position Sensor/ Switch "A" Circuit Low Input	<ref. dtc="" en(sti)-112,="" p0122="" pedal="" position="" sen-<br="" throttle="" to="" —="">SOR/SWITCH "A" CIRCUIT LOW INPUT —, Diagnostic Procedure with</ref.>
P0123	Throttle/Pedal Position Sensor/ Switch "A" Circuit High Input	Diagnostic Trouble Code (DTC).> <ref. dtc="" en(sti)-115,="" p0123="" pedal="" position="" sen-<br="" throttle="" to="" —="">SOR/SWITCH "A" CIRCUIT HIGH INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0125	Insufficient Coolant Temperature for Closed Loop Fuel Control	<ref. coolant="" dtc="" en(sti)-119,="" insufficient="" p0125="" temper-<br="" to="" —="">ATURE FOR CLOSED LOOP FUEL CONTROL —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0128	Coolant Thermostat (Coolant Tem- perature Below Thermostat Regulat- ing Temperature)	<ref. (cool-<br="" coolant="" dtc="" en(sti)-121,="" p0128="" thermostat="" to="" —="">ANT TEMPERATURE BELOW THERMOSTAT REGULATING TEMPERA- TURE) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0129	Atmospheric Pressure Sensor Circuit Range/Performance	<ref. atmospheric="" dtc="" en(sti)-122,="" p0129="" pressure="" sen-<br="" to="" —="">SOR CIRCUIT RANGE/PERFORMANCE —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0131	O <sub>2</sub> Sensor Circuit Low Voltage (Bank 1 Sensor 1)	<ref. dtc="" en(sti)-123,="" o<sub="" p0131="" to="" —="">2 SENSOR CIRCUIT LOW VOLT- AGE (BANK 1 SENSOR 1) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0132	O <sub>2</sub> Sensor Circuit High Voltage (Bank 1 Sensor 1)	<ref. dtc="" en(sti)-125,="" o<sub="" p0132="" to="" —="">2 SENSOR CIRCUIT HIGH VOLT- AGE (BANK 1 SENSOR 1) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0133	O <sub>2</sub> Sensor Circuit Slow Response (Bank 1 Sensor 1)	<ref. dtc="" en(sti)-127,="" o<sub="" p0133="" to="" —="">2 SENSOR CIRCUIT SLOW RESPONSE (BANK 1 SENSOR 1) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0134	O <sub>2</sub> Sensor Circuit No Activity Detected (Bank 1 Sensor 1)	<ref. dtc="" en(sti)-129,="" o<sub="" p0134="" to="" —="">2 SENSOR CIRCUIT NO ACTIVITY DETECTED (BANK 1 SENSOR 1) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0137	O <sub>2</sub> Sensor Circuit Low Voltage (Bank 1 Sensor 2)	<ref. dtc="" en(sti)-131,="" o<sub="" p0137="" to="" —="">2 SENSOR CIRCUIT LOW VOLT- AGE (BANK 1 SENSOR 2) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0138	O <sub>2</sub> Sensor Circuit High Voltage (Bank 1 Sensor 2)	<ref. dtc="" en(sti)-134,="" o<sub="" p0138="" to="" —="">2 SENSOR CIRCUIT HIGH VOLT- AGE (BANK 1 SENSOR 2) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0139	O <sub>2</sub> Sensor Circuit Slow Response (Bank 1 Sensor 2)	<ref. dtc="" en(sti)-137,="" o<sub="" p0139="" to="" —="">2 SENSOR CIRCUIT SLOW RESPONSE (BANK 1 SENSOR 2) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0171	System too Lean (Bank 1)	<ref. (bank="" 1)="" dtc="" en(sti)-138,="" lean="" p0171="" system="" to="" too="" —="" —,<br="">Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0172	System too Rich (Bank 1)	<ref. (bank="" 1)="" dtc="" en(sti)-139,="" p0172="" rich="" system="" to="" too="" —="" —,<br="">Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0181	Fuel Temperature Sensor "A" Circuit Range/Performance	<ref. "a"<br="" dtc="" en(sti)-142,="" fuel="" p0181="" sensor="" temperature="" to="" —="">CIRCUIT RANGE/PERFORMANCE —, Diagnostic Procedure with Diagnos- tic Trouble Code (DTC).&gt;</ref.>
P0182	Fuel Temperature Sensor "A" Circuit Low Input	<ref. "a"<br="" dtc="" en(sti)-144,="" fuel="" p0182="" sensor="" temperature="" to="" —="">CIRCUIT LOW INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0183	Fuel Temperature Sensor "A" Circuit High Input	<ref. "a"<br="" dtc="" en(sti)-146,="" fuel="" p0183="" sensor="" temperature="" to="" —="">CIRCUIT HIGH INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0222	Throttle/Pedal Position Sensor/ Switch "B" Circuit Low Input	<ref. dtc="" en(sti)-149,="" p0222="" pedal="" position="" sen-<br="" throttle="" to="" —="">SOR/SWITCH "b" CIRCUIT LOW INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0223	Throttle/Pedal Position Sensor/ Switch "B" Circuit High Input	<ref. dtc="" en(sti)-152,="" p0223="" pedal="" position="" sen-<br="" throttle="" to="" —="">SOR/SWITCH "b" CIRCUIT HIGH INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0230	Fuel Pump Primary Circuit	<ref. circuit="" dtc="" en(sti)-156,="" fuel="" p0230="" primary="" pump="" to="" —="" —,<br="">Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>

### LIST OF DIAGNOSTIC TROUBLE CODE (DTC) 011

DTC	Item	Index OR PESTS SH
P0244	Turbo/Super Charger Wastegate Solenoid "A" Range/Performance	<ref. charger="" dtc="" en(sti)-159,="" p0244="" super="" to="" turbo="" waste-<br="" —="">GATE SOLENOID "A" RANGE/PERFORMANCE —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0245	Turbo/Super Charger Wastegate Solenoid "A" Low	<ref. charger="" dtc="" en(sti)-161,="" p0245="" super="" to="" turbo="" waste-<br="" —="">GATE SOLENOID "A" LOW —, Diagnostic Procedure with Diagnostic Trou- ble Code (DTC).&gt;</ref.>
P0246	Turbo/Super Charger Wastegate Solenoid "A" High	<ref. charger="" dtc="" en(sti)-163,="" p0246="" super="" to="" turbo="" waste-<br="" —="">GATE SOLENOID "A" HIGH —, Diagnostic Procedure with Diagnostic Trou- ble Code (DTC).&gt;</ref.>
P0301	Cylinder 1 misfire detected	<ref. 1="" cylinder="" detected="" dtc="" en(sti)-164,="" misfire="" p0301="" to="" —="" —<br="">, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0302	Cylinder 2 misfire detected	<ref. 2="" cylinder="" detected="" dtc="" en(sti)-164,="" misfire="" p0302="" to="" —="" —<br="">, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0303	Cylinder 3 misfire detected	<ref. 3="" cylinder="" detected="" dtc="" en(sti)-164,="" misfire="" p0303="" to="" —="" —<br="">, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0304	Cylinder 4 misfire detected	<ref. 4="" cylinder="" detected="" dtc="" en(sti)-165,="" misfire="" p0304="" to="" —="" —<br="">, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0327	Knock Sensor 1 Circuit Low Input (Bank 1 or Single Sensor)	<ref. 1="" circuit="" dtc="" en(sti)-170,="" knock="" low<br="" p0327="" sensor="" to="" —="">INPUT (BANK 1 OR SINGLE SENSOR) —, Diagnostic Procedure with Diag- nostic Trouble Code (DTC).&gt;</ref.>
P0328	Knock Sensor 1 Circuit High Input (Bank 1 or Single Sensor)	<ref. 1="" circuit="" dtc="" en(sti)-172,="" high<br="" knock="" p0328="" sensor="" to="" —="">INPUT (BANK 1 OR SINGLE SENSOR) —, Diagnostic Procedure with Diag- nostic Trouble Code (DTC).&gt;</ref.>
P0335	Crankshaft Position Sensor "A" Cir- cuit	<ref. crankshaft="" dtc="" en(sti)-174,="" p0335="" position="" sensor<br="" to="" —="">"A" CIRCUIT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0336	Crankshaft Position Sensor "A" Cir- cuit Range/Performance	<ref. crankshaft="" dtc="" en(sti)-176,="" p0336="" position="" sensor<br="" to="" —="">"A" CIRCUIT RANGE/PERFORMANCE —, Diagnostic Procedure with Diag- nostic Trouble Code (DTC).&gt;</ref.>
P0340	Camshaft Position Sensor "A" Circuit (Bank 1 or Single Sensor)	<ref. "a"<br="" camshaft="" dtc="" en(sti)-178,="" p0340="" position="" sensor="" to="" —="">CIRCUIT (BANK 1 OR SINGLE SENSOR) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0345	Camshaft Position Sensor "A" Circuit (Bank 2)	<ref. "a"<br="" camshaft="" dtc="" en(sti)-180,="" p0345="" position="" sensor="" to="" —="">CIRCUIT (BANK 2) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0420	Catalyst System Efficiency Below Threshold (Bank 1)	<ref. catalyst="" dtc="" efficiency<br="" en(sti)-182,="" p0420="" system="" to="" —="">BELOW THRESHOLD (BANK 1) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0442	Evaporative Emission Control Sys- tem Leak Detected (small leak)	<ref. con-<br="" dtc="" emission="" en(sti)-184,="" evaporative="" p0442="" to="" —="">TROL SYSTEM LEAK DETECTED (SMALL LEAK) —, Diagnostic Proce- dure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0447	Evaporative Emission Control Sys- tem Vent Control Circuit Open	<ref. con-<br="" dtc="" emission="" en(sti)-188,="" evaporative="" p0447="" to="" —="">TROL SYSTEM VENT CONTROL CIRCUIT OPEN —, Diagnostic Proce- dure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0448	Evaporative Emission Control Sys- tem Vent Control Circuit Shorted	<ref. con-<br="" dtc="" emission="" en(sti)-191,="" evaporative="" p0448="" to="" —="">TROL SYSTEM VENT CONTROL CIRCUIT SHORTED —, Diagnostic Pro- cedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0451	Evaporative Emission Control Sys- tem Pressure Sensor Range/Perfor- mance	<ref. con-<br="" dtc="" emission="" en(sti)-193,="" evaporative="" p0451="" to="" —="">TROL SYSTEM PRESSURE SENSOR RANGE/PERFORMANCE —, Diag- nostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0452	Evaporative Emission Control Sys- tem Pressure Sensor Low Input	<ref. con-<br="" dtc="" emission="" en(sti)-195,="" evaporative="" p0452="" to="" —="">TROL SYSTEM PRESSURE SENSOR LOW INPUT —, Diagnostic Proce- dure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0453	Evaporative Emission Control Sys- tem Pressure Sensor High Input	<ref. con-<br="" dtc="" emission="" en(sti)-198,="" evaporative="" p0453="" to="" —="">TROL SYSTEM PRESSURE SENSOR HIGH INPUT —, Diagnostic Proce- dure with Diagnostic Trouble Code (DTC).&gt;</ref.>

# LIST OF DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

DTC	Item	Index OR DESTINATION STATE	Lal.
P0456	Evaporative Emission Control Sys- tem Leak Detected (very small leak)	IROL SYSTEM LEAK DETECTED (VERY SMALL LEAK) —, Diagnostic	'di
P0457	Evaporative Emission Control Sys- tem Leak Detected (fuel cap loose/ off)	Procedure with Diagnostic Trouble Code (DTC).> <ref. con-<br="" dtc="" emission="" en(sti)-205,="" evaporative="" p0457="" to="" —="">TROL SYSTEM LEAK DETECTED (FUEL CAP LOOSE/OFF) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P0458	Evaporative Emission Control Sys- tem Purge Control Valve Circuit Low	<ref. con-<br="" dtc="" emission="" en(sti)-209,="" evaporative="" p0458="" to="" —="">TROL SYSTEM PURGE CONTROL VALVE CIRCUIT LOW —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P0459	Evaporative Emission Control Sys- tem Purge Control Valve Circuit High	<ref. con-<br="" dtc="" emission="" en(sti)-211,="" evaporative="" p0459="" to="" —="">TROL SYSTEM PURGE CONTROL VALVE CIRCUIT HIGH —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P0461	Fuel Level Sensor Circuit Range/ Performance	<ref. circuit<br="" dtc="" en(sti)-213,="" fuel="" level="" p0461="" sensor="" to="" —="">RANGE/PERFORMANCE —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P0462	Fuel Level Sensor Circuit Low Input	<ref. circuit<br="" dtc="" en(sti)-216,="" fuel="" level="" p0462="" sensor="" to="" —="">LOW INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P0463	Fuel Level Sensor Circuit High Input	<ref. circuit<br="" dtc="" en(sti)-220,="" fuel="" level="" p0463="" sensor="" to="" —="">HIGH INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P0464	Fuel Level Sensor Circuit Intermittent	<ref. circuit<br="" dtc="" en(sti)-224,="" fuel="" level="" p0464="" sensor="" to="" —="">INTERMITTENT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P0483	Cooling Fan Rationality Check	<ref. cooling="" dtc="" en(sti)-227,="" fan="" p0483="" rationality<br="" to="" —="">CHECK —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P0502	Vehicle Speed Sensor Circuit Low Input	<ref. circuit<br="" dtc="" en(sti)-230,="" p0502="" sensor="" speed="" to="" vehicle="" —="">LOW INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P0503	Vehicle Speed Sensor Intermittent/ Erratic/High	<ref. dtc="" en(sti)-232,="" inter-<br="" p0503="" sensor="" speed="" to="" vehicle="" —="">MITTENT/ERRATIC/HIGH —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P0506	Idle Control System RPM Lower Than Expected	<ref. control="" dtc="" en(sti)-234,="" idle="" p0506="" rpm<br="" system="" to="" —="">LOWER THAN EXPECTED —, Diagnostic Procedure with Diagnostic Trou- ble Code (DTC).&gt;</ref.>	
P0507	Idle Control System RPM Higher Than Expected	<ref. control="" dtc="" en(sti)-237,="" idle="" p0507="" rpm<br="" system="" to="" —="">HIGHER THAN EXPECTED —, Diagnostic Procedure with Diagnostic Trou- ble Code (DTC).&gt;</ref.>	
P0512	Starter Request Circuit	<ref. circuit="" dtc="" en(sti)-240,="" p0512="" request="" starter="" to="" —="" —,<br="">Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P0519	Idle Control System Malfunction (Fail-Safe)	<ref. control="" dtc="" en(sti)-243,="" idle="" malfunc-<br="" p0519="" system="" to="" —="">TION (FAIL-SAFE) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P0604	Internal Control Module Random Access Memory (RAM) Error	<ref. control="" dtc="" en(sti)-246,="" internal="" module<br="" p0604="" to="" —="">RANDOM ACCESS MEMORY (RAM) ERROR —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P0605	Internal Control Module Read Only Memory (ROM) Error	<ref. control="" dtc="" en(sti)-248,="" internal="" module<br="" p0605="" to="" —="">READ ONLY MEMORY (ROM) ERROR —, Diagnostic Procedure with Diag- nostic Trouble Code (DTC).&gt;</ref.>	
P0607	Control Module Performance	<ref. control="" dtc="" en(sti)-249,="" module="" p0607="" perfor-<br="" to="" —="">MANCE —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P0638	Throttle Actuator Control Range/Per- formance (Bank 1)	<ref. actuator="" control<br="" dtc="" en(sti)-251,="" p0638="" throttle="" to="" —="">RANGE/PERFORMANCE (BANK 1) —, Diagnostic Procedure with Diagnos- tic Trouble Code (DTC).&gt;</ref.>	
P0691	Cooling Fan 1 Control Circuit Low	<ref. 1="" circuit<br="" control="" cooling="" dtc="" en(sti)-252,="" fan="" p0691="" to="" —="">LOW —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	

### LIST OF DIAGNOSTIC TROUBLE CODE (DTC) 0111

DTC	ltem	Index
P0692	Cooling Fan 1 Control Circuit High	Ref. to EN(STi)-255, DTC P0692 — COOLING FAN 1 CONTROL CIRCUIT HIGH —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0851	Neutral Switch Input Circuit Low	<ref. circuit<br="" dtc="" en(sti)-258,="" input="" neutral="" p0851="" switch="" to="" —="">LOW —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P0852	Neutral Switch Input Circuit High	<ref. circuit<br="" dtc="" en(sti)-260,="" input="" neutral="" p0852="" switch="" to="" —="">HIGH —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P1086	Tumble Generated Valve Position Sensor 2 Circuit Low	<ref. dtc="" en(sti)-262,="" generated="" p1086="" posi-<br="" to="" tumble="" valve="" —="">TION SENSOR 2 CIRCUIT LOW —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P1087	Tumble Generated Valve Position Sensor 2 Circuit High	<ref. dtc="" en(sti)-265,="" generated="" p1087="" posi-<br="" to="" tumble="" valve="" —="">TION SENSOR 2 CIRCUIT HIGH —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P1088	Tumble Generated Valve Position Sensor 1 Circuit Low	<ref. dtc="" en(sti)-267,="" generated="" p1088="" posi-<br="" to="" tumble="" valve="" —="">TION SENSOR 1 CIRCUIT LOW —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P1089	Tumble Generated Valve Position Sensor 1 Circuit High	<ref. dtc="" en(sti)-270,="" generated="" p1089="" posi-<br="" to="" tumble="" valve="" —="">TION SENSOR 1 CIRCUIT HIGH —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P1090	Tumble Generated Valve System 1 (Valve Open)	<ref. dtc="" en(sti)-272,="" generated="" p1090="" sys-<br="" to="" tumble="" valve="" —="">TEM 1 (VALVE OPEN) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P1091	Tumble Generated Valve System 1 (Valve Close)	<ref. dtc="" en(sti)-272,="" generated="" p1091="" sys-<br="" to="" tumble="" valve="" —="">TEM 1 (VALVE CLOSE) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P1092	Tumble Generated Valve System 2 (Valve Open)	<ref. dtc="" en(sti)-273,="" generated="" p1092="" sys-<br="" to="" tumble="" valve="" —="">TEM 2 (VALVE OPEN) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P1093	Tumble Generated Valve System 2 (Valve Close)	<ref. dtc="" en(sti)-273,="" generated="" p1093="" sys-<br="" to="" tumble="" valve="" —="">TEM 2 (VALVE CLOSE) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P1094	Tumble Generated Valve Signal 1 Circuit Malfunction (Open)	<ref. dtc="" en(sti)-274,="" generated="" p1094="" sig-<br="" to="" tumble="" valve="" —="">NAL 1 CIRCUIT MALFUNCTION (OPEN) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P1095	Tumble Generated Valve Signal 1 Circuit Malfunction (Short)	<ref. dtc="" en(sti)-276,="" generated="" p1095="" sig-<br="" to="" tumble="" valve="" —="">NAL 1 CIRCUIT MALFUNCTION (SHORT) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P1096	Tumble Generated Valve Signal 2 Circuit Malfunction (Open)	<ref. dtc="" en(sti)-278,="" generated="" p1096="" sig-<br="" to="" tumble="" valve="" —="">NAL 2 CIRCUIT MALFUNCTION (OPEN) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P1097	Tumble Generated Valve Signal 2 Circuit Malfunction (Short)	<ref. dtc="" en(sti)-280,="" generated="" p1097="" sig-<br="" to="" tumble="" valve="" —="">NAL 2 CIRCUIT MALFUNCTION (SHORT) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P1110	Atmospheric Pressure Sensor Circuit Malfunction (Low Input)	<ref. atmospheric="" dtc="" en(sti)-282,="" p1110="" pressure="" sen-<br="" to="" —="">SOR CIRCUIT MALFUNCTION (LOW INPUT) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P1111	Atmospheric Pressure Sensor Circuit Malfunction (High Input)	Ref. to EN(STi)-282, DTC P1111 — ATMOSPHERIC PRESSURE SEN- SOR CIRCUIT MALFUNCTION (HIGH INPUT) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1152	O <sub>2</sub> Sensor Circuit Range/Perfor- mance (Low) (Bank1 Sensor1)	<ref. dtc="" en(sti)-283,="" o<sub="" p1152="" to="" —="">2 SENSOR CIRCUIT RANGE/PER- FORMANCE (LOW) (BANK1 SENSOR1) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P1153	O <sub>2</sub> Sensor Circuit Range/Perfor- mance (High) (Bank1 Sensor1)	<ref. dtc="" en(sti)-285,="" o<sub="" p1153="" to="" —="">2 SENSOR CIRCUIT RANGE/PER- FORMANCE (HIGH) (BANK1 SENSOR1) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>
P1160	Return Spring Failure	< Ref. to EN(STi)-286, DTC P1160 — RETURN SPRING FAILURE —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

# LIST OF DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

DTC	Item	Index OR DESTINATION	
P1400	Fuel Tank Pressure Control Solenoid Valve Circuit Low	<ref. control<br="" dtc="" en(sti)-287,="" fuel="" p1400="" pressure="" tank="" to="" —="">SOLENOID VALVE CIRCUIT LOW —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	lio
P1420	Fuel Tank Pressure Control Sol. Valve Circuit High	<ref. control<br="" dtc="" en(sti)-290,="" fuel="" p1420="" pressure="" tank="" to="" —="">SOL. VALVE CIRCUIT HIGH —, Diagnostic Procedure with Diagnostic Trou- ble Code (DTC).&gt;</ref.>	
P1443	Vent Control Solenoid Valve Func- tion Problem	<ref. control="" dtc="" en(sti)-292,="" p1443="" solenoid="" to="" valve<br="" vent="" —="">FUNCTION PROBLEM —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P1446	Fuel Tank Sensor Control Valve Cir- cuit Low	<ref. control<br="" dtc="" en(sti)-294,="" fuel="" p1446="" sensor="" tank="" to="" —="">VALVE CIRCUIT LOW —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P1447	Fuel Tank Sensor Control Valve Cir- cuit High	<ref. control<br="" dtc="" en(sti)-297,="" fuel="" p1447="" sensor="" tank="" to="" —="">VALVE CIRCUIT HIGH —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P1448	Fuel Tank Sensor Control Valve Range/Performance	<ref. control<br="" dtc="" en(sti)-299,="" fuel="" p1448="" sensor="" tank="" to="" —="">VALVE RANGE/PERFORMANCE —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P1491	Positive Crankcase Ventilation (Blow-by) Function Problem	<ref. crankcase="" dtc="" en(sti)-301,="" p1491="" positive="" to="" ventila-<br="" —="">TION (BLOW-BY) FUNCTION PROBLEM —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P1518	Starter Switch Circuit Low Input	<ref. (dtc).="" circuit="" code="" diagnostic="" dtc="" en(sti)-303,="" input="" low="" p1518="" procedure="" starter="" switch="" to="" trouble="" with="" —="" —,=""></ref.>	
P1560	Back-Up Voltage Circuit Malfunction	<ref. back-up="" circuit="" dtc="" en(sti)-306,="" mal-<br="" p1560="" to="" voltage="" —="">FUNCTION —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P2088	OCV Solenoid Valve Signal A Circuit Open (Bank 1)	<ref. a<br="" dtc="" en(sti)-309,="" ocv="" p2088="" signal="" solenoid="" to="" valve="" —="">CIRCUIT OPEN (BANK 1) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P2089	OCV Solenoid Valve Signal A Circuit Short (Bank 1)	<ref. a<br="" dtc="" en(sti)-311,="" ocv="" p2089="" signal="" solenoid="" to="" valve="" —="">CIRCUIT SHORT (BANK 1) —, Diagnostic Procedure with Diagnostic Trou- ble Code (DTC).&gt;</ref.>	
P2092	OCV Solenoid Valve Signal A Circuit Open (Bank 2)	<ref. a<br="" dtc="" en(sti)-313,="" ocv="" p2092="" signal="" solenoid="" to="" valve="" —="">CIRCUIT OPEN (BANK 2) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P2093	OCV Solenoid Valve Signal A Circuit Short (Bank 2)	<ref. a<br="" dtc="" en(sti)-315,="" ocv="" p2093="" signal="" solenoid="" to="" valve="" —="">CIRCUIT SHORT (BANK 2) —, Diagnostic Procedure with Diagnostic Trou- ble Code (DTC).&gt;</ref.>	
P2096	Post Catalyst Fuel Trim System Too Lean Bank 1	<ref. catalyst="" dtc="" en(sti)-317,="" fuel="" p2096="" post="" sys-<br="" to="" trim="" —="">TEM TOO LEAN BANK 1 —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P2097	Post Catalyst Fuel Trim System Too Rich Bank 1	<ref. catalyst="" dtc="" en(sti)-321,="" fuel="" p2097="" post="" sys-<br="" to="" trim="" —="">TEM TOO RICH BANK 1 —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P2101	Throttle Actuator Control Motor Cir- cuit Range/Performance	<ref. actuator="" control<br="" dtc="" en(sti)-325,="" p2101="" throttle="" to="" —="">MOTOR CIRCUIT RANGE/PERFORMANCE —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P2102	Throttle Actuator Control Motor Cir- cuit Low	<ref. actuator="" control<br="" dtc="" en(sti)-332,="" p2102="" throttle="" to="" —="">Motor Circuit Low —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P2103	Throttle Actuator Control Motor Cir- cuit High	<ref. actuator="" control<br="" dtc="" en(sti)-335,="" p2103="" throttle="" to="" —="">Motor Circuit High —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P2109	Throttle/Pedal Position Sensor A Minimum Stop Performance	<ref. dtc="" en(sti)-336,="" p2109="" pedal="" position="" sen-<br="" throttle="" to="" —="">SOR A MINIMUM STOP PERFORMANCE —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	

### LIST OF DIAGNOSTIC TROUBLE CODE (DTC) OIL

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DTC	Item	Index OR PESSIS	
P2122	Throttle/Pedal Position Sensor/ Switch "D" Circuit Low Input	<ref. dtc="" en(sti)-337,="" p2122="" pedal="" position="" sen-<br="" throttle="" to="" —="">SOR/SWITCH "d" CIRCUIT LOW INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P2123	Throttle/Pedal Position Sensor/ Switch "D" Circuit High Input	<ref. dtc="" en(sti)-340,="" p2123="" pedal="" position="" sen-<br="" throttle="" to="" —="">SOR/SWITCH "D" CIRCUIT HIGH INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P2127	Throttle/Pedal Position Sensor/ Switch "E" Circuit Low Input	<ref. dtc="" en(sti)-343,="" p2127="" pedal="" position="" sen-<br="" throttle="" to="" —="">SOR/SWITCH "E" CIRCUIT LOW INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P2128	Throttle/Pedal Position Sensor/ Switch "E" Circuit High Input	<ref. dtc="" en(sti)-346,="" p2128="" pedal="" position="" sen-<br="" throttle="" to="" —="">SOR/SWITCH "E" CIRCUIT HIGHT INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P2135	Throttle/Pedal Position Sensor/ Switch "A"/"B" Voltage Rationality	<ref. dtc="" en(sti)-349,="" p2135="" pedal="" position="" sen-<br="" throttle="" to="" —="">SOR/SWITCH "A"/"B" VOLTAGE RATIONALITY —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	
P2138	Throttle/Pedal Position Sensor/ Switch "D"/"E" Voltage Rationality	<ref. dtc="" en(sti)-354,="" p2138="" pedal="" position="" sen-<br="" throttle="" to="" —="">SOR/SWITCH "D"/"E" VOLTAGE RATIONALITY —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</ref.>	

18.Diagnostic Procedure with Diagnostic Trouble Code (DTC) A: DTC P0011 — "A" CAMSHAFT POSITION-TIMING OVER-ADVANCED OR SYSTEM PERFORMANCE (BANK 1) —

- DTC DETECTING CONDITION:
- Immediately at fault recognition
- TROUBLE SYMPTOM:
  - Engine stalls.
  - Erroneous idling

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt;</ref.>	Go to step 2.
2	CHECK CURRENT DATA. 1)Start the engine and let it idle. 2)Inspect the AVCS operating angle and variable valve timing solenoid valve duty output using Subaru Select Monitor and OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Is the AVCS operating angle more than approx. 0°C and the variable valve timing solenoid valve duty output more than approx. 10%?	Inspect the follow- ing items and repair or replace if necessary. • Engine oil (amount, con- tamination) • Oil pipe (clog) • variable valve timing solenoid valve (clog or contamination in oil passage, settling at spring, stuck at valve) • Intake cam- shaft (sludge, damage at camshaft) • Timing belt (timing mark aligning)	A temporary mal- function. Conduct the following to clean the oil pas- sage. Replace the engine oil and idle the engine for 5 minutes, then replace the oil filter and engine oil.

### B: DTC P0021 — "A" CAMSHAFT POSITION-TIMING OVER-ADVANCED OR SYSTEM PERFORMANCE (BANK 2) —

- DTC DETECTING CONDITION:
  - Immediately at fault recognition
- TROUBLE SYMPTOM:
  - Engine stalls.
  - Erroneous idling

#### **CAUTION:**

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

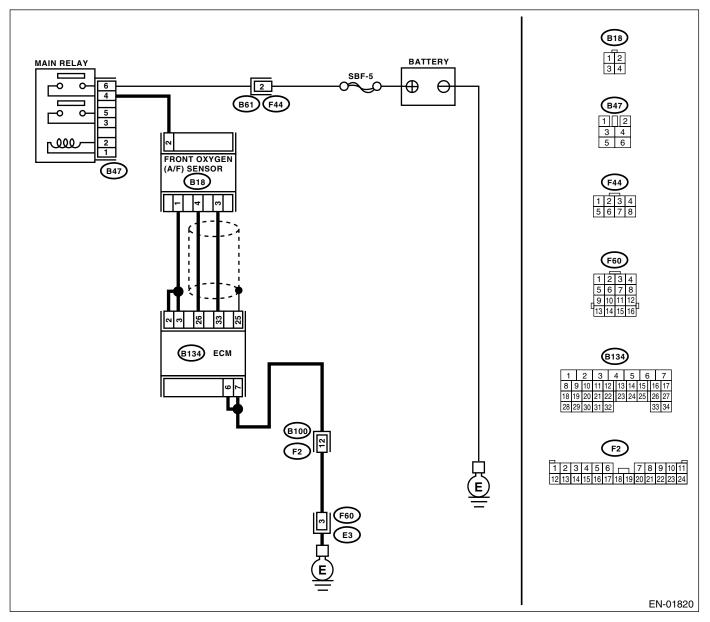
	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt;</ref.>	Go to step 2.
2	CHECK CURRENT DATA. 1)Start the engine and let it idle. 2)Inspect the AVCS operating angle and variable valve timing solenoid valve duty output using Subaru Select Monitor and OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Is the AVCS operating angle more than approx. 0°C and the variable valve timing solenoid valve duty output more than approx. 10%?	Inspect the follow- ing items and repair or replace if necessary. • Engine oil (amount, con- tamination) • Oil pipe (clog) • variable valve timing solenoid valve (clog or contamination in oil passage, settling at spring, stuck at valve) • Intake cam- shaft (sludge, damage at camshaft) • Timing belt (timing mark aligning)	5

## C: DTC P0030 — HO2S HEATER CONTROL CIRCUIT (BANK 1 SENSOR 1) -

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION < Ref. to GD(STi)-12, DTC P0030 HO2S HEATER CONTROL CIRCUIT</li> (BANK 1 SENSOR 1) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### **CAUTION:**

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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	Step	Check	Yes	PE Nos Sti	Int:
1	<ul> <li>CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC- TOR.</li> <li>1)Start the engine and warm-up engine.</li> <li>2)Turn the ignition switch to OFF.</li> <li>3)Disconnect the connectors from ECM and front oxygen (A/F) sensor.</li> <li>4)Measure the resistance of harness between ECM and front oxygen (A/F) sensor connector.</li> <li>Connector &amp; terminal (B134) No. 5 — (B18) No. 1: (B134) No. 4 — (B18) No. 1:</li> </ul>	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit in harness between ECM and front oxygen (A/F) sensor connector.	14/0
2	CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC- TOR. Measure the resistance of harness between ECM and front oxygen (A/F) sensor connector. <i>Connector &amp; terminal</i> (B134) No. 19 — (B18) No. 4: (B134) No. 29 — (B18) No. 3:	Is the resistance less than 1 $\Omega$ ?	Go to step 3.	Repair the open circuit in harness between ECM and front oxygen (A/F) sensor connector.	
3	CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC- TOR. Measure the resistance of harness between main relay and front oxygen (A/F) sensor con- nector. Connector & terminal (B47) No. 4 — (B18) No. 2:	Is the resistance less than 1 $\Omega$ ?	Go to step 4.	Repair the open circuit in harness between ECM and front oxygen (A/F) sensor connector.	
4	CHECK FRONT OXYGEN (A/F) SENSOR. Measure the resistance between front oxygen (A/F) sensor connector terminals. <i>Terminals</i> <i>No. 2 — No. 1:</i>	Is the resistance less than 5 $\Omega$ ?	Go to step 5.	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(STi)-37, Front Oxygen (A/F) Sen- sor.&gt;</ref.>	
5	CHECK POOR CONTACT. Check the poor contact in ECM and front oxy- gen (A/F) sensor connector.	front oxygen (A/F) sensor con-	Repair the poor contact in ECM or front oxygen (A/F) sensor connector.	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(STi)-37, Front Oxygen (A/F) Sen- sor.&gt;</ref.>	

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

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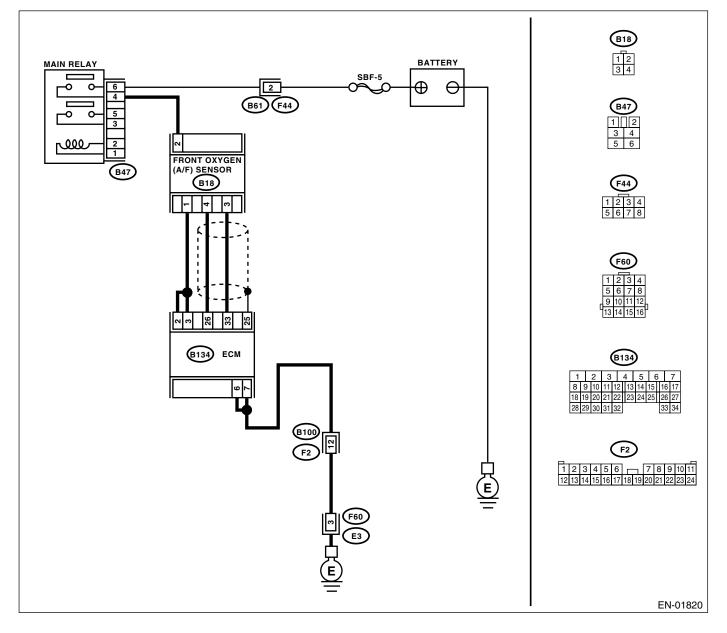
# D: DTC P0031 — HO2S HEATER CONTROL CIRCUIT LOW (BANK 1 SENSOR 1)

#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-14, DTC P0031 HO2S HEATER CONTROL CIRCUIT</li>
- LOW (BANK 1 SENSOR 1) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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	Step	Check	Yes	Pro Nos Sti	Int-
1	CHECK POWER SUPPLY TO FRONT OXY- GEN (A/F) SENSOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from front oxygen (A/F) sensor. 3)Turn the ignition switch to ON. 4)Measure the voltage between front oxygen (A/F) sensor connector and engine ground. <i>Connector &amp; terminal</i> (B18) No. 2 (+) — Engine ground (-):	Is the voltage more than 10 V?	Go to step 2.	Repair the power supply line. NOTE: In this case, repair the following: • Open circuit in harness between main relay and front oxygen (A/F) sensor connector • Poor contact in front oxygen (A/F) sensor connector • Poor contact in main relay con- nector	
2	CHECK GROUND CIRCUIT OF ECM. Measure the resistance of harness between ECM connector and chassis ground. <i>Connector &amp; terminal</i> (B134) No. 6 — Chassis ground: (B134) No. 7 — Chassis ground:	Is the resistance less than 5 Ω?	Go to step 3.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between ECM and engine ground cable • Poor contact in ECM connector • Poor contact in coupling connector	
3	<ul> <li>CHECK CURRENT DATA.</li> <li>1)Start the engine.</li> <li>2)Read the data of front oxygen (A/F) sensor heater current using Subaru Select Monitor or OBD-II general scan tool.</li> <li>NOTE:</li> <li>Subaru Select Monitor</li> <li>For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE".</li> <li><ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""></ref.></li> <li>OBD-II scan tool</li> <li>For detailed operation procedures, refer to the OBD-II scan tool Instruction Manual.</li> </ul>	Is the current more than 0.2 A?	contact in connec- tor. NOTE: In this case, repair the following: • Poor contact in front oxygen (A/F) sensor connector • Poor contact in ECM connector	Go to step 4.	
4	CHECK OUTPUT SIGNAL FROM ECM. 1)Start and idle the engine. 2)Measure the voltage between ECM connec- tor and chassis ground. Connector & terminal (B134) No. 2 (+) — Chassis ground (-): (B134) No. 3 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step <b>6</b> .	Go to step 5.	
5	CHECK OUTPUT SIGNAL FROM ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 2 (+) — Chassis ground (–): (B134) No. 3 (+) — Chassis ground (–):	Shake the ECM harness and connector, while monitoring value of voltage meter. Does the voltage change?	Repair the poor contact in ECM connector.	Go to step <b>6</b> .	

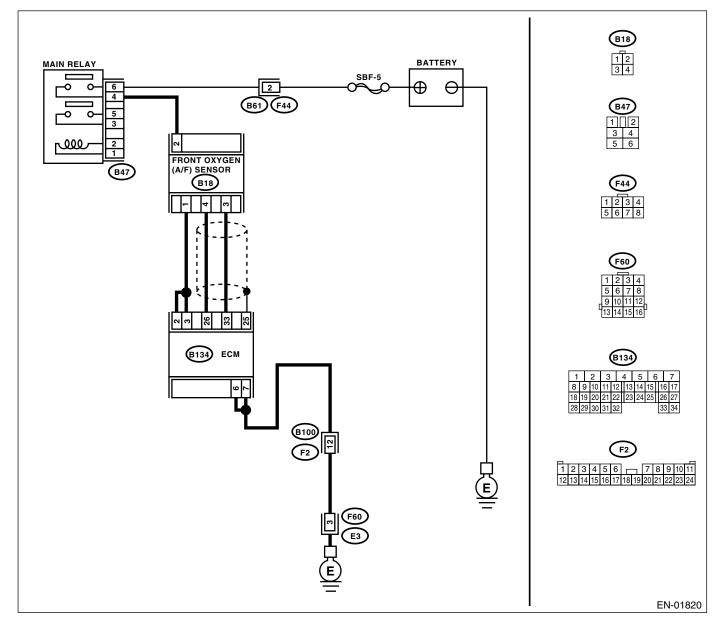
			- For	J Papi	-
1	Step	Check	Yes	Pro Nos Sti	Id.
6	CHECK FRONT OXYGEN (A/F) SENSOR.	Is the resistance less than 10	Repair the har-	Replace the front	'9/O
1	<ol> <li>Turn the ignition switch to OFF.</li> </ol>	Ω?	ness and connec-	oxygen (A/F) sen-	
1	2)Measure the resistance between front oxy-		tor.	sor. <ref. td="" to<=""><td></td></ref.>	
1	gen (A/F) sensor connector terminals.			FU(STi)-37, Front	
1	Terminals		In this case, repair	r Oxygen (A/F) Sen-	
1	No. 2 — No. 1:		the following:	sor.>	
1			<ul> <li>Open or ground</li> </ul>		
1			short circuit in har-		
1			ness between		
1			front oxygen (A/F)		
1			sensor and ECM		
1			connector		
1			<ul> <li>Poor contact in</li> </ul>		
1			front oxygen (A/F)		
1			sensor connector		
1			<ul> <li>Poor contact in</li> </ul>		
1			ECM connector		

### E: DTC P0032 — HO2S HEATER CONTROL CIRCUIT HIGH (BANK 1 SENSOR 1) —

- DTC DETECTING CONDITION:
  - Immediately at fault recognition
  - GENERAL DESCRIPTION < Ref. to GD(STi)-16, DTC P0032 HO2S HEATER CONTROL CIRCUIT
  - HIGH (BANK 1 SENSOR 1) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



			V For	Y Eni-	_
Γ	Step	Check	Yes	No St	Int.
1	CHECK OUTPUT SIGNAL FROM ECM. 1)Turn the ignition switch to ON. 2)Measure the voltage between ECM connec- tor and chassis ground. <i>Connector &amp; terminal</i> (B134) No. 2 (+) — Chassis ground (–): (B134) No. 3 (+) — Chassis ground (–):	Is the voltage more than 8 V?	Go to step <b>3</b> .	Go to step 2.	<sup>Idios</sup>
2	<ul> <li>CHECK FRONT OXYGEN (A/F) SENSOR HEATER CURRENT.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Repair the battery short circuit in harness between ECM and front oxygen (A/F) sensor connector.</li> <li>3)Turn the ignition switch to ON.</li> <li>4)Read the data of front oxygen (A/F) sensor heater current using Subaru Select Monitor or the OBD-II general scan tool.</li> <li>NOTE:</li> <li>Subaru Select Monitor</li> <li>For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE".</li> <li><ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""></ref.></li> <li>OBD-II general scan tool</li> <li>For detailed operation procedure, refer to the OBD-II general scan tool</li> </ul>	Is the current more than 2.3 A?	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	END	
3	CHECK OUTPUT SIGNAL FROM ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 2 (+) — Chassis ground (–): (B134) No. 3 (+) — Chassis ground (–):	Shake the ECM harness and connector, while monitoring value of voltage meter. Does the voltage change?	Repair the battery short circuit in har- ness between ECM and front oxygen (A/F) sen- sor connector.		

## F: DTC P0037 — HO2S HEATER CONTROL CIRCUIT LOW (BANK 1 SENSOR 2)

### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-18, DTC P0037 HO2S HEATER CONTROL CIRCUIT</li>

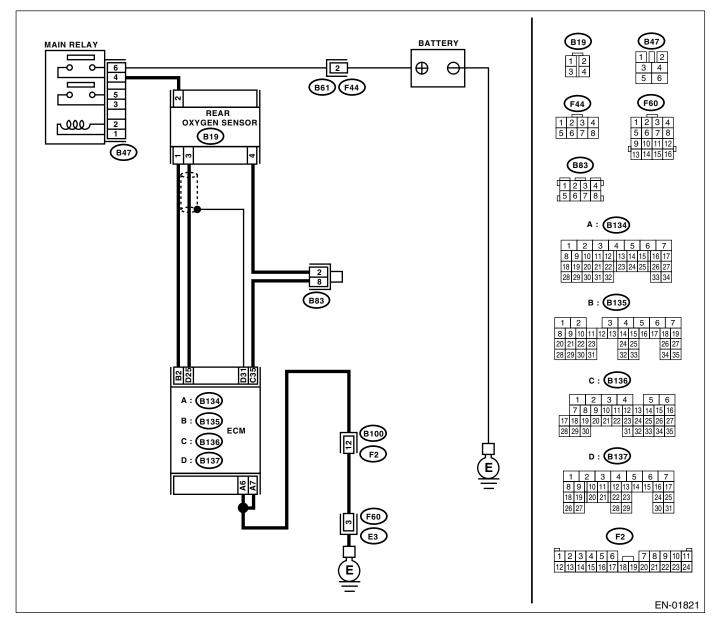
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LOW (BANK 1 SENSOR 2) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



		1	For	y Erie	1
	Step	Check	Yes	PEONO Sti	Id:
1	<ul> <li>CHECK GROUND CIRCUIT OF ECM.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from ECM.</li> <li>3)Measure the resistance of harness between ECM connector and chassis ground.</li> <li><i>Connector &amp; terminal</i> (B134) No. 6 — Chassis ground: (B134) No. 7 — Chassis ground:</li> </ul>	Is the resistance less than 5 Ω?	Go to step 2.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between ECM and engine ground cable • Poor contact in ECM connector • Poor contact in coupling connector	
2	CHECK CURRENT DATA. 1)Start the engine. 2)Read the data of rear oxygen sensor heater current using Subaru Select Monitor or OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Is the current more than 0.2 A?	Repair the con- nector. NOTE: In this case, repair the following: • Poor contact in rear oxygen sen- sor connector • Poor contact in rear oxygen sen- sor connecting harness connector • Poor contact in ECM connector	Go to step 3.	
3	<ul> <li>CHECK OUTPUT SIGNAL FROM ECM.</li> <li>1)Start and idle the engine.</li> <li>2)Measure the voltage between ECM connector and chassis ground.</li> <li>Connector &amp; terminal</li> <li>(B135) No. 2 (+) — Chassis ground (-):</li> </ul>	Is the voltage less than 1 V?	Go to step <b>6</b> .	Go to step 4.	
4	CHECK OUTPUT SIGNAL FROM ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B135) No. 2 (+) — Chassis ground (–):	Shake the ECM harness and connector, while monitoring value of voltage meter. Does the voltage change?	Repair the poor contact in ECM connector.	Go to step 5.	
5	<ul> <li>CHECK OUTPUT SIGNAL FROM ECM.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from rear oxygen sensor.</li> <li>3)Measure the voltage between ECM connector and chassis ground.</li> <li>Connector &amp; terminal (B135) No. 2 (+) — Chassis ground (-):</li> </ul>	Is the voltage less than 1 V?	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	Repair the battery short circuit in har- ness between ECM and rear oxy- gen sensor con- nector. After repair, replace the ECM. <ref. to<br="">FU(STi)-41, Engine Control Module (ECM).&gt;</ref.>	

## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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	Step	Check	Yes	Nos Sti
6	<ul> <li>CHECK POWER SUPPLY TO REAR OXY-GEN SENSOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from rear oxygen sensor.</li> <li>3)Turn the ignition switch to ON.</li> <li>4)Measure the voltage between rear oxygen sensor connector and engine ground or chassis ground.</li> <li>Connector &amp; terminal (B19) No. 2 (+) — Chassis ground (-):</li> </ul>	Is the voltage more than 10 V?	Go to step 7.	Repair the power supply line. NOTE: In this case, repair the following: • Open circuit in harness between main relay and rear oxygen sen- sor connector • Poor contact in rear oxygen sen- sor connector • Poor contact in coupling connector
7	CHECK REAR OXYGEN SENSOR. 1)Turn the ignition switch to OFF. 2)Measure the resistance between rear oxy- gen sensor connector terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance less than 30 Ω?	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between rear oxygen sen- sor and ECM con- nector • Poor contact in rear oxygen sen- sor connector • Poor contact in ECM connector • Poor contact in coupling connector	Replace the rear oxygen sensor. <ref. fu(sti)-<br="" to="">39, Rear Oxygen Sensor.&gt;</ref.>

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

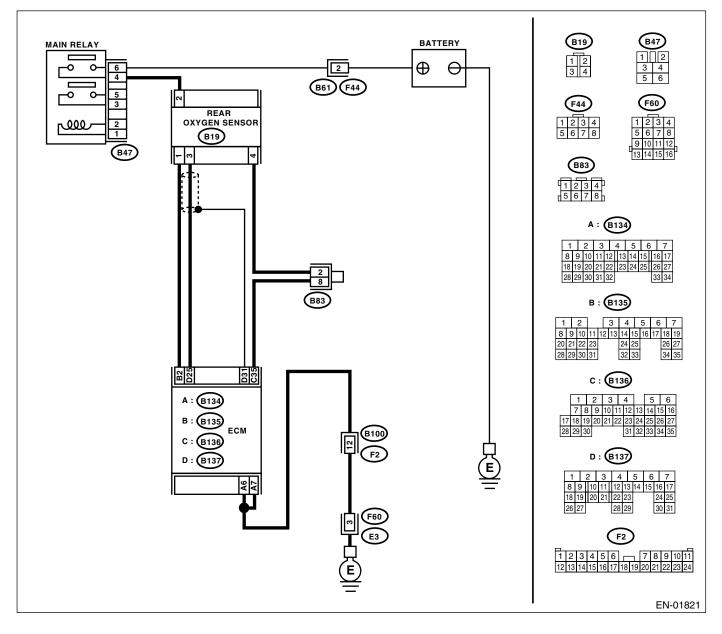
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### G: DTC P0038 — HO2S HEATER CONTROL CIRCUIT HIGH (BANK 1 SENSOR AL E

- DTC DETECTING CONDITION:
  - Immediately at fault recognition
  - GENERAL DESCRIPTION < Ref. to GD(STi)-20, DTC P0038 HO2S HEATER CONTROL CIRCUIT</li>
  - HIGH (BANK 1 SENSOR 2) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



#### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) No YOUL

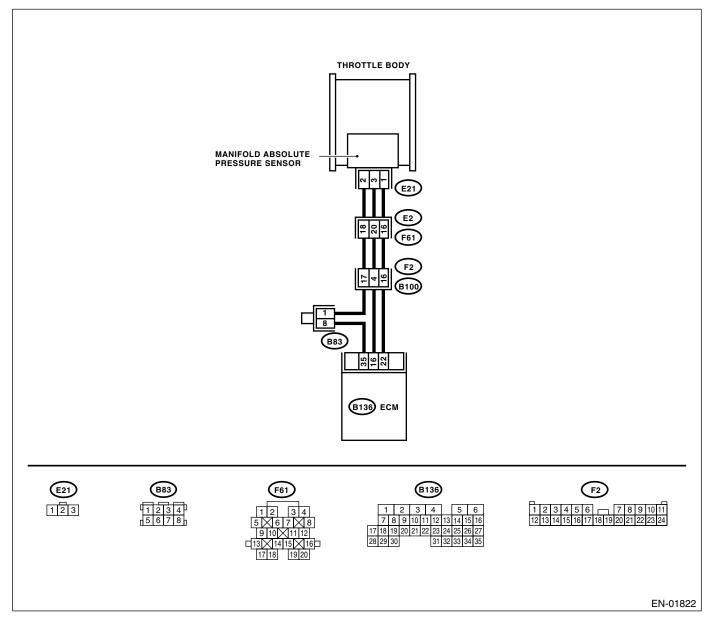
		For Y Fri				
	Step	Check	Yes	REC'No Sti	Id.	
1	CHECK INPUT SIGNAL FOR ECM. 1)Turn the ignition switch to OFF. 2)Measure the voltage between ECM connec- tor and chassis ground. Connector & terminal (B135) No. 2 (+) — Chassis ground (-):	Is the voltage more than 8 V?	Go to step 2.	Go to step 3.	<sup>1410</sup> S	
2	<ul> <li>CHECK CURRENT DATA.</li> <li>1)Repair the battery short circuit in harness between ECM and rear oxygen sensor connector.</li> <li>2)Turn the ignition switch to ON.</li> <li>3)Read the data of rear oxygen sensor heater current using Subaru Select Monitor or the OBD-II general scan tool.</li> <li>NOTE:</li> <li>•Subaru Select Monitor</li> <li>For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE".</li> <li><ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""></ref.></li> <li>•OBD-II general scan tool</li> <li>For detailed operation procedure, refer to the OBD-II general scan tool</li> </ul>	Is the current more than 7 A?	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	END		
3	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact in ECM connector.	END		

H: DTC P0068 — MANIFOLD ABSOLUTE PRESSURE/BAROMETRIC PRES-SURE CIRCUIT RANGE/PERFORMANCE —

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault
  - GENERAL DESCRIPTION <Ref. to GD(STi)-22, DTC P0068 MANIFOLD PRESSURE SENSOR RANGE/PERFORMANCE —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - · Failure of engine to start

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



### DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) Non YOUL

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	Step	Check	Yes	De Nos Stud
2	CHECK IDLE SWITCH SIGNAL. 1)Turn the ignition switch to ON. 2)Operate the LED operation mode for engine using Subaru Select Monitor. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "LED OPERATION MODE FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> CHECK ANY OTHER DTC ON DISPLAY.</ref.>	Does the LED of {Idle Switch Signal} come on?	Go to step 2.	Check the throttle position sensor cir- cuit. <ref. to<br="">EN(STi)-349, DTC P2135 — THROT- TLE/PEDAL POSI- TION SENSOR/ SWITCH "A"/"B" VOLTAGE RATIO- NALITY —, Diag- nostic Procedure with Diagnostic Trouble Code (DTC).&gt; NOTE: In this case, it is not necessary to inspect DTC P0106. Go to step <b>3</b>.</ref.>
L			vant DTC. "List of Diagnostic Trou- ble Code (DTC)". <ref. en(sti)-<br="" to="">66, List of Diag- nostic Trouble Code (DTC).&gt; NOTE: In this case, it is not necessary to inspect DTC P0106.</ref.>	
3	CHECK CONDITION OF MANIFOLD ABSO- LUTE PRESSURE SENSOR.	Is the manifold absolute pres- sure sensor installation bolt tightened securely?	Go to step 4.	Tighten the mani- fold absolute pres- sure sensor installation bolt securely.
4	CHECK CONDITION OF THROTTLE BODY.	Is the throttle body installation bolt tightened securely?	Replace the mani- fold absolute pres- sure sensor. <ref. to FU(STi)-31, Manifold Absolute Pressure Sensor.&gt;</ref. 	Tighten the throttle body installation bolt securely.

### Bre **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

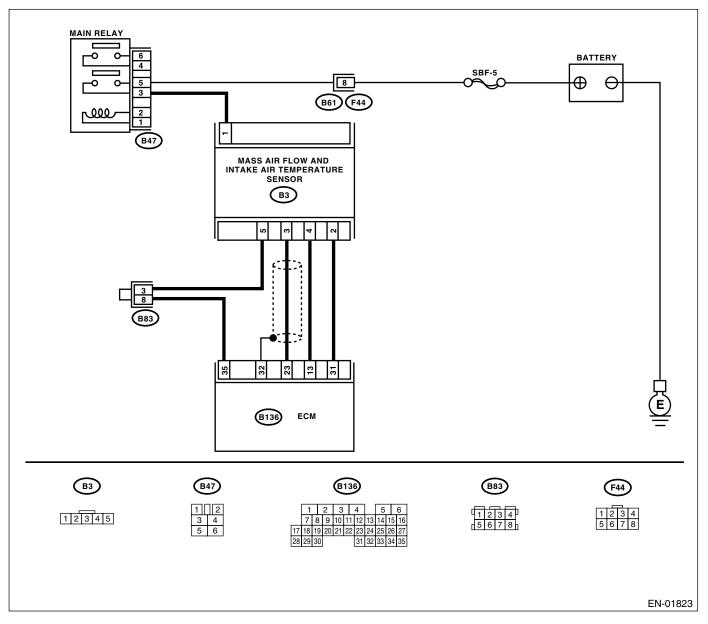
ENGINE (DIÀGNOSTICS)

### DTC P0101 — MASS OR VOLUME AIR FLOW CIRCUIT RANGE/PERFOR-1:

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault
  - GENERAL DESCRIPTION < Ref. to GD(STi)-24, DTC P0101 MASS OR VOLUME AIR FLOW CIR-</li>
  - CUIT RANGE/PERFORMANCE -, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
  - Engine stalls.
  - · Poor driving performance

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL

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Step	Check	Yes	Pro No Sti	Id.
1 CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt; NOTE: In this case, it is not necessary to inspect DTC P0101.</ref.>	sensor. <ref. to<br="">FU(STi)-30, Mass Air Flow and Intake Air Temper- ature Sensor.&gt;</ref.>	<sup>rq</sup> ios

## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

ENGINE (DIÀGNOSTICS)

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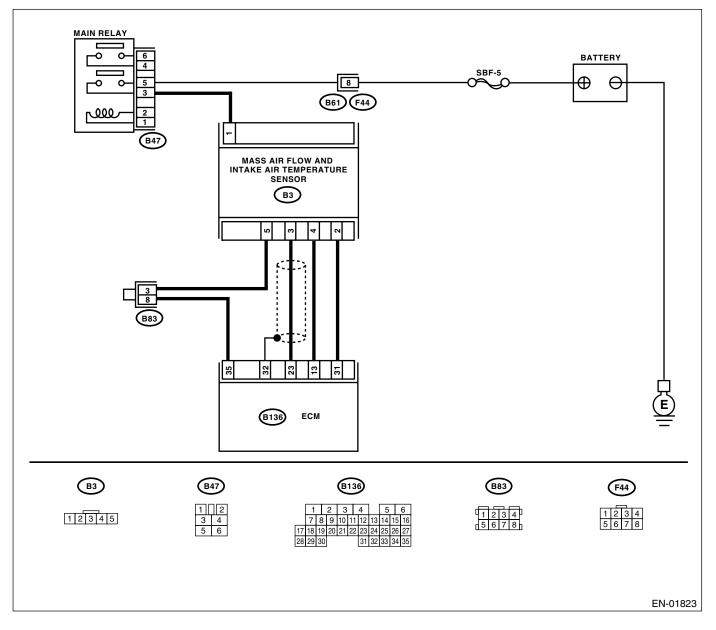
### J: DTC P0102 - MASS OR VOLUME AIR FLOW CIRCUIT LOW INPUT -

### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(STi)-27, DTC P0102 MASS OR VOLUME AIR FLOW CIR-CUIT LOW INPUT —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
  - Engine stalls.
  - Poor driving performance

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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Enter String				
Step	Check	Yes	REG'NO' Studi	
<ol> <li>CONNECT SUBARU SELECT MONITOR OR THE OBD-II GENERAL SCAN TOOL, AND READ DATA.         <ol> <li>Turn the ignition switch to OFF.</li> <li>Connect the Subaru Select Monitor or OBD-II general scan tool to data link connector.</li> <li>Turn the ignition switch to ON and Subaru Select Monitor or the OBD-II general scan tool switch to ON.</li> <li>Start the engine.</li> <li>Read the mass air flow sensor voltage using Subaru Select Monitor or OBD-II general scan tool.</li> </ol> </li> <li>NOTE:         <ol> <li>Subaru Select Monitor</li> <li>For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE".</li> <li>CBD-II general scan tool</li> </ol> </li> <li>For detailed operation procedures, refer to the OBD-II general scan tool</li> <li>For detailed operation procedures, refer to the "READ CURRENT DATA FOR ENGINE".</li> </ol> <li>OBD-II general scan tool</li> <li>For detailed operation procedures, refer to the OBD-II general scan tool</li>	Is the voltage 0.2 — 4.7 V?	Even if malfunc- tion indicator light lights up, the cir- cuit has returned to a normal condi- tion at this time. A temporary poor contact of the con- nector or harness may be the cause. Repair the har- ness or connector in the mass air flow sensor. NOTE: In this case, repair the following: • Open or ground short circuit in har- ness between mass air flow sen- sor and ECM con- nector • Poor contact in mass air flow sen- sor or ECM con- nector	Go to step 2.	05
2 CHECK INPUT SIGNAL FOR ECM. Measure the voltage between ECM connector and chassis ground while engine is idling. <i>Connector &amp; terminal</i> (B136) No. 23 (+) — Chassis ground (-):	Is the voltage less than 0.2 V?	Go to step 4.	Go to step 3.	
•	Shake the ECM harness and connector, while monitoring value of Subaru Select Moni- tor. Does the voltage change?	Repair the poor contact in ECM connector.	Contact your SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	
<ul> <li>CHECK POWER SUPPLY TO MASS AIR FLOW SENSOR.         <ol> <li>Turn the ignition switch to OFF.</li> <li>Disconnect the connector from mass air flow sensor.</li> <li>Turn the ignition switch to ON.</li> <li>Measure the voltage between mass air flow sensor connector and chassis ground.</li> <li>Connector &amp; terminal</li> <li>(B3) No. 1 (+) — Chassis ground (-):</li> </ol> </li> </ul>	Is the voltage more than 5 V?	Go to step <b>5</b> .	Repair the open circuit between mass air flow sen- sor and main relay.	

			For Frie		
	Step	Check	Yes	RE No Sti	Ist.
5	CHECK HARNESS BETWEEN ECM AND MASS AIR FLOW SENSOR CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Measure the resistance of harness between ECM and mass air flow sensor connector. Connector & terminal (B136) No. 23 — (B3) No. 3: (B136) No. 31 — (B3) No. 2: (B136) No. 35 — (B3) No. 5:	Is the resistance less than 1 $\Omega$ ?	Go to step <b>6</b> .	Repair the open circuit between ECM and mass air flow sensor con- nector.	1410
6	CHECK HARNESS BETWEEN ECM AND MASS AIR FLOW SENSOR CONNECTOR Measure the resistance of harness between ECM and chassis ground. <i>Connector &amp; terminal</i> (B136) No. 23 — Chassis ground: (B136) No. 31 — Chassis ground: (B136) No. 35 — Chassis ground:	Is the resistance more than 1 $M\Omega$ ?	Go to step <b>7</b> .	Repair the ground short circuit between ECM and mass air flow sen- sor connector.	
7	CHECK POOR CONTACT Check poor contact in mass air flow sensor connector.	Is there poor contact in mass air flow sensor connector?	Repair the poor contact in mass air flow sensor con- nector.	Replace the mass air flow and intake air temperature sensor. <ref. to<br="">FU(STi)-30, Mass Air Flow and Intake Air Temper- ature Sensor.&gt;</ref.>	

### K: DTC P0103 - MASS OR VOLUME AIR FLOW CIRCUIT HIGH INPUT -

### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(STi)-29, DTC P0103 MASS OR VOLUME AIR FLOW CIR-CUIT HIGH INPUT —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

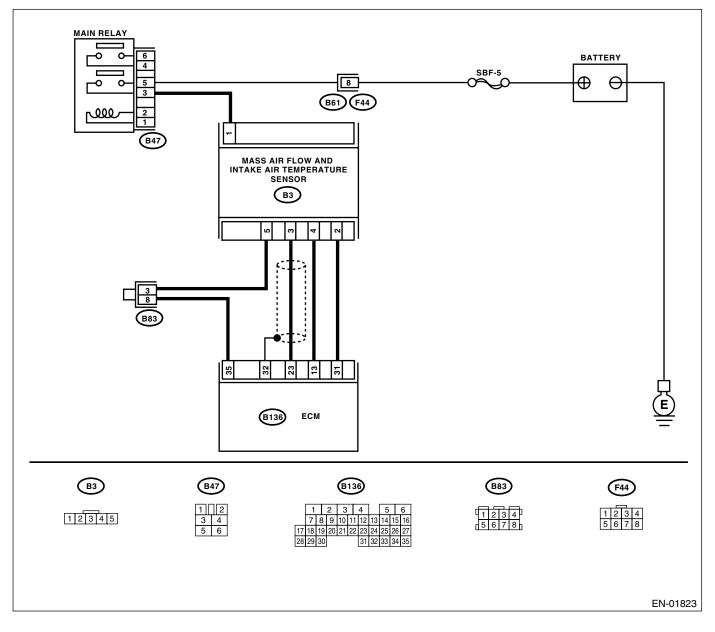
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### • TROUBLE SYMPTOM:

- Erroneous idling
- Engine stalls.
- Poor driving performance

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



			VI For	y Eni	-
	Step	Check	Yes	RE No Sti	Int:
2	CONNECT SUBARU SELECT MONITOR OR THE OBD-II GENERAL SCAN TOOL, AND READ DATA. 1)Turn the ignition switch to OFF. 2)Connect the Subaru Select Monitor or OBD- II general scan tool to data link connector. 3)Turn the ignition switch to ON and Subaru Select Monitor or OBD-II general scan tool switch to ON. 4)Start the engine. 5)Read the mass air flow sensor voltage using Subaru Select Monitor or OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general Scan Tool Instruction Manual. CHECK HARNESS BETWEEN ECM AND</ref.>	Is the voltage 0.2 — 4.7 V?	Even if malfunc- tion indicator light lights up, the cir- cuit has returned to a normal condi- tion at this time.	Go to step <b>3</b> .	Idios
3	<ul> <li>MASS AIR FLOW SENSOR CONNECTOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from mass air flow sensor.</li> <li>3)Turn the ignition switch to ON.</li> <li>4)Measure the voltage between mass air flow sensor connector and chassis ground.</li> <li><i>Connector &amp; terminal</i></li> <li>(B3) No. 3 (+) — Chassis ground (-):</li> <li>CHECK HARNESS BETWEEN ECM AND</li> </ul>		short of harness between mass air flow sensor con- nector and ECM connector. Replace the mass air flow sensor. <ref. fu(sti)-<="" td="" to=""><td></td><td>-</td></ref.>		-
	3)Measure the resistance between ECM con- nector and mass air flow sensor connector. <i>Connector &amp; terminal</i> (B3) No. 2 — (B136) No. 31:		and Intake Air Temperature Sen- sor.>	ECM connector.	

### L: DTC P0107 — MANIFOLD ABSOLUTE PRESSURE/BAROMETRIC PRES-SURE CIRCUIT LOW INPUT —

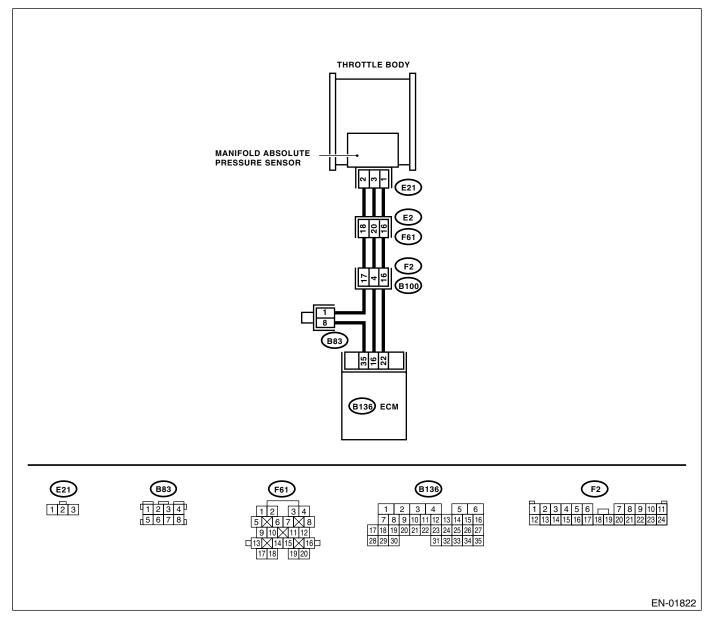
### • DTC DETECTING CONDITION:

Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(STi)-31, DTC P0107 — MANIFOLD ABSOLUTE PRESSURE/ BAROMETRIC PRESSURE CIRCUIT LOW INPUT —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



			VI For	Y Eni	-
	Step	Check	Yes	REG No Sti	Idia
1	CHECK INPUT SIGNAL FOR ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 16 (+) — Chassis ground (-):	Is the voltage more than 4.5 V?		Go to step 2.	14105
2	CHECK INPUT SIGNAL FOR ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 16 (+) — Chassis ground (–):	Shake the ECM harness and connector, while monitoring value of voltage meter. Does the voltage change?	Repair the poor contact in ECM connector.	Contact your SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	
3	CHECK INPUT SIGNAL FOR ECM. Measure the voltage between ECM and chas- sis ground. Connector & terminal (B136) No. 22 (+) — Chassis ground (–):	Is the voltage less than 0.7 V?	Go to step <b>4</b> .	Contact your SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	
4	CHECK HARNESS BETWEEN ECM AND MANIFOLD ABSOLUTE PRESSURE SEN- SOR CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from manifold absolute pressure sensor. 3)Turn the ignition switch to ON. 4)Measure the voltage between manifold absolute pressure sensor connector and engine ground. Connector & terminal (E21) No. 3 (+) — Engine ground (-):	Is the voltage more than 4.5 V?	Go to step <b>5</b> .	Repair the open circuit in harness between ECM and manifold absolute pressure sensor connector.	
5	CHECK HARNESS BETWEEN ECM AND MANIFOLD ABSOLUTE PRESSURE SEN- SOR CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Measure the resistance of harness between ECM and manifold absolute pressure sensor connector. Connector & terminal (B136) No. 35 — (E21) No. 2:	Is the resistance less than 1 $\Omega$ ?	Go to step <b>6</b> .	Repair the open circuit in harness between ECM and manifold absolute pressure sensor connector.	
6	CHECK HARNESS BETWEEN ECM AND MANIFOLD ABSOLUTE PRESSURE SEN- SOR CONNECTOR. Measure the resistance of harness between manifold absolute pressure sensor connector and engine ground. Connector & terminal (E21) No. 1 — Engine ground:	Is the resistance more than 1 $M\Omega$ ?	Go to step 7.	Repair the ground short circuit in har- ness between ECM and mani- fold absolute pres- sure sensor connector.	
7	CHECK POOR CONTACT. Check poor contact in manifold absolute pres- sure sensor connector.	Is there poor contact in mani- fold absolute pressure sensor connector?	Repair the poor contact in manifold absolute pressure sensor connector.	Replace the mani- fold absolute pres- sure sensor. <ref. to FU(STi)-31, Manifold Absolute Pressure Sensor.&gt;</ref. 	

### M: DTC P0108 — MANIFOLD ABSOLUTE PRESSURE/BAROMETRIC PRES-SURE CIRCUIT HIGH INPUT —

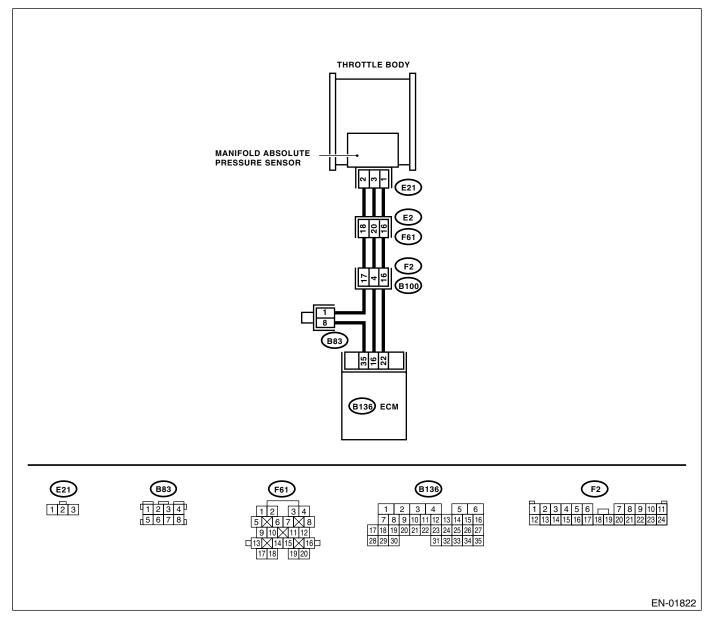
### • DTC DETECTING CONDITION:

Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(STi)-33, DTC P0108 — MANIFOLD ABSOLUTE PRESSURE/ BAROMETRIC PRESSURE CIRCUIT HIGH INPUT —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



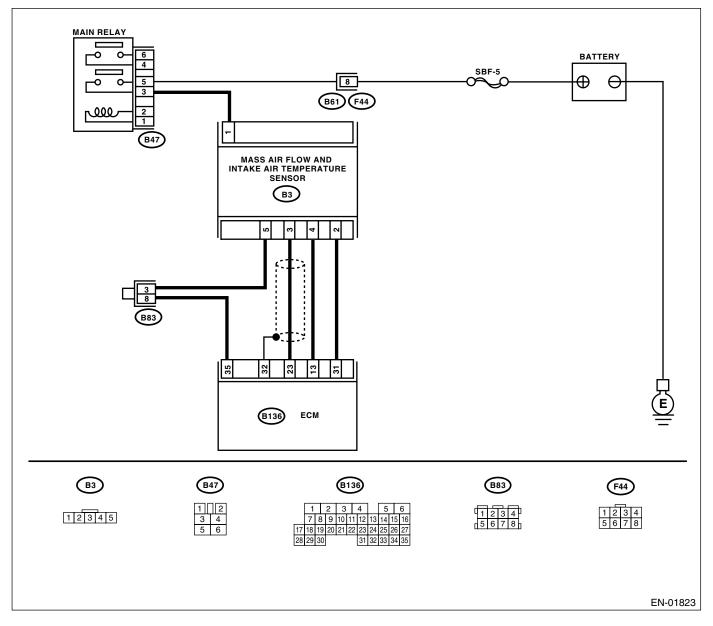
			VI For	Y Enin	-
	Step	Check	Yes	REC'No Sti	Id:
1	CHECK INPUT SIGNAL FOR ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 16 (+) — Chassis ground (-):	Is the voltage more than 4.5 V?		Go to step 2.	I'UIOS
2	CHECK INPUT SIGNAL FOR ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 16 (+) — Chassis ground (-):	Shake the ECM harness and connector, while monitoring value of voltage meter. Does the voltage change?	Repair the poor contact in ECM connector.	Contact your SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	
3	CHECK INPUT SIGNAL FOR ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 22 (+) — Chassis ground (-):	Is the voltage more than 4.5 V?	Go to step <b>4</b> .	Contact your SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	
4	CHECK HARNESS BETWEEN ECM AND MANIFOLD ABSOLUTE PRESSURE SEN- SOR CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from manifold absolute pressure sensor. 3)Turn the ignition switch to ON. 4)Measure the voltage between manifold absolute pressure sensor connector and engine ground. Connector & terminal (E21) No. 3 (+) — Engine ground (-):	Is the voltage more than 4.5 V?	Go to step <b>5</b> .	Repair the open circuit in harness between ECM and manifold absolute pressure sensor connector.	
5	CHECK HARNESS BETWEEN ECM AND MANIFOLD ABSOLUTE PRESSURE SEN- SOR CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Measure the resistance of harness between ECM and manifold absolute pressure sensor connector. Connector & terminal (B136) No. 22 — (E21) No. 1:	Is the resistance less than 1 $\Omega$ ?	Go to step <b>6</b> .	Repair the open circuit in harness between ECM and manifold absolute pressure sensor connector.	
6	CHECK HARNESS BETWEEN ECM AND MANIFOLD ABSOLUTE PRESSURE SEN- SOR CONNECTOR. Measure the resistance of harness between ECM and manifold absolute pressure sensor connector. Connector & terminal (B136) No. 35 — (E21) No. 2:	Is the resistance less than 1 $\Omega$ ?	Go to step 7.	Repair the open circuit in harness between ECM and manifold absolute pressure sensor connector.	
7	CHECK POOR CONTACT. Check poor contact in manifold absolute pres- sure sensor connector.	Is there poor contact in mani- fold absolute pressure sensor connector?		Replace the mani- fold absolute pres- sure sensor. <ref. to FU(STi)-31, Manifold Absolute Pressure Sensor.&gt;</ref. 	

### N: DTC P0111 — INTAKE AIR TEMPERATURE CIRCUIT RANGE/PERFOR-MANCE —

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault
  - GENERAL DESCRIPTION < Ref. to GD(STi)-35, DTC P0111 INTAKE AIR TEMPERATURE CIR-
- TROUBLE SYMPTOM:
  - Erroneous idling
  - Poor driving performance

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



			V For	y Fri-	•
	Step	Check	Yes	No Sti	Id.
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt; NOTE: In this case, it is not necessary to inspect DTC P0111.</ref.>		<sup>Idios</sup>
2	CHECK ENGINE COOLANT TEMPERA- TURE. 1)Start the engine and warm it up completely. 2)Measure the engine coolant temperature using Subaru Select Monitor or OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Is the engine coolant tempera- ture 75°C (167°F) — 95°C (203°F)?	Replace the mass air flow and intake air temperature sensor. <ref. to<br="">FU(STi)-30, Mass Air Flow and Intake Air Temper- ature Sensor.&gt;</ref.>	Inspect the DTC P0125 using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt;</ref.>	

### O: DTC P0112 - INTAKE AIR TEMPERATURE CIRCUIT LOW INPUT -

### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(STi)-37, DTC P0112 INTAKE AIR TEMPERATURE CIR-CUIT LOW INPUT —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

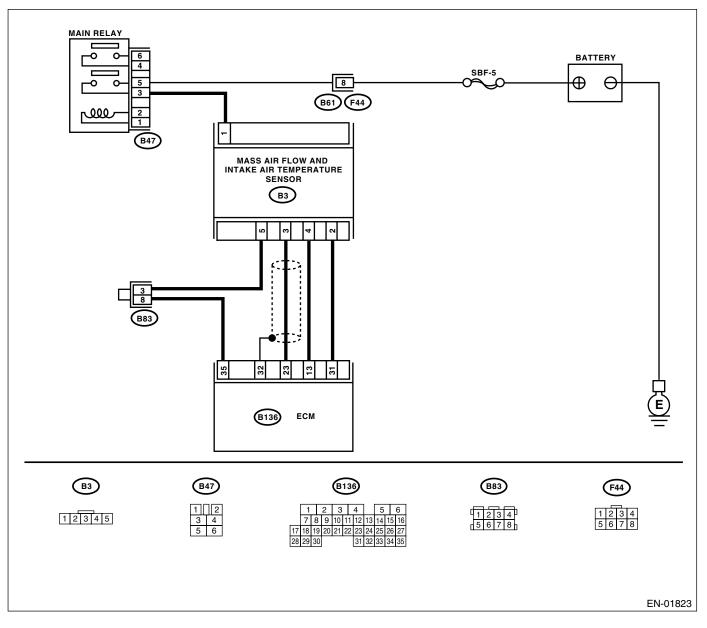
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### • TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



	Step	Check	Yes	Pro No Sti	I.d.
1	CHECK CURRENT DATA. 1)Start the engine.	Is the temperature more than 55°C (131°F)?	Go to step 2.	Repair the poor contact.	'qío
	2)Read the data of intake air temperature sen- sor signal using Subaru Select Monitor or the OBD-II general scan tool.			NOTE: In this case, repair the following:	
	NOTE: •Subaru Select Monitor			<ul> <li>Poor contact mass air flow and</li> </ul>	
	For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE".			intake air tempera- ture sensor	
	<ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool</ref.>			<ul> <li>Poor contact in ECM</li> </ul>	
	For detailed operation procedure, refer to the OBD-II General Scan Tool Instruction Manual.			<ul> <li>Poor contact in joint connector</li> </ul>	
2	CHECK HARNESS BETWEEN MASS AIR FLOW AND INTAKE AIR TEMPERATURE SENSOR AND ECM CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from mass air flow and intake air temperature sensor. 3)Turn the ignition switch to ON. 4)Read the data of intake air temperature sen- sor signal using Subaru Select Monitor or the OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool</ref.>	Is the temperature less than -36°C (-33°F)?		Repair the ground short circuit in har- ness between mass air flow and intake air tempera- ture sensor and ECM connector.	
	For detailed operation procedure, refer to the OBD-II General Scan Tool Instruction Manual.				

### P: DTC P0113 — INTAKE AIR TEMPERATURE CIRCUIT HIGH INPUT —

### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(STi)-39, DTC P0113 INTAKE AIR TEMPERATURE CIR-CUIT HIGH INPUT —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

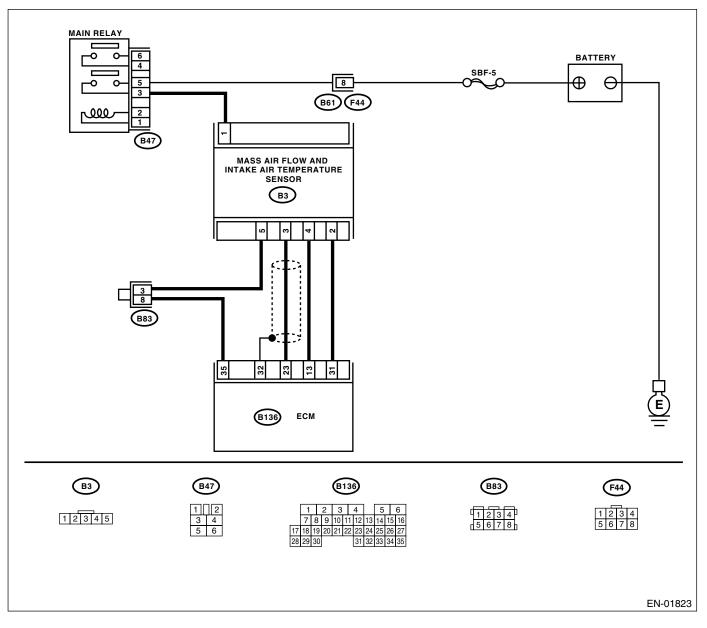
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### • TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



		-	VI For	Y Eri
	Step	Check	Yes	No Stud
1	<ul> <li>CHECK CURRENT DATA.</li> <li>1)Start the engine.</li> <li>2)Read the data of intake air temperature sensor signal using Subaru Select Monitor or the OBD-II general scan tool.</li> <li>NOTE:</li> <li>•Subaru Select Monitor</li> <li>For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE".</li> <li><ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""></ref.></li> <li>•OBD-II general scan tool</li> <li>For detailed operation procedure, refer to the "For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE".</li> <li><ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""></ref.></li> <li>•OBD-II general scan tool For detailed operation procedure, refer to the</li></ul>	Is the temperature less than -36°C (-33°F)?	Go to step 2.	Repair the poor contact. NOTE: In this case, repair the following: • Poor contact in mass air flow and intake air tempera- ture sensor • Poor contact in ECM • Poor contact in
	OBD-II General Scan Tool Instruction Manual.			joint connector
2	CHECK HARNESS BETWEEN MASS AIR FLOW AND INTAKE AIR TEMPERATURE SENSOR AND ECM CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from mass air flow and intake air temperature sensor. 3)Measure the voltage between mass air flow and intake air temperature sensor connector and engine ground. Connector & terminal (B3) No. 4 (+) — Engine ground (–):	Is the voltage more than 10 V?	Repair the battery short circuit in har- ness between mass air flow and intake air tempera- ture sensor and ECM connector.	Go to step 3.
3	CHECK HARNESS BETWEEN MASS AIR FLOW AND INTAKE AIR TEMPERATURE SENSOR AND ECM CONNECTOR. 1)Turn the ignition switch to ON. 2)Measure the voltage between mass air flow and intake air temperature sensor connector and engine ground. <i>Connector &amp; terminal</i> (B3) No. 4 (+) — Engine ground (–):	Is the voltage more than 10 V?	Repair the battery short circuit in har- ness between mass air flow and intake air tempera- ture sensor and ECM connector.	Go to step 4.
4	CHECK HARNESS BETWEEN MASS AIR FLOW AND INTAKE AIR TEMPERATURE SENSOR AND ECM CONNECTOR. Measure the voltage between mass air flow and intake air temperature sensor and mani- fold absolute pressure sensor connector and engine ground. Connector & terminal (B3) No. 4 (+) — Engine ground (–):	Is the voltage more than 4 V?	Go to step 5.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between mass air flow and intake air tempera- ture sensor and ECM connector • Poor contact in mass air flow and intake air tempera- ture sensor • Poor contact in ECM • Poor contact in ECM • Poor contact in

### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL

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		T	-1000	J CPic C	
	Step	Check	Yes	Pro No Studi	
5	CHECK HARNESS BETWEEN MASS AIR	Is the resistance less than 5	Replace the mass	Repair the har-	25
	FLOW AND INTAKE AIR TEMPERATURE	Ω?	air flow and intake	ness and connec-	0
	SENSOR AND ECM CONNECTOR.	1	air temperature	tor.	
	1)Turn the ignition switch to OFF.	1	sensor. <ref. th="" to<=""><th>NOTE:</th><th></th></ref.>	NOTE:	
	2)Measure the resistance of harness between		FU(STi)-30, Mass	In this case, repair	
	mass air flow and intake air temperature sen-		Air Flow and	the following:	
	sor and engine ground.		Intake Air Temper-	Open circuit in	
	Connector & terminal		ature Sensor.>	harness between	
	(B3) No. 5 — Engine ground:	1		mass air flow and	
	I	1		intake air tempera-	
	I	1		ture sensor and	
	I	1		ECM connector	
	I	1		<ul> <li>Poor contact in</li> </ul>	
	I	1		mass air flow and	
	l	1		intake air tempera-	
	I	1		ture sensor	
	I	1		<ul> <li>Poor contact in</li> </ul>	
	I			ECM	
	I	1		<ul> <li>Poor contact in</li> </ul>	
	I	1		joint connector	

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

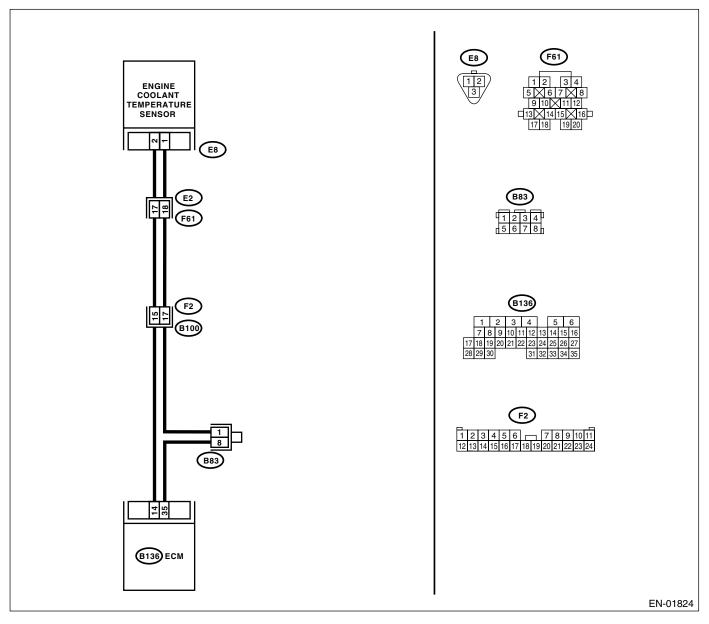
ENGINE (DIÀGNOSTICS)

## Q: DTC P0117 — ENGINE COOLANT TEMPERATURE CIRCUIT LOW INPUT —

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-41, DTC P0117 ENGINE COOLANT TEMPERATURE
- TROUBLE SYMPTOM:
  - · Hard to start
  - · Erroneous idling
  - · Poor driving performance

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



### DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL

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	Step	Check	Yes	Pro No Sti	I.d.
1	<ul> <li>CHECK CURRENT DATA.</li> <li>1)Start the engine.</li> <li>2)Read the data of engine coolant temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool.</li> <li>NOTE:</li> <li>Subaru Select Monitor</li> <li>For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE".</li> <li><ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""></ref.></li> <li>OBD-II general scan tool</li> <li>For detailed operation procedures, refer to the OBD-II general scan tool Instruction Manual.</li> </ul>	Is the temperature more than 120°C (248°F)?	Go to step 2.	Repair the poor contact. NOTE: In this case, repair the following: • Poor contact in engine coolant temperature sen- sor • Poor contact in ECM • Poor contact in coupling connector • Poor contact in joint connector	
2	CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from engine cool- ant temperature sensor. 3)Turn the ignition switch to ON. 4)Read the data of engine coolant temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Is the temperature less than -40°C (-40°F)?	Replace the engine coolant temperature sen- sor. <ref. to<br="">FU(STi)-26, Engine Coolant Temperature Sen- sor.&gt;</ref.>	Repair the ground short circuit in har- ness between engine coolant temperature sen- sor and ECM con- nector.	

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

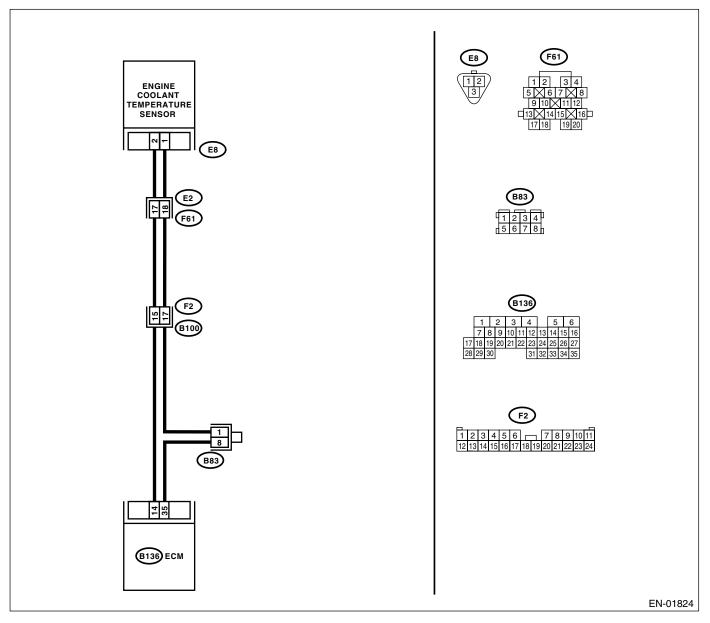
## R: DTC P0118 — ENGINE COOLANT TEMPERATURE CIRCUIT HIGH INPUT -

- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(STi)-43, DTC P0118 ENGINE COOLANT TEMPERATURE</li>
- TROUBLE SYMPTOM:
  - · Hard to start
  - Erroneous idling
  - · Poor driving performance

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

• WIRING DIAGRAM:



#### DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) Non YOUL

ENGINE (DIAGNOSTICS)

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			150 41	Idia
<ul> <li>1)Start the engine.</li> <li>2)Read the data of engine coolant temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool.</li> <li>NOTE:</li> <li>•Subaru Select Monitor</li> <li>For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE".</li> <li><ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""></ref.></li> <li>•OBD-II general scan tool</li> <li>For detailed operation procedures, refer to the OBD-II general scan tool</li> </ul>	Is the temperature less than -40°C (-40°F)?	Go to step 2.	Repair the poor contact. NOTE: In this case, repair the following: • Poor contact in engine coolant temperature sen- sor • Poor contact in ECM • Poor contact in coupling connector • Poor contact in joint connector	
<ul> <li>CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR.         <ol> <li>Turn the ignition switch to OFF.</li> <li>Disconnect the connector from engine cool- ant temperature sensor.</li> <li>Measure the voltage between engine coolant temperature sensor connector and engine ground.</li> </ol> </li> <li>Connector &amp; terminal (E8) No. 2 (+) — Engine ground (-):</li> </ul>	Is the voltage more than 10 V?	short circuit in har- ness between ECM and engine coolant tempera- ture sensor con- nector.	Go to step 3.	
<ul> <li>3 CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR.</li> <li>1)Turn the ignition switch to ON.</li> <li>2)Measure the voltage between engine coolant temperature sensor connector and engine ground.</li> <li>Connector &amp; terminal (E8) No. 2 (+) — Engine ground (-):</li> </ul>	Is the voltage more than 10 V?	Repair the battery short circuit in har- ness between ECM and engine coolant tempera- ture sensor con- nector.	Go to step 4.	
<ul> <li>CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR. Measure the voltage between engine coolant temperature sensor connector and engine ground. Connector &amp; terminal (E8) No. 2 (+) — Engine ground (-):</li> </ul>	Is the voltage more than 4 V?	Go to step <b>5</b> .	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between ECM and engine coolant tempera- ture sensor con- nector • Poor contact in engine coolant temperature sen- sor connector • Poor contact in ECM connector • Poor contact in coupling connector • Poor contact in coupling connector	

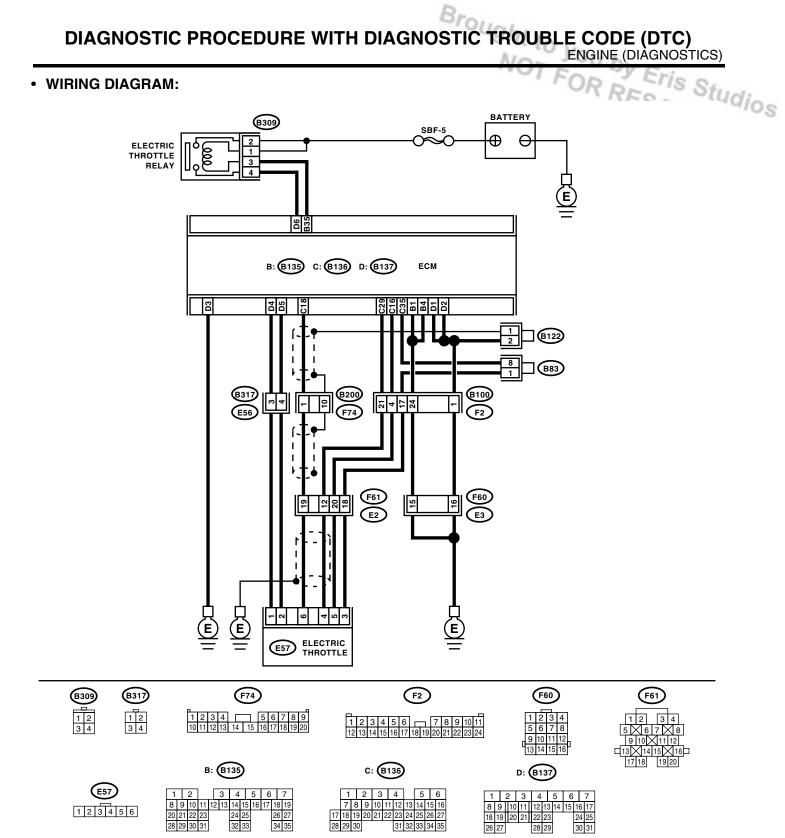
## Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

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Step	Check	Yes	RE No Sti	Id:
5       CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR.         1)Turn the ignition switch to OFF.         2)Measure the resistance of harness between engine coolant temperature sensor connector and engine ground.         Connector & terminal (E8) No. 1 — Engine ground:	Check Is the resistance less than 5 Ω?	Yes Replace the engine coolant temperature sen- sor. <ref. to<br="">FU(STi)-26, Engine Coolant Temperature Sen- sor.&gt;</ref.>	No Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between ECM and engine coolant tempera- ture sensor con- nector • Poor contact in engine coolant temperature sen- sor connector • Poor contact in ECM connector • Poor contact in coupling connector • Poor contact in	

### S: DTC P0122 — THROTTLE/PEDAL POSITION SENSOR/SWITCH "A" CIR-CUIT LOW INPUT —

#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(STi)-45, DTC P0122 THROTTLE/PEDAL POSITION SEN-SOR/SWITCH "A" CIRCUIT LOW INPUT —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
  - Engine stalls.
  - Poor driving performance



EN-01825

## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	No Sti	Id:
2	CHECK OUTPUT VOLTAGE OF SENSOR. 1)Turn the ignition switch to ON. 2)Measure the voltage between ECM connec- tor terminals. <i>Connector &amp; terminal</i> (B136) No. 29 (+) — (B136) No. 35 (–) : 3)Shake the ECM harness and connector, engine harness connectors and electric throt- tle. CHECK POOR CONTACT IN CONNECTORS.	Is the voltage more than 0.4 V?	Go to step <b>2</b> . Repair the poor	Go to step 3.	UIOS
	Check poor contact in connectors between ECM and electric throttle.	connectors between ECM and electric throttle?	contact in connec- tors.	returned to a nor- mal condition at this time. A tempo- rary poor contact of the connector may be the cause.	
3	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Disconnect the connector from electric throt- tle. 4)Measure the resistance between ECM con- nector and electric throttle connector. Connector & terminal (B136) No. 16 — (E57) No. 5:	Is the resistance less than 1 $\Omega$ ?	Go to step 4.	Repair open of harness connec- tor.	
4	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. Measure the resistance between ECM connec- tor and chassis ground. Connector & terminal (B136) No. 18 — Chassis ground: (B135) No. 16 — Chassis ground:		Go to step <b>5</b> .	Repair the chas- sis short of har- ness.	
5	CHECK POWER SURPLY TO SENSOR. 1)Connect the ECM connector. 2)Turn the ignition switch to ON. 3)Measure the voltage between electric throttle connector and engine ground. <i>Connector &amp; terminal</i> (E57) No. 5 (+) — Engine ground (-): 4)Shake the ECM harness and connector, engine harness connectors, while monitoring value of voltage meter.	Is the voltage 4.5 — 5.5 V?	Go to step <b>6</b> .	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	
6	CHECK SHORT OF ECM. 1)Turn the ignition switch to OFF. 2)Measure the resistance between electric throttle connector and engine ground. <i>Connector &amp; terminal</i> (E57) No. 6 — Engine ground:	Is the resistance more than 10 $\Omega$ ?	Repair the poor contact in electric throttle connector. If problem per- sists, replace the accelerator posi- tion sensor.	Repair the poor the contact in ECM connector. If prob- lem persists, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

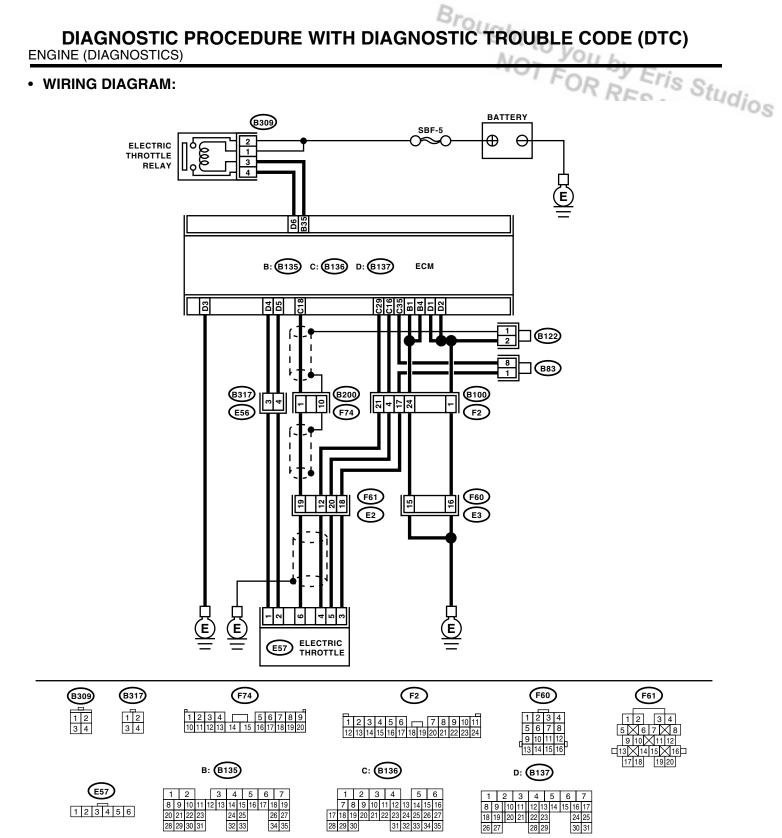
ENGINE (DIÀGNOSTICS)

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## T: DTC P0123 — THROTTLE/PEDAL POSITION SENSOR/SWITCH "A" CIRCUIT E

#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-47, DTC P0123 THROTTLE/PEDAL POSITION SEN-
- SOR/SWITCH "A" CIRCUIT HIGH INPUT -, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
  - Engine stalls.
  - Poor driving performance



EN-01825

### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	Pro No Sti	Id.
1	<ul> <li>CHECK OUTPUT VOLTAGE OF SENSOR.</li> <li>1)Turn the ignition switch to ON.</li> <li>2)Read the data of main throttle sensor signals, using the Subaru Select Monitor.</li> <li>3)Shake the ECM harness and connector, engine harness connectors, electric throttle connector harness while monitoring value of voltage meter.</li> </ul>	Is the voltage less than 4.63 V?	Go to step 2.	Go to step 3.	<sup>rq</sup> ios
2	CHECK POOR CONTACT IN CONNECTORS. Check poor contact in connectors between ECM and electric throttle.	Is there poor contact in the connectors between ECM and electric throttle?	Repair the poor contact in connec- tors.	Connector has returned to a nor- mal condition at this time. A tempo- rary poor contact of the connector may be the cause.	
3	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. 1)Turn the ignition switch to OFF. 2)Disconnect the connectors from ECM. 3)Disconnect the connectors from electric throttle. 4)Measure the resistance between ECM con- nector and electric throttle connector. <i>Connector &amp; terminal</i> (B136) No. 18 — (E57) No. 6: (B136) No. 35 — (E57) No. 3:	Is the resistance less than 1 Ω?	Go to step <b>4</b> .	Repair the open of harness connec- tor.	
4	<ul> <li>CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE.</li> <li>1)Connect the ECM connector.</li> <li>2)Measure the resistance between the electric throttle connector and engine ground.</li> <li><i>Connector &amp; terminal</i> (E57) No. 3 — Engine ground:</li> </ul>	Is the resistance less than 1 $\Omega$ ?	Go to step 5.	Repair the poor contact in ECM connector. If the problem persists, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	
5	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. 1)Turn the ignition switch to ON. 2)Measure the voltage between electric throttle connector and engine ground. Connector & terminal (E57) No. 5 (+) — Engine ground (–): 3)Shake the ECM harness and connector, engine harness connectors, while monitoring value of voltage meter.	Is the voltage more than 10 V?	Go to step <b>6</b> .	Repair the battery short of harness between ECM connector and electric throttle connector.	
6	<ul> <li>CHECK POWER SUPPLY TO SENSOR.</li> <li>1)Measure the voltage between the electric throttle connector and engine ground.</li> <li>Connector &amp; terminal <ul> <li>(E57) No. 6 (+) — Engine ground (-):</li> </ul> </li> <li>2)Shake the ECM harness and connector, engine harness connectors, while monitoring value of voltage meter.</li> </ul>	Is the voltage less than 10 V?	Go to step 7.	Repair the short of harness between ECM connector and electric throt- tle connector.	

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ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	RE NO St	Id:
7	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Measure the resistance between ECM con- nectors. Connector & terminal (B136) No. 18 — (B136) No. 16:	Is the resistance more than 1 M $\Omega$ ?	Repair the poor contact in harness. Replace the elec- tric throttle.	Repair the short of harness of power supply to sensor.	10/05

No

### Bro DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

ENGINE (DIÀGNOSTICS)

A + --

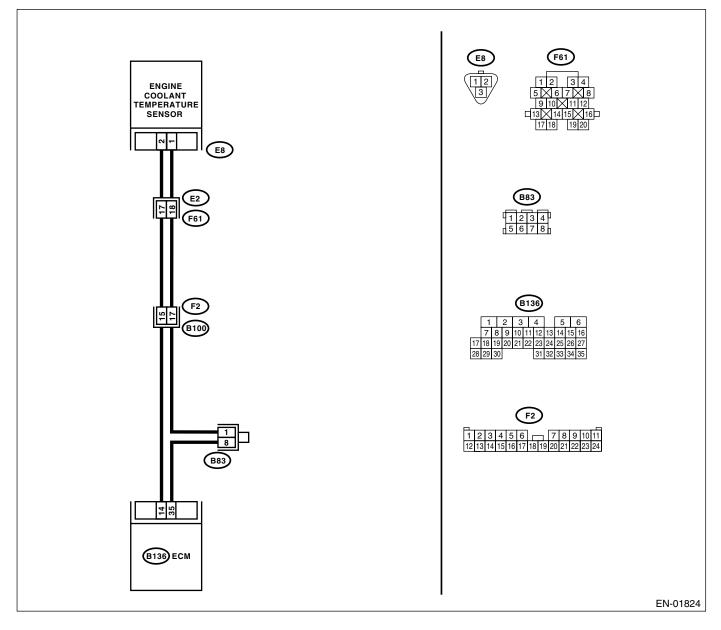
# U: DTC P0125 — INSUFFICIENT COOLANT TEMPERATURE FOR CLOSED Studios

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault
  - GENERAL DESCRIPTION < Ref. to GD(STi)-49, DTC P0125 INSUFFICIENT COOLANT TEMPER-
  - ATURE FOR CLOSED LOOP FUEL CONTROL -, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Engine will not return to idling.

#### **CAUTION:**

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

#### • WIRING DIAGRAM:



#### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL

No

ENGINE (DIAGNOSTICS)

			For	J Print	-
	Step	Check	Yes	Pro No Sti	Int.
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt; NOTE: In this case, it is not necessary to inspect DTC P0125.</ref.>		Idios
2	CHECK ENGINE COOLING SYSTEM. NOTE: Check the following items. •Thermostat open stuck •Coolant level •Coolant freeze •Tire diameter	Is there a fault in engine cool- ing system?	mostat. <ref. to<br="">CO(H4SO)-17, Thermostat.&gt;</ref.>	Replace the engine coolant temperature sen- sor. <ref. to<br="">FU(STi)-26, Engine Coolant Temperature Sen- sor.&gt;</ref.>	

### DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

V: DTC P0128 — COOLANT THERMOSTAT (COOLANT TEMPERATURE BE-LOW THERMOSTAT REGULATING TEMPERATURE) —

#### • DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(STi)-51, DTC P0128 — COOLANT THERMOSTAT (COOL-ANT TEMPERATURE BELOW THERMOSTAT REGULATING TEMPERATURE) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### • TROUBLE SYMPTOM:

• Thermostat remains open.

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK VEHICLE CONDITION.	Was the vehicle driven or idled with the engine partially sub- merged under water?	In this case, it is not necessary to inspect DTC P0128.	Go to step 2.
2	CHECK FOR OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Codes (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt;</ref.>	Go to step 3.
3	CHECK ENGINE COOLANT.	Are coolant level and mixture ratio of cooling water to anti- freeze solution correct?	Go to step 4.	Replace the engine coolant. <ref. to<br="">CO(H4SO)-12, REPLACEMENT, Engine Coolant.&gt;</ref.>
4	CHECK RADIATOR FAN. 1)Start the engine. 2)Check radiator fan operation.	Does the radiator fan continu- ously rotate for more than 3 minutes during idling?	Repair radiator fan circuit. <ref. to<br="">CO(H4SO)-22, Radiator Main Fan and Fan Motor.&gt; and <ref. to<br="">CO(H4SO)-23, Radiator Sub Fan and Fan Motor.&gt;.</ref.></ref.>	mostat. <ref. to<br="">CO(H4SO)-17,</ref.>

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

## W: DTC P0129 — ATMOSPHERIC PRESSURE SENSOR CIRCUIT RANGE/PER-FORMANCE —

#### • DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION <Ref. to GD(STi)-53, DTC P0129 BAROMETRIC PRESSURE TOO LOW —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	41, Engine Con-	It is not necessary to inspect DTC P0129.

#### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** ENGINE (DIÀGNOSTICS) A + -

## X: DTC P0131 — O<sub>2</sub> SENSOR CIRCUIT LOW VOLTAGE (BANK 1 SENSOR 1) —

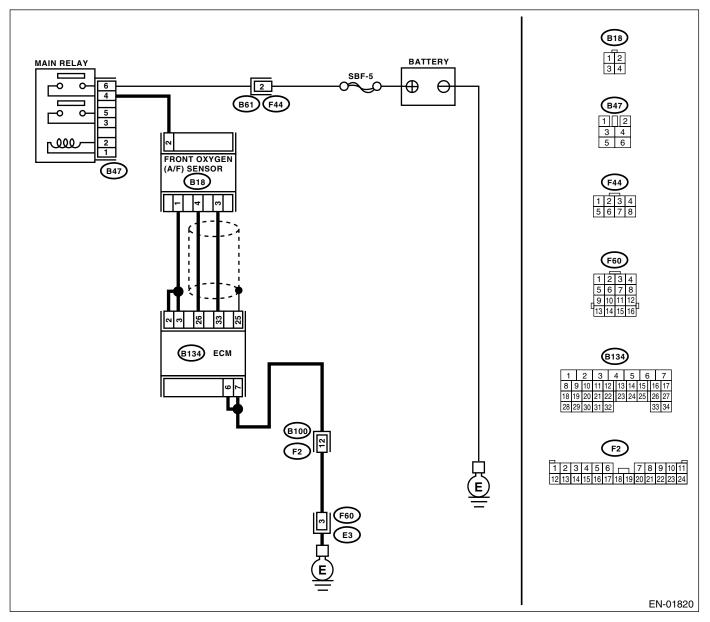
Immediately at fault recognition

 GENERAL DESCRIPTION <Ref. to GD(STi)-54, DTC P0131 — O<sub>2</sub> SENSOR CIRCUIT LOW VOLT-AGE (BANK 1 SENSOR 1) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### **CAUTION:**

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

#### • WIRING DIAGRAM:



## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	RE No Sti	Id:
1	CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC- TOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connectors from ECM and front oxygen (A/F) sensor connector. 3)Measure the resistance of harness between ECM and front oxygen (A/F) sensor connector. <i>Connector &amp; terminal</i> (B134) No. 26 — Chassis ground: (B134) No. 33 — Chassis ground:	Is the resistance more than 1 MΩ?	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(STi)-37, Front Oxygen (A/F) Sen- sor.&gt;</ref.>		14105

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#### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** ENGINE (DIÀGNOSTICS) A + -

# Y: DTC P0132 - O2 SENSOR CIRCUIT HIGH VOLTAGE (BANK 1 SENSOR 1) -

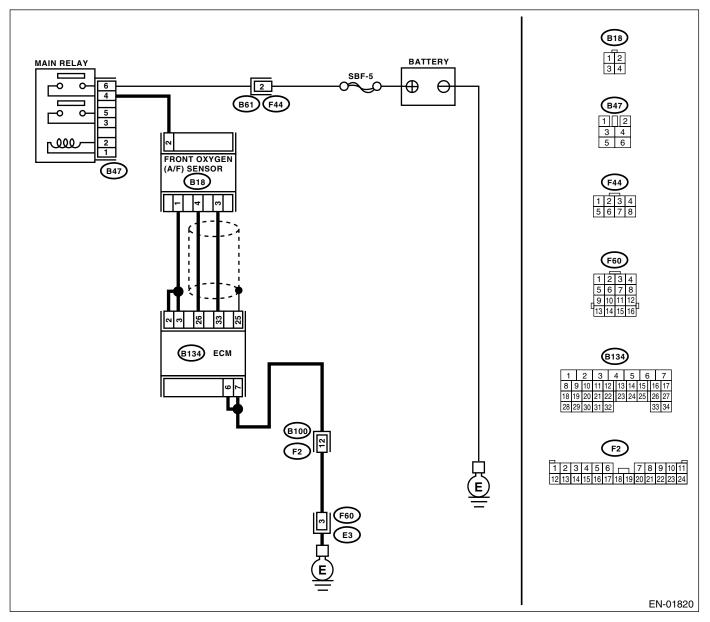
Immediately at fault recognition

 GENERAL DESCRIPTION <Ref. to GD(STi)-56, DTC P0132 — O<sub>2</sub> SENSOR CIRCUIT HIGH VOLT-AGE (BANK 1 SENSOR 1) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### **CAUTION:**

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

#### • WIRING DIAGRAM:



#### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL

ENGINE (DIAGNOSTICS)

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Step	Check	Yes	No Sti	Id.
<ol> <li>CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC- TOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connectors from front oxygen (A/F) sensor.</li> <li>3)Measure the voltage of harness between ECM connector and chassis ground.</li> <li>Connector &amp; terminal (B134) No. 26 (+) — Chassis ground (-): (B134) No. 33 (+) — Chassis ground (-):</li> </ol>	Is the voltage more than 8 V?	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(STi)-37, Front Oxygen (A/F) Sen- sor.&gt;</ref.>	ness between ECM and front	

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### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

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# Z: DTC P0133 — O<sub>2</sub> SENSOR CIRCUIT SLOW RESPONSE (BANK 1 SENSOR 1)

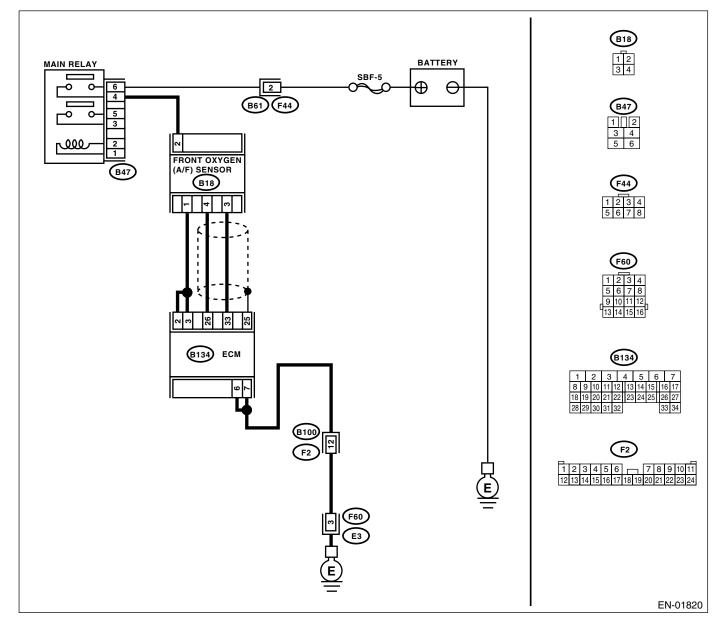
#### • DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION <Ref. to GD(STi)-58, DTC P0133 O2 SENSOR CIRCUIT SLOW RE-SPONSE (BANK 1 SENSOR 1) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

#### WIRING DIAGRAM:



#### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL

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ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	PENO Sti	Int:
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt; NOTE: In this case, it is not necessary to inspect DTC P0133.</ref.>		Idic
2	<ul> <li>CHECK EXHAUST SYSTEM.</li> <li>NOTE: Check the following items.</li> <li>Loose installation of front portion of exhaust pipe onto cylinder heads</li> <li>Loose connection between front exhaust pipe and front catalytic converter</li> <li>Damage of exhaust pipe resulting in a hole</li> </ul>	Is there a fault in exhaust sys- tem?		Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(STi)-37, Front Oxygen (A/F) Sen- sor.&gt;</ref.>	

#### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** Al-

ENGINE (DIÀGNOSTICS)

### AA: DTC P0134 — O2 SENSOR CIRCUIT NO ACTIVITY DETECTED (BANK 1 Studios E

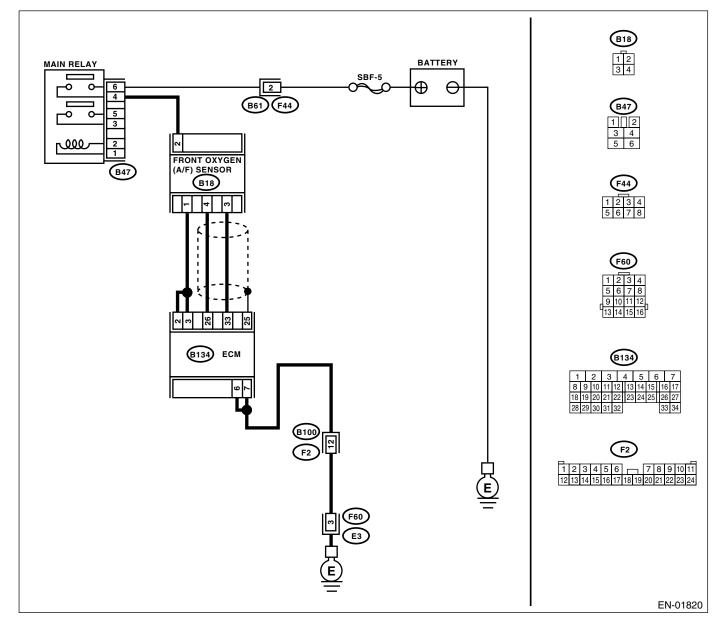
#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-61, DTC P0134 O<sub>2</sub> SENSOR CIRCUIT NO ACTIVITY DETECTED (BANK 1 SENSOR 1) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

#### WIRING DIAGRAM:



## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

ENGINE (DIAGNOSTICS)

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Step	Check	Yes	Pro No Sti	Id.
<ol> <li>CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC- TOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connectors from ECM and front oxygen (A/F) sensor connector.</li> <li>3)Measure the resistance of harness between ECM and front oxygen (A/F) sensor connector.</li> <li>Connector &amp; terminal (B134) No. 26 — (B18) No. 4: (B134) No. 33 — (B18) No. 3:</li> </ol>		Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(STi)-37, Front Oxygen (A/F) Sen- sor.&gt;</ref.>	between ECM and front oxygen (A/F)	

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#### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** A + -

ENGINE (DIÀGNOSTICS)

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## AB:DTC P0137 — O<sub>2</sub> SENSOR CIRCUIT LOW VOLTAGE (BANK 1 SENSOR 2) —

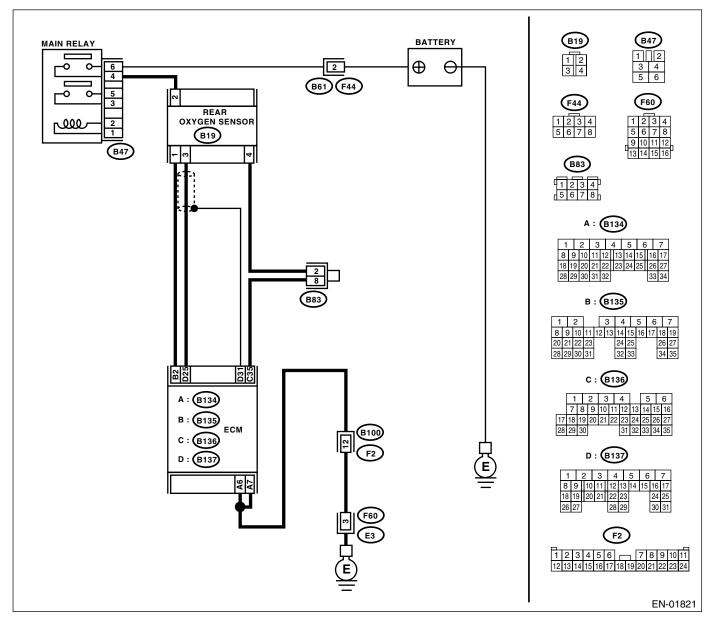
Two consecutive driving cycles with fault

 GENERAL DESCRIPTION <Ref. to GD(STi)-63, DTC P0137 — O<sub>2</sub> SENSOR CIRCUIT LOW VOLT-AGE (BANK 1 SENSOR 2) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

#### WIRING DIAGRAM:



## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	RE No Sti	Id:
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Using the List of Diagnostic Trou- ble Code (DTC), check the appro- priate DTC. <ref. to EN(STi)-66, List of Diagnostic Trouble Code (DTC).&gt;</ref. 	Go to step 2.	UIOS
2	CHECK REAR OXYGEN SENSOR DATA. 1)Warm-up the engine until engine coolant temperature is above 70°C (158°F), and keep the engine speed at 2,000 rpm to 3,000 rpm for 2 minutes. 2)Read the data of rear oxygen sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DIS- PLAY FOR ENGINE". <ref. en(sti)-28,<br="" to="">Subaru Select Monitor.&gt; •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Does the value fluctuate?	Go to step <b>6</b> .	Go to step 3.	
3	CHECK REAR OXYGEN SENSOR DATA. Read the data of rear oxygen sensor signal using Subaru Select Monitor or OBD-II general scan tool.	Is the voltage 0.2 — 0.4 V?	Go to step <b>4</b> .	Replace the rear oxygen sensor. <ref. fu(sti)-<br="" to="">39, Rear Oxygen Sensor.&gt;</ref.>	
4	<ul> <li>CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connectors from ECM and rear oxygen sensor.</li> <li>3)Measure the resistance of harness between ECM and rear oxygen sensor connector.</li> <li>Connector &amp; terminal (B137) No. 25 — (B19) No. 3:</li> </ul>	Is the resistance more than 3 Ω?	Repair the open circuit in harness between ECM and rear oxygen sen- sor connector.	Go to step 5.	
5	CHECK HARNESS BETWEEN REAR OXY- GEN SENSOR AND ECM CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from rear oxygen sensor. 3)Turn the ignition switch to ON. 4)Measure the voltage between rear oxygen sensor harness connector and engine ground or chassis ground. Connector & terminal (B19) No. 3 (+) — Engine ground (-):	Is the voltage more than 0.2 V?	Replace the rear oxygen sensor. <ref. fu(sti)-<br="" to="">39, Rear Oxygen Sensor.&gt;</ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between rear oxygen sen- sor and ECM con- nector • Poor contact in rear oxygen sen- sor connector • Poor contact in ECM connector	

## Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

	Step	Check	Yes	Pro No St
6	CHECK EXHAUST SYSTEM. Check the exhaust system parts.	Is there a fault in exhaust sys- tem?	Repair or replace the faulty parts.	Replace the rear oxygen sensor.
	NOTE: Check the following items. •Loose installation of portions •Damage (crack, hole etc.) of parts •Looseness and ill fitting of parts between front oxygen (A/F) sensor and rear oxygen sensor			<ref. fu(sti)-<br="" to="">39, Rear Oxygen Sensor.&gt;</ref.>

#### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** ENGINE (DIAGNOSTICS) Α.,

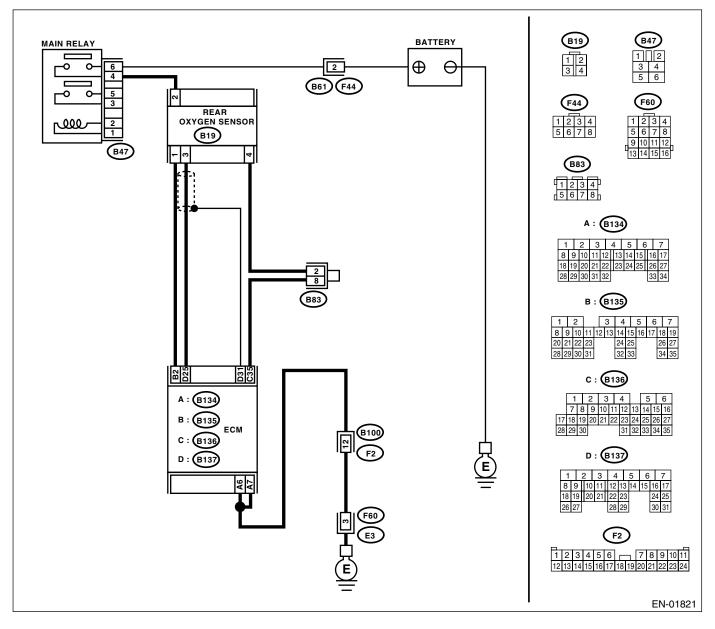
# AC:DTC P0138 — O<sub>2</sub> SENSOR CIRCUIT HIGH VOLTAGE (BANK 1 SENSOR 2) —

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION <Ref. to GD(STi)-66, DTC P0138 O<sub>2</sub> SENSOR CIRCUIT HIGH VOLT-AGE (BANK 1 SENSOR 2) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

#### WIRING DIAGRAM:



### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	No Sti	Id:
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Using the List of Diagnostic Trou- ble Code (DTC), check the appro- priate DTC. <ref. to EN(STi)-66, List of Diagnostic Trouble Code (DTC).&gt;</ref. 	Go to step 2.	Idios
2	CHECK REAR OXYGEN SENSOR DATA. 1)Warm-up the engine until engine coolant temperature is above 70°C (158°F), and keep the engine speed at 2,000 rpm to 3,000 rpm for 2 minutes. 2)Read the data of rear oxygen sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DIS- PLAY FOR ENGINE". <ref. en(sti)-28,<br="" to="">Subaru Select Monitor.&gt; •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>		Go to step <b>6</b> .	Go to step 3.	
3	CHECK REAR OXYGEN SENSOR DATA. Read the data of rear oxygen sensor signal using Subaru Select Monitor or OBD-II general scan tool.	Is the voltage 0.2 — 0.4 V?	Go to step <b>4</b> .	Replace the rear oxygen sensor. <ref. fu(sti)-<br="" to="">39, Rear Oxygen Sensor.&gt;</ref.>	
4	<ul> <li>CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connectors from ECM and rear oxygen sensor.</li> <li>3)Measure the resistance of harness between ECM and rear oxygen sensor connector.</li> <li>Connector &amp; terminal (B137) No. 25 — (B19) No. 3:</li> </ul>	Is the resistance more than 3 Ω?	Repair the open circuit in harness between ECM and rear oxygen sen- sor connector.	Go to step 5.	
5	<ul> <li>CHECK HARNESS BETWEEN REAR OXY-GEN SENSOR AND ECM CONNECTOR.</li> <li>1) Turn the ignition switch to OFF.</li> <li>2) Disconnect the connector from rear oxygen sensor.</li> <li>3) Turn the ignition switch to ON.</li> <li>4) Measure the voltage between rear oxygen sensor harness connector and engine ground or chassis ground.</li> <li>Connector &amp; terminal (B19) No. 3 (+) — Engine ground (-):</li> </ul>	Is the voltage more than 0.2 V?	oxygen sensor. <ref. fu(sti)-<="" td="" to=""><td>Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between rear oxygen sen- sor and ECM con- nector • Poor contact in rear oxygen sen- sor connector • Poor contact in ECM connector</td><td></td></ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between rear oxygen sen- sor and ECM con- nector • Poor contact in rear oxygen sen- sor connector • Poor contact in ECM connector	

#### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL Ma

ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	Pro No Stud.	
6	CHECK EXHAUST SYSTEM. Check the exhaust system parts.	Is there a fault in exhaust system?	Repair or replace the faulty parts.	Replace the rear oxygen sensor.	0.5
	NOTE: Check the following items. •Loose installation of portions •Damage (crack, hole etc.) of parts •Looseness and ill fitting of parts between front oxygen (A/F) sensor and rear oxygen sensor			<ref. fu(sti)-<br="" to="">39, Rear Oxygen Sensor.&gt;</ref.>	

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

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# AD:DTC P0139 — $O_2$ SENSOR CIRCUIT SLOW RESPONSE (BANK 1 SENSOR 2)

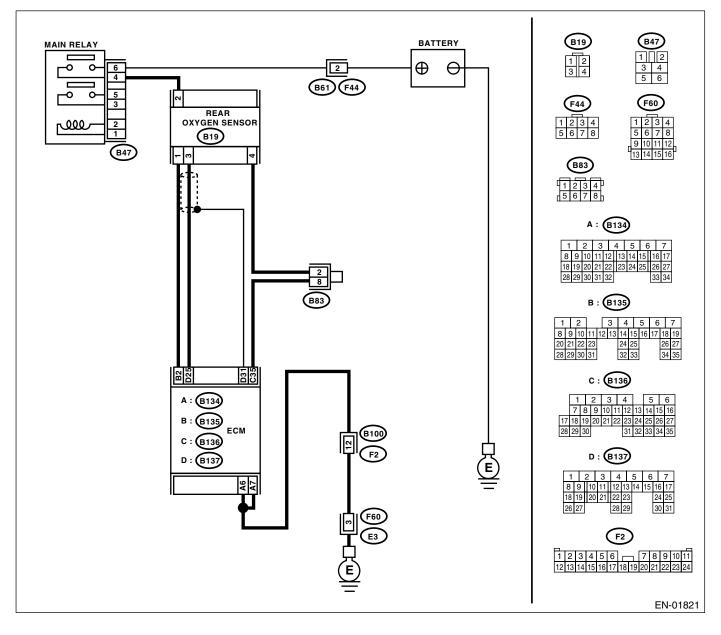
#### • DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION < Ref. to GD(STi)-68, DTC P0139 O2 SENSOR CIRCUIT SLOW RE-SPONSE (BANK 1 SENSOR 2) -, Diagnostic Trouble Code (DTC) Detecting Criteria >

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

#### WIRING DIAGRAM:



## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

ENGINE (DIAGNOSTICS)

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Step	Check	Yes	Pro No Sti	Id.
1 CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt; NOTE: In this case, it is not necessary to inspect DTC P0139.</ref.>	39, Rear Oxygen Sensor.>	(qio

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### AE:DTC P0171 — SYSTEM TOO LEAN (BANK 1) —

NOTE:

For the diagnostic procedure, refer to DTC P0172. <Ref. to EN(STi)-139, DTC P0172 — SYSTEM TOO RICH (BANK 1) —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

#### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** A 1 -

ENGINE (DIÀGNOSTICS) Eris Studios

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### AF:DTC P0172 — SYSTEM TOO RICH (BANK 1) —

#### • DTC DETECTING CONDITION:

Two consecutive driving cycles with fault

 GENERAL DESCRIPTION < Ref. to GD(STi)-71, DTC P0171 — SYSTEM TOO LEAN (BANK 1) —, Di-</li> agnostic Trouble Code (DTC) Detecting Criteria.> and <Ref. to GD(STi)-74, DTC P0172 - SYSTEM TOO RICH (BANK 1) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### • TROUBLE SYMPTOM:

- Erroneous idling
- Engine stalls.
- Poor driving performance

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK EXHAUST SYSTEM.	Are there holes or loose bolts on exhaust system?	Repair the exhaust system.	Go to step 2.
2	CHECK AIR INTAKE SYSTEM.	Are there holes, loose bolts or disconnection of hose on air intake system?	Repair the air intake system.	Go to step 3.
3	<ul> <li>CHECK FUEL PRESSURE.</li> <li>Warning: <ul> <li>Place "NO FIRE" signs near the working area.</li> <li>Be careful not to spill fuel on the floor.</li> </ul> </li> <li>1)Release the fuel pressure. <ul> <li>(1) Disconnect the connector from fuel pump relay.</li> <li>(2) Start the engine and run it until it stalls.</li> <li>(3) After the engine stalls, crank it for 5 more seconds.</li> <li>(4) Turn the ignition switch to OFF.</li> </ul> </li> <li>2)Connect the connector to fuel pump relay.</li> <li>3)Disconnect the fuel delivery hose from fuel filter, and connect fuel pressure gauge.</li> <li>4)Install the fuel filler cap.</li> <li>5)Start the engine and idle while gear position is neutral.</li> <li>6)Measure the fuel pressure while disconnecting pressure regulator vacuum hose from intake manifold.</li> </ul> <li>Warning: <ul> <li>Before removing the fuel pressure gauge, release fuel pressure.</li> <li>NOTE:</li> <li>If the fuel pressure does not increase, squeeze fuel return hose 2 to 3 times, then measure fuel pressure again.</li> </ul> </li>		Go to step 4.	Repair the follow- ing items. Fuel pressure too high: • Clogged fuel return line or bent hose Fuel pressure too low: • Improper fuel pump discharge • Clogged fuel supply line

## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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ENGINE (DIAGNOSTICS)

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Step	Check	Yes	Dr No Sti
<ul> <li>4 CHECK FUEL PRESSURE. After connecting the pressure regulator vacuum hose, measure fuel pressure.</li> <li>Warning: Before removing the fuel pressure gauge, release fuel pressure. NOTE:</li> <li>If the fuel pressure does not increase, squeeze fuel return hose 2 to 3 times, then measure fuel pressure again.</li> <li>If out of specification as measured at this step, check or replace the pressure regulator and pressure regulator vacuum hose.</li> </ul>	Is the measured value 206 — 235 kPa (2.1 — 2.4 kg/cm <sup>2</sup> , 30 — 34 psi)?	Go to step 5.	Repair the follow- ing items. Fuel pressure too high: • Faulty pres- sure regulator • Clogged fuel return line or bent hose Fuel pressure too low: • Faulty pres- sure regulator • Improper fuel pump discharge • Clogged fuel supply line
<ul> <li>5 CHECK ENGINE COOLANT TEMPERATURE SENSOR.         <ol> <li>Start the engine and warm-up completely.</li> <li>Read the data of engine coolant temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool.</li> <li>NOTE:                 <ul> <li>Subaru Select Monitor</li> <li>For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE".</li> <li>Ref. to EN(STi)-28, Subaru Select Monitor.&gt;</li> <li>OBD-II general scan tool</li> <li>For detailed operation procedures, refer to the OBD-II general scan tool</li> <li>Subaru Select Monitor.&gt;</li> <li>OBD-II general scan tool</li> <li>For detailed operation procedures, refer to the OBD-II general scan tool</li> <li>For detailed operation procedures, refer to the</li> </ul></li> <li>OBD-II General Scan Tool Instruction Manual.</li> </ol></li></ul>	Is the temperature more than 60°C (140°F)?	Go to step 6.	Replace the engine coolant temperature sen- sor. <ref. to<br="">FU(STi)-26, Engine Coolant Temperature Sen- sor.&gt;</ref.>
<ul> <li>6 CHECK MASS AIR FLOW AND INTAKE AIR TEMPERATURE.</li> <li>1)Start the engine and warm-up engine until coolant temperature is greater than 60°C (140°F).</li> <li>2)Place the shift lever in neutral position.</li> <li>3)Turn the A/C switch to OFF.</li> <li>4)Turn all accessory switches to OFF.</li> <li>5)Read the data of mass air flow and intake air temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool.</li> <li>NOTE:</li> <li>•Subaru Select Monitor</li> <li>For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE".</li> <li>•OBD-II general scan tool</li> <li>For detailed operation procedure, refer to the OBD-II general scan tool</li> </ul>	Is the measured value within the followings? Ignition ON: 73.3 — 106.6 kPa (550 — 800 mmHg, 21.65 — 31.50 inHg) Idling: 24.0 — 41.3 kPa (180 — 310 mmHg, 7.09 — 12.20 inHg)	Go to step 7.	Replace the mass air flow and intake air temperature sensor. <ref. to<br="">FU(STi)-30, Mass Air Flow and Intake Air Temper- ature Sensor.&gt;</ref.>

Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

		- 1000	Slis o	7
Step	Check	Yes	No St	Id.
<ul> <li>7 CHECK MASS AIR FLOW AND INTAKE AIR TEMPERATURE SENSOR.</li> <li>1)Start the engine and warm-up engine until coolant temperature is greater than 60°C (140°F).</li> <li>2)Place the shift lever in neutral position.</li> <li>3)Turn the A/C switch to OFF.</li> <li>4)Turn all accessory switches to OFF.</li> <li>5)Open the front hood.</li> <li>6)Measure the ambient temperature.</li> <li>7)Read the data of mass air flow and intake air temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool.</li> <li>NOTE:</li> <li>•Subaru Select Monitor</li> <li>For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE".</li> <li>•OBD-II general scan tool</li> <li>For detailed operation procedure, refer to the OBD-II general scan tool</li> </ul>	from intake air temperature. Is the obtained value –10°C — 50°C (14°F — 122°F)?	cause probable cause is deteriora-	air flow and intake air temperature	IQÍOS

### DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

### AG:DTC P0181 — FUEL TEMPERATURE SENSOR "A" CIRCUIT RANGE/PER-FORMANCE —

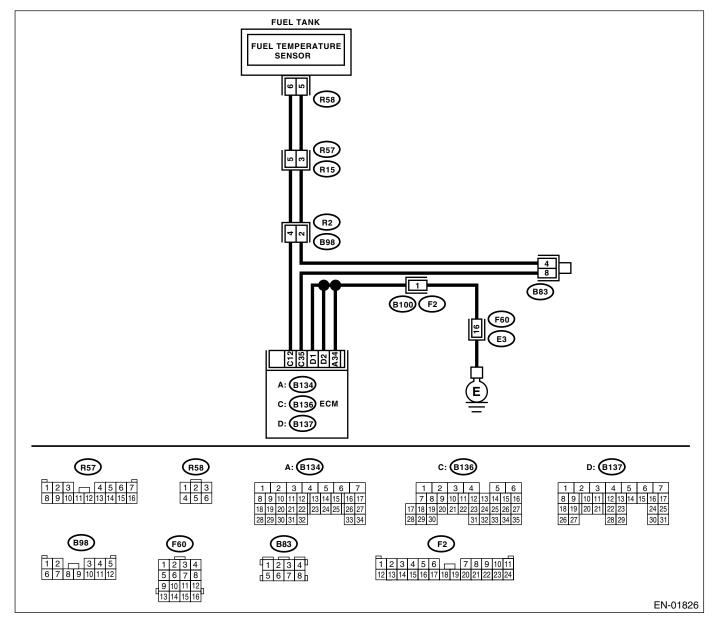
#### • DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION < Ref. to GD(STi)-77, DTC P0181 FUEL TEMPERATURE SENSOR "A"

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

#### • WIRING DIAGRAM:



### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

			-1 000	J. C.Pin	
	Step	Check	Yes	No St	10
1	CHECK FOR OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Codes (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt; NOTE: In this case, it is</ref.>	EC(STi)-8, Fuel Temperature Sen- sor.>	[0]
			not necessary to inspect DTC P0181.		

#### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** ENGINE (DIAGNOSTICS) Α.,

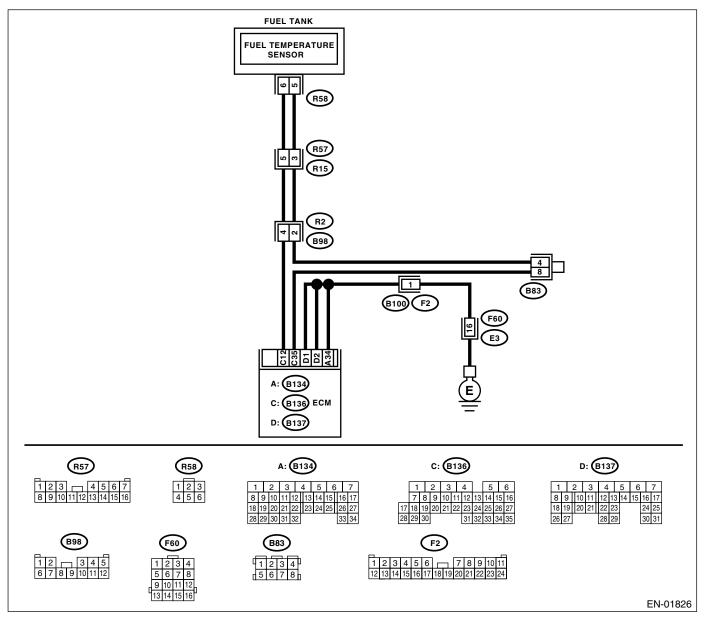
# AH:DTC P0182 — FUEL TEMPERATURE SENSOR "A" CIRCUIT LOW INPUT —

- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(STi)-80, DTC P0182 FUEL TEMPERATURE SENSOR "A"</li>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

#### • WIRING DIAGRAM:



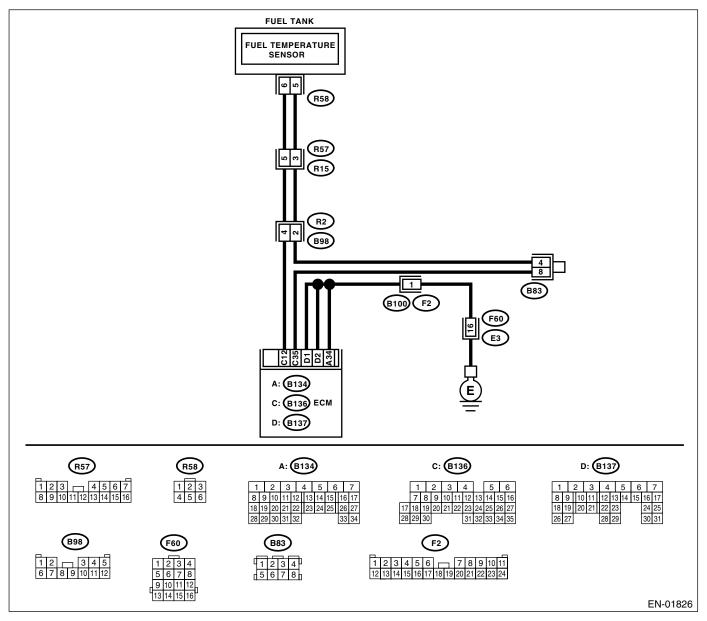
		Sector Series			-
	Step	Check	Yes	No Sti	Id.
1	CHECK CURRENT DATA. 1)Start the engine. 2)Read the data of fuel temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedures, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Is the temperature more than 150°C (302°F)?	Go to step 2.	The malfunction indicator light may light up, however, the circuit is returned to the normal status at the moment.	14105
2	CHECK CURRENT DATA. 1)Turn ignition switch to OFF. 2)Remove the access hole lid. 3)Disconnect the connector from fuel pump. 4)Turn ignition switch to ON. 5)Read the data of fuel temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedures, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Is the temperature less than -40°C (-40°F)?	Replace the fuel temperature sen- sor. <ref. to<br="">EC(STi)-8, Fuel Temperature Sen- sor.&gt;</ref.>	Repair short circuit to ground in har- ness between fuel pump and ECM connector.	

# AI: DTC P0183 — FUEL TEMPERATURE SENSOR "A" CIRCUIT HIGH INPUT —

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-82, DTC P0183 FUEL TEMPERATURE SENSOR "A"</li> CIRCUIT HIGH INPUT -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



		VI Far	y Eria	
Step	Check	Yes	No Studi	
1       CHECK CURRENT DATA.         1)Start the engine.       2)Read the data of fuel temperature sensor signal using Subaru Select Monitor or OBD general scan tool.         NOTE:       •Subaru Select Monitor         For detailed operation procedures, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monito<="" select="" subaru="" td="" to="">         •OBD-II general scan tool         For detailed operation procedures, refer to OBD-II general scan tool         For detailed operation procedures, refer to OBD-II general scan tool</ref.>	r.> the ual.		Repair poor con- tact. NOTE: In this case, repair the following: • Poor contact in fuel pump connec- tor • Poor contact in ECM connector • Poor contact in coupling connector • Poor contact in joint connector	2
<ul> <li>CHECK HARNESS BETWEEN FUEL TEMPERATURE SENSOR AND ECM CONNECTOR.</li> <li>1)Turn ignition switch to OFF.</li> <li>2)Remove the access hole lid.</li> <li>3)Disconnect the connector from fuel pump</li> <li>4)Measure the voltage between fuel pump</li> <li>connector and chassis ground.</li> <li>Connector &amp; terminal</li> <li>(R58) No. 6 (+) — Chassis ground (-):</li> </ul>	<b>C-</b>	to battery in har- ness between ECM and fuel pump connector.	Go to step 3.	
<ul> <li>CHECK HARNESS BETWEEN FUEL TEM PERATURE SENSOR AND ECM CONNECTOR.</li> <li>1)Turn ignition switch to ON.</li> <li>2)Measure the voltage between fuel pump connector and chassis ground.</li> <li><i>Connector &amp; terminal</i> (R58) No. 6 (+) — Chassis ground (-):</li> </ul>	<b>c</b> -	P Repair short circuit to battery in har- ness between ECM and fuel pump connector.		
4 CHECK HARNESS BETWEEN FUEL TEN PERATURE SENSOR AND ECM CONNEL TOR. Measure the voltage between fuel pump connector and chassis ground. <i>Connector &amp; terminal</i> <i>(R58) No. 6 (+) — Chassis ground (-):</i>	C-		Repair harness and connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and fuel pump connector • Poor contact in fuel pump connec- tor • Poor contact in ECM connector • Poor contact in coupling connector	

#### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL

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ENGINE (DIAGNOSTICS)

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Step	Check	Yes	Pro No Sti
<ul> <li>5 CHECK HARNESS BETWEEN FUEL TEM- PERATURE SENSOR AND ECM CONNEC- TOR.</li> <li>1)Turn ignition switch to OFF.</li> <li>2)Disconnect the connector from ECM.</li> <li>3)Measure the resistance of harness between fuel pump connector and ECM.</li> <li>Connector &amp; terminal (R58) No. 5 — (B136) No. 35:</li> </ul>	Is the resistance less than 1 Ω?	Replace the fuel temperature sen- sor. <ref. to<br="">EC(STi)-8, Fuel Temperature Sen- sor.&gt;</ref.>	Repair harness and connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and fuel pump connector • Poor contact in fuel pump connec- tor • Poor contact in ECM connector • Poor contact in coupling connector • Poor contact in coupling connector

#### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

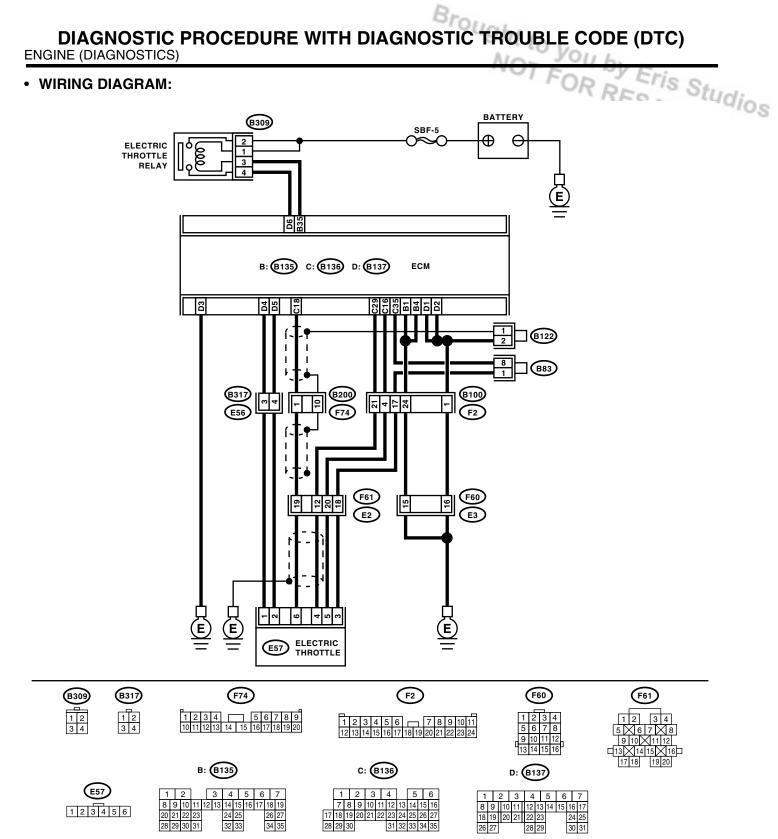
ENGINE (DIÀGNOSTICS)

No

# AJ:DTC P0222 — THROTTLE/PEDAL POSITION SENSOR/SWITCH "B" CIRCUIT F

#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-84, DTC P0222 THROTTLE/PEDAL POSITION SEN-
- SOR/SWITCH "B" CIRCUIT LOW INPUT -, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
  - · Poor driving performance
  - Engine stalls.



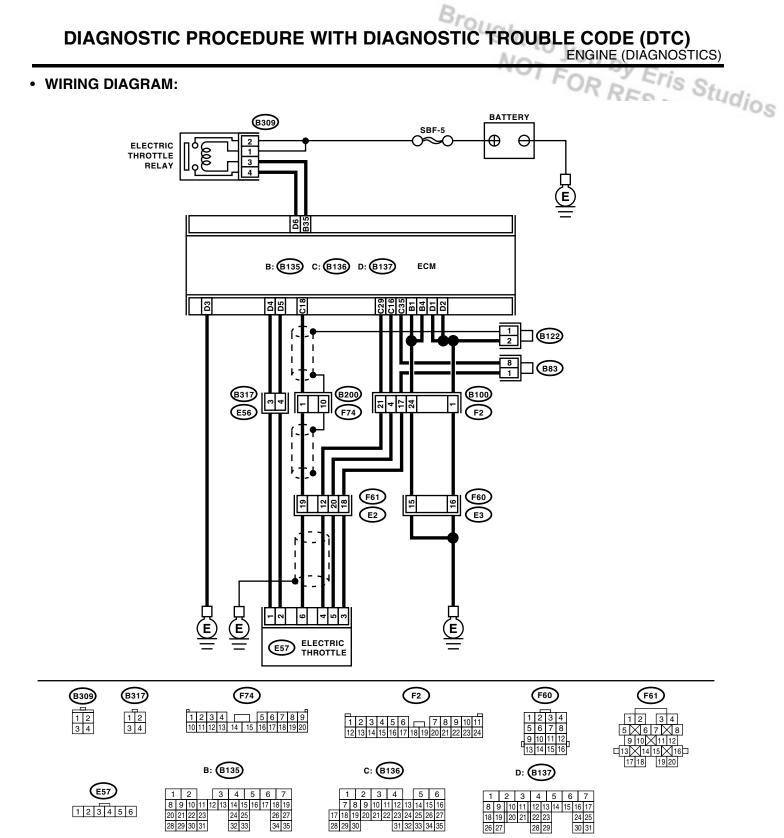
EN-01825

			UT For	Y Eni	-
	Step	Check	Yes	No Sti	Id.
1	<ul> <li>CHECK OUTPUT VOLTAGE OF SENSOR.</li> <li>1)Turn the ignition switch to ON.</li> <li>2)Measure the voltage between ECM connector terminals.</li> <li>Connector &amp; terminal <ul> <li>(B136) No. 29 (+) — (B136) No. 35 (-):</li> </ul> </li> <li>3)Shake the ECM harness and connector, engine harness connectors (E84, E22), electric throttle connector harness while monitoring value of voltage meter.</li> </ul>	Is the voltage more than 0.8 V?		Go to step 3.	<sup>Idios</sup>
2	CHECK POOR CONTACT IN CONNECTORS. Check poor contact in the connectors between the ECM and electric throttle.		Repair the poor contact in connec- tors.	Connector has returned to a nor- mal condition at this time. A tempo- rary poor contact of the connector may be the cause.	
3	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Disconnect the connector from electric throt- tle. 4)Measure the resistance between the ECM connector and electric throttle connector. Connector & terminal (B136) No. 16 — (E57) No. 5:	Is the resistance less than 1 Ω?	Go to step 4.	Repair the open harness connec- tor.	
4	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. Check the resistance between the ECM con- nector and chassis ground. Connector & terminal (B136) No. 29 — Chassis ground: (B136) No. 16 — Chassis ground:	Is the resistance more than 1 $M\Omega$ ?	Go to step 5.	Repair the chas- sis short of har- ness.	
5	<ul> <li>CHECK POWER SURPLY TO SENSOR.</li> <li>1)Connect the ECM connectors.</li> <li>2)Turn the ignition switch to ON.</li> <li>3)Measure the voltage between electric throttle connector and engine ground.</li> <li>Connector &amp; terminal <ul> <li>(E57) No. 5 (+) — Engine ground (-):</li> </ul> </li> <li>4)Shake the ECM harness and connector, engine harness connectors, while monitoring value of voltage meter.</li> </ul>	Is the voltage 4.5 — 5.5 V?	Go to step <b>6</b> .	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	
6	<ul> <li>CHECK SHORT OF ECM.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Measure the resistance between electric throttle connector and engine ground.</li> <li>Connector &amp; terminal</li> <li>(E57) No. 4 — Engine ground:</li> </ul>	Is the resistance more than 10 $\Omega$ ?	Repair the poor contact in electric throttle connector. If problem per- sists, replace the electric throttle.	Repair the poor contact in ECM connectors. If problem persists, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	

# AK:DTC P0223 — THROTTLE/PEDAL POSITION SENSOR/SWITCH "B" CIR-CUIT HIGH INPUT —

#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(STi)-86, DTC P0223 THROTTLE/PEDAL POSITION SEN-
- SOR/SWITCH "B" CIRCUIT HIGH INPUT —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
     Deer driving performance
  - Poor driving performance
  - Engine stalls.



EN-01825

#### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) No- Youh

ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	Dr No St	Sec. 1
1	<ul> <li>CHECK OUTPUT VOLTAGE OF SENSOR.</li> <li>1)Turn the ignition switch to ON.</li> <li>2)Read the data of sub throttle sensor signals, using the Subaru Select Monitor.</li> <li>3)Shake the ECM harness and connector, engine harness connectors (E84, E22), electric throttle connector harness while monitoring value of voltage meter.</li> </ul>		Go to step 2.	Go to step 3.	<sup>IQ</sup> IOS
2	ECM and electric throttle.	connectors between ECM and electric throttle?	Repair the poor contact in connec- tors.	Connector has returned to a nor- mal condition at this time. A tempo- rary poor contact of the connector may be the cause.	
3	<ol> <li>Turn the ignition switch to OFF.</li> <li>Disconnect the connectors from ECM.</li> <li>Disconnect the connectors from electric throttle.</li> <li>Measure the resistance between ECM connector and electric throttle connector.</li> <li>Connector &amp; terminal         <ul> <li>(B136) No. 35 — (E57) No. 3:</li> <li>(B136) No. 29 — (E57) No. 4:</li> </ul> </li> </ol>	Is the resistance less than 1 Ω?	Go to step 4.	Repair the open circuit of harness connector.	
4	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. 1)Connect the ECM connector. 2)Measure the resistance between the electric throttle connector and engine ground. <i>Connector &amp; terminal</i> (E57) No. 3 — Engine ground:	Is the resistance less than 5 Ω?	Go to step <b>5</b> .	Repair the poor contact in ECM connector. If the problem persists, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	
5	<ul> <li>CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE.</li> <li>1)Connect the ECM connector.</li> <li>2)Turn the ignition switch to ON.</li> <li>3)Measure the voltage between electric throttle connector and engine ground.</li> <li>Connector &amp; terminal (E57) No. 5 — Engine ground:</li> <li>4)Shake the ECM harness and connector, engine harness connectors, while monitoring value of voltage meter.</li> </ul>	Is the voltage more than 10 V?	Go to step <b>6</b> .	Repair the battery short of harness between ECM connector and electric throttle connector.	
6	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. 1)Measure the voltage between the electric throttle connector and engine ground. <i>Connector &amp; terminal</i> <i>(E57) No. 4 (+) — Engine ground (–):</i> 2)Shake the ECM harness and connector, engine harness connectors, while monitoring value of voltage meter.	Is the voltage less than 10 V?	Go to step <b>7</b> .	Repair the short of harness between ECM connector and electric throt- tle connector.	

			VI For	y Eni-	_
	Step	Check	Yes	No Sti	Id.
7	CHECK HARNESS BETWEEN ECM AND	Is the resistance more than 1	Repair the poor	Short circuit of	14/0s
	ELECTRIC THROTTLE.	ΜΩ?	contact in electric	sensor power sup-	0
	<ol> <li>Turn the ignition switch to OFF.</li> </ol>		throttle connector.	ply may be the	
	<ol><li>Disconnect the connector from ECM.</li></ol>		If problem per-	cause.	
	<ol><li>Measure the voltage between connectors.</li></ol>		sists, replace the		
	Connector & terminal		electric throttle.		
	(B136) No. 29 — (B136) No. 16:				

### Bro DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS) <sup>Eris</sup> Studios

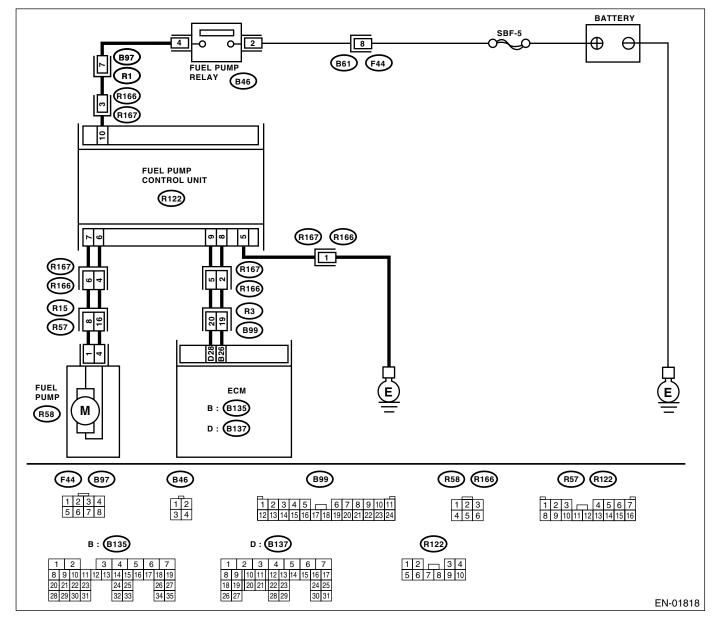
#### AL:DTC P0230 — FUEL PUMP PRIMARY CIRCUIT ·

#### DTC DETECTING CONDITION:

- Immediately at fault recognition
- RESALE • GENERAL DESCRIPTION < Ref. to GD(STi)-88, DTC P0230 - FUEL PUMP PRIMARY CIRCUIT -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



1		Ohaala	EOP .	Stis er	1
		Check	Yes	PEONO St	Idia
1	CHECK POWER SUPPLY CIRCUIT TO FUEL PUMP CONTROL UNIT. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from fuel pump control unit. 3)Turn the ignition switch to ON. 4)Measure the voltage between fuel pump control unit and chassis ground. Connector & terminal (R122) No. 10 (+) — Chassis ground ():			Repair the power supply circuit. NOTE: In this case repair the following: • Open or ground short circuit in har- ness between fuel pump relay and fuel pump control unit • Poor contact in fuel pump control unit connector • Poor contact in fuel pump relay connector	-410S
2	CHECK GROUND CIRCUIT OF FUEL PUMP CONTROL UNIT. 1)Turn the ignition switch to OFF. 2)Measure the resistance of harness between fuel pump control unit and chassis ground. Connector & terminal (R122) No. 5 — Chassis ground:	Is the resistance less than 5 Ω?	Go to step <b>3</b> .	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit between fuel pump control unit and chassis ground • Poor contact in fuel pump control unit connector	
3	CHECK HARNESS BETWEEN FUEL PUMP CONTROL UNIT AND FUEL PUMP CONNEC- TOR. 1)Disconnect the connector from fuel pump. 2)Measure the resistance of harness between fuel pump control unit and fuel pump connec- tor. Connector & terminal (R122) No. 7 — (R58) No. 1: (R122) No. 6 — (R58) No. 4:	Is the resistance less than 1 $\Omega$ ?	Go to step 4.	Repair the open circuit between fuel pump control unit and fuel pump.	
4	CHECK HARNESS BETWEEN FUEL PUMP CONTROL UNIT AND FUEL PUMP CONNEC- TOR. Measure the resistance of harness between fuel pump control unit and chassis ground. <i>Connector &amp; terminal</i> (R122) No. 7 — Chassis ground: (R122) No. 6 — Chassis ground:	Is the resistance more than 1 $M\Omega$ ?	Go to step 5.	Repair the ground short circuit between fuel pump control unit and fuel pump.	

# DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) No- You h

ENGINE (DIAGNOSTICS)

	Step	Check	Yes	No St	
5	CHECK HARNESS BETWEEN FUEL PUMP CONTROL UNIT AND ECM CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Measure the resistance of harness between fuel pump control unit and ECM connector. <i>Connector &amp; terminal</i> (R122) No. 9 — (B137) No. 28: (R122) No. 8 — (B135) No. 26:	Is the resistance less than 1 Ω?	Go to step 6.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit between fuel pump control unit and ECM • Poor contact in fuel pump control unit and ECM con- nector	<sup>rd</sup> ios
6	CHECK HARNESS BETWEEN FUEL PUMP CONTROL UNIT AND ECM CONNECTOR. Measure the resistance of harness between fuel pump control unit and chassis ground. Connector & terminal (R122) No. 9 — Chassis ground: (R122) No. 8 — Chassis ground:	Is the resistance more than 1 $M\Omega$ ?	Go to step 7.	Repair the ground short circuit between fuel pump control unit and ECM.	
7	<b>CHECK POOR CONTACT.</b> Check poor contact in ECM and fuel pump control unit connector.	Is there poor contact in ECM and fuel pump control unit con- nector?	Repair the poor contact in ECM and fuel pump control unit.	Go to step 8.	
8	CHECK EXPERIENCE OF OUT OF GAS.		Complete the diagnosis. NOTE: DTC may be re- corded due to the idle running of fuel pump at out of gas.	Control Unit.>	

#### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

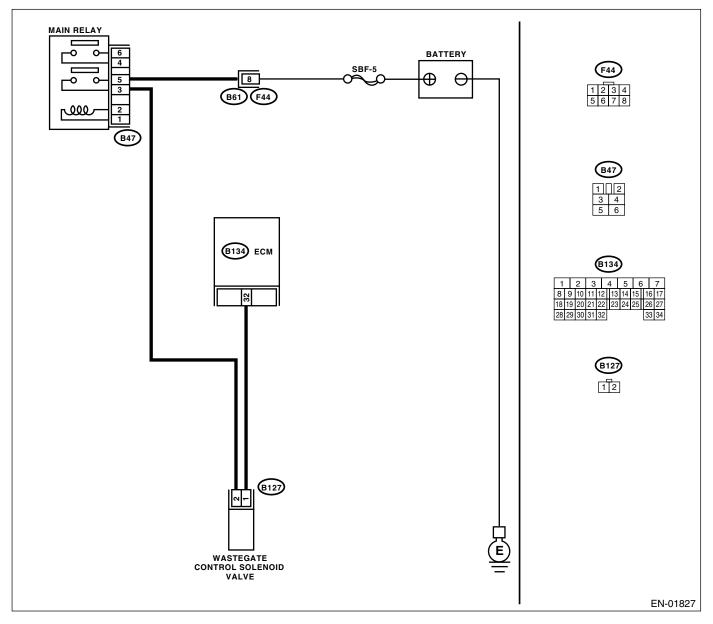
# AM:DTC P0244 — TURBO/SUPER CHARGER WASTEGATE SOLENOID "A" Studios

#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-90, DTC P0244 TURBO/SUPER CHARGER WASTE-
- GATE SOLENOID "A" RANGE/PERFORMANCE -, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
  - Engine stalls.
  - · Poor driving performance

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



#### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOU L

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ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	Pro No St	Id.
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt; NOTE: In this case, it is not necessary to inspect DTC P0244.</ref.>	Valve.>	Idios

#### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

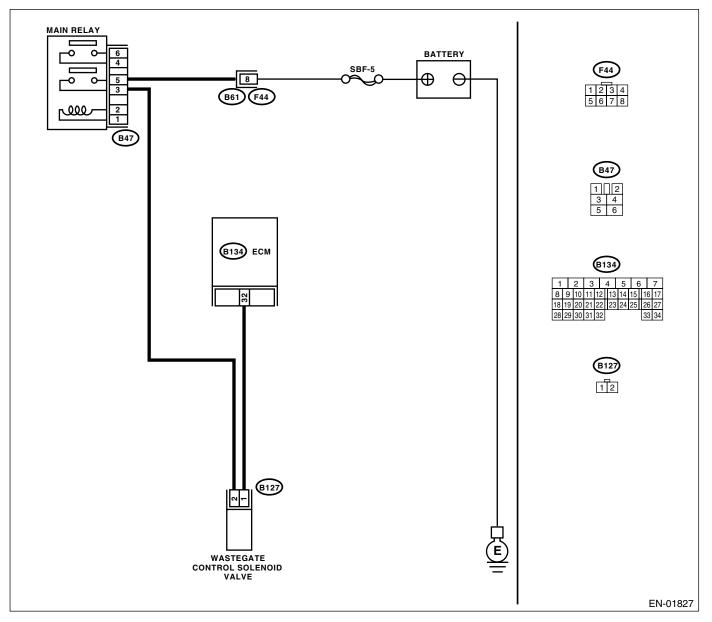
11-

# AN:DTC P0245 — TURBO/SUPER CHARGER WASTEGATE SOLENOID "A" Studios

- DTC DETECTING CONDITION:
  - Immediately at fault recognition
  - GENERAL DESCRIPTION <Ref. to GD(STi)-92, DTC P0245 TURBO/SUPER CHARGER WASTE-</li>
  - GATE SOLENOID "A" LOW —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



# DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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ENGINE (DIAGNOSTICS)

			For	y Eric	1
	Step	Check	Yes	REG No Sti	Id:
1	CHECK OUTPUT SIGNAL FROM ECM. 1)Turn the ignition switch to ON. 2)Measure the voltage between ECM and chassis ground. Connector & terminal (B134) No. 32 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Even if malfunc- tion indicator light lights up, the cir- cuit has returned to a normal condi- tion at this time.	Go to step 2.	<sup>Idios</sup>
2	CHECK HARNESS BETWEEN WASTEGATE CONTROL SOLENOID VALVE AND ECM CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connectors from wastegate control solenoid valve and ECM. 3)Measure the resistance of harness between wastegate control solenoid valve connector and engine ground. Connector & terminal (B127) No. 1 — Engine ground:	Is the resistance less than 10 Ω?	Repair the ground short circuit in har- ness between ECM and waste- gate control sole- noid valve connector.	Go to step 3.	
3	CHECK HARNESS BETWEEN WASTEGATE CONTROL SOLENOID VALVE AND ECM CONNECTOR. Measure the resistance of harness between ECM and wastegate control solenoid valve of harness connector. Connector & terminal (B134) No. 32 — (B127) No. 1:	Is the resistance less than 1 Ω?	Go to step 4.	Repair the open circuit in harness between ECM and wastegate control solenoid valve connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and waste- gate control sole- noid valve connector	
4	CHECK WASTEGATE CONTROL SOLE- NOID VALVE. 1)Remove the wastegate control solenoid valve. 2)Measure the resistance between wastegate control solenoid valve terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance 30 — 40 Ω?	Go to step <b>5</b> .	Replace the wastegate control solenoid valve. <ref. fu(sti)-<br="" to="">36, Wastegate Control Solenoid Valve.&gt;</ref.>	
5	CHECK POWER SUPPLY TO WASTEGATE CONTROL SOLENOID VALVE. 1)Turn the ignition switch to ON. 2)Measure the voltage between wastegate control solenoid valve and engine ground. <i>Connector &amp; terminal</i> (B127) No. 2 (+) — Engine ground (–):	Is the voltage more than 10 V?		Repair the open circuit in harness between main relay and waste- gate control sole- noid valve connector.	
6	CHECK POOR CONTACT. Check poor contact in wastegate control sole- noid valve connector.	Is there poor contact in waste- gate control solenoid valve connector?	Repair the poor contact in waste- gate control sole- noid valve connector.	Contact your SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	

#### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

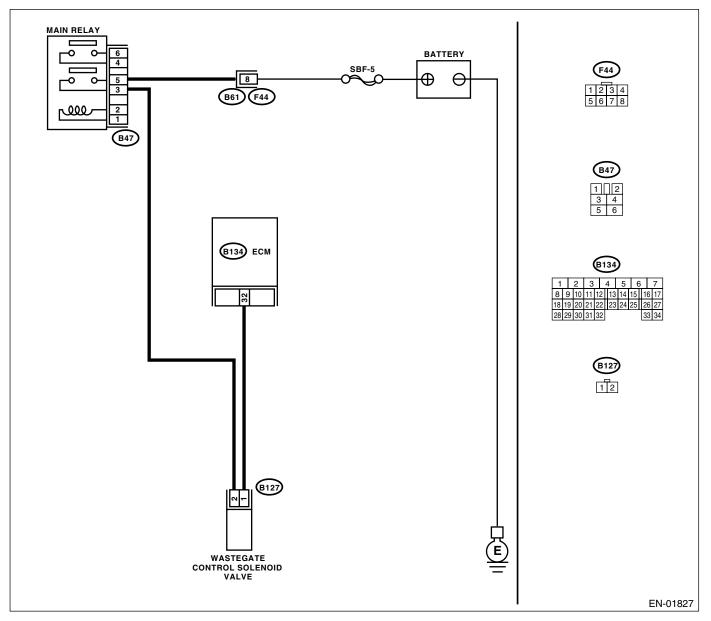
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# AO:DTC P0246 — TURBO/SUPER CHARGER WASTEGATE SOLENOID "A" Surgios

- DTC DETECTING CONDITION:
  - Immediately at fault recognition
  - GENERAL DESCRIPTION < Ref. to GD(STi)-94, DTC P0246 TURBO/SUPER CHARGER WASTE-</li>
  - GATE SOLENOID "A" HIGH -, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



# DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	No St	I.d.
1	CHECK OUTPUT SIGNAL FROM ECM. 1)Turn the ignition switch to ON. 2)Measure the voltage between ECM and chassis ground. Connector & terminal (B134) No. 32 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 3.	Go to step 2.	1010
2	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact in ECM connector.	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	
3	CHECK HARNESS BETWEEN WASTEGATE CONTROL SOLENOID VALVE AND ECM CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from wastegate control solenoid valve. 3)Turn the ignition switch to ON. 4)Measure the voltage between ECM and chassis ground. Connector & terminal (B134) No. 32 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Repair the battery short circuit in har- ness between ECM and waste- gate control sole- noid valve connector. After repair, replace the ECM. <ref. to<br="">FU(STi)-41, Engine Control Module (ECM).&gt;</ref.>	Go to step 4.	
4	CHECK WASTEGATE CONTROL SOLE- NOID VALVE. 1)Turn the ignition switch to OFF. 2)Measure the resistance between wastegate control solenoid valve terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance less than 1 $\Omega$ ?	Replace the wastegate control solenoid valve <ref. fu(sti)-<br="" to="">36, Wastegate Control Solenoid Valve.&gt; and ECM <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.></ref.>	Go to step 5.	
5	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact in ECM connector.	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	

#### AP:DTC P0301 — CYLINDER 1 MISFIRE DETECTED —

NOTE:

For the diagnostic procedure, refer to DTC P0304. <Ref. to EN(STi)-165, DTC P0304 — CYLINDER 4 MIS-FIRE DETECTED —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

#### AQ:DTC P0302 — CYLINDER 2 MISFIRE DETECTED —

NOTE:

For the diagnostic procedure, refer to DTC P0304. <Ref. to EN(STi)-165, DTC P0304 — CYLINDER 4 MIS-FIRE DETECTED —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

#### AR:DTC P0303 — CYLINDER 3 MISFIRE DETECTED —

NOTE:

For the diagnostic procedure, refer to DTC P0304. <Ref. to EN(STi)-165, DTC P0304 — CYLINDER 4 MIS-FIRE DETECTED —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

#### Bre **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS) Eris Studios

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#### AS:DTC P0304 — CYLINDER 4 MISFIRE DETECTED

#### DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- Immediately at fault recognition (A misfire which could damage catalyst occurs.)
- GENERAL DESCRIPTION < Ref. to GD(STi)-96, DTC P0301 CYLINDER 1 MISFIRE DETECTED -
- , Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Engine stalls.
  - Erroneous idling
  - Rough driving

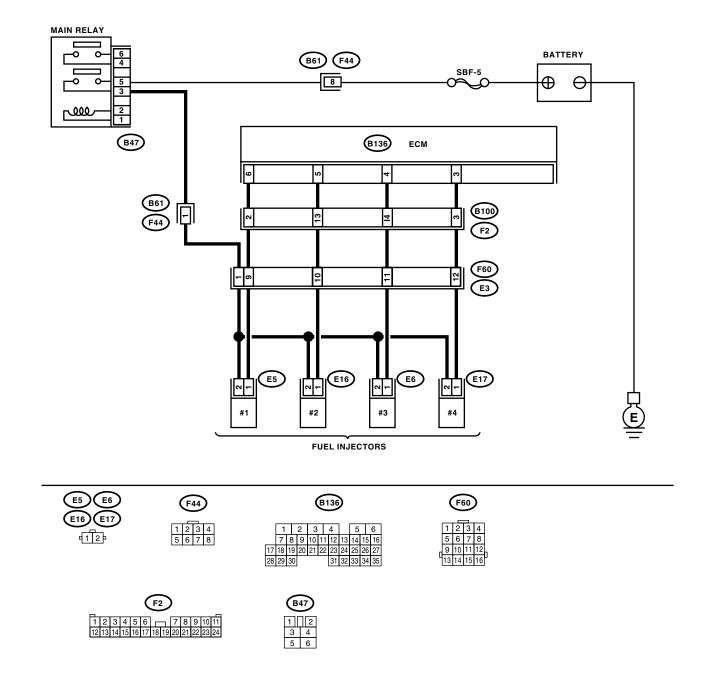
#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) Ar.

ENGINE (DIAGNOSTICS)

#### • WIRING DIAGRAM:



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Eris Studios

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	Step	Check	Yes	PE No Sti	Id:
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt;</ref.>	Go to step 2.	Idios
2	CHECK OUTPUT SIGNAL FROM ECM. 1)Turn the ignition switch to ON. 2)Measure the voltage between ECM connec- tor and chassis ground on faulty cylinders. <i>Connector &amp; terminal</i> #1 (B136) No. 6 (+) — Chassis ground (-): #2 (B136) No. 5 (+) — Chassis ground (-): #3 (B136) No. 4 (+) — Chassis ground (-): #4 (B136) No. 3 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 7.	Go to step 3.	
3	<ul> <li>CHECK HARNESS BETWEEN FUEL INJECTOR AND ECM CONNECTOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from fuel injector on faulty cylinders.</li> <li>3)Disconnect the connector from ECM.</li> <li>4)Measure the resistance between ECM connector and engine ground on faulty cylinders.</li> <li>Connector &amp; terminal</li> <li>#1 (E5) No. 1 — Engine ground:</li> <li>#2 (E16) No. 1 — Engine ground:</li> <li>#3 (E6) No. 1 — Engine ground:</li> <li>#4 (E17) No. 1 — Engine ground:</li> </ul>	Is the resistance more than 1 MΩ?	Go to step 4.	Repair the ground short circuit in har- ness between fuel injector and ECM connector.	
4	CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. Measure the resistance of harness connector between ECM connector and fuel injector on faulty cylinders. <i>Connector &amp; terminal</i> #1 (B136) No. 6 — (E5) No. 1: #2 (B136) No. 5 — (E16) No. 1: #3 (B136) No. 4 — (E6) No. 1: #4 (B136) No. 3 — (E17) No. 1:	Is the resistance less than 1 $\Omega$ ?	Go to step <b>5</b> .	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between ECM and fuel injector connector • Poor contact in coupling connector	
5	CHECK FUEL INJECTOR. Measure the resistance between fuel injector terminals on faulty cylinder. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance 5 — 20 $\Omega$ ?	Go to step 6.	Replace the faulty fuel injector. <ref. to FU(STi)-32, Fuel Injector.&gt;</ref. 	

# DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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ENGINE (DIAGNOSTICS)

		Check	Yes	No
6				
6	CHECK POWER SUPPLY LINE. 1)Turn the ignition switch to ON. 2)Measure the voltage between fuel injector and engine ground on faulty cylinders. <i>Connector &amp; terminal</i> #1 (E5) No. 2 (+) — Engine ground (-): #2 (E16) No. 2 (+) — Engine ground (-): #3 (E6) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-):	Is the voltage more than 10 V?	Repair the poor contact in all con- nectors in fuel injector circuit.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between main relay and fuel injector connector on faulty cylinders • Poor contact in coupling connector • Poor contact in main relay con- nector • Poor contact in fuel injector con- nector on faulty cylinders
7	CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from fuel injector on faulty cylinder. 3)Turn the ignition switch to ON. 4)Measure the voltage between ECM connec- tor and chassis ground on faulty cylinders. Connector & terminal #1 (B136) No. 6 (+) — Chassis ground (-): #2 (B136) No. 5 (+) — Chassis ground (-): #3 (B136) No. 4 (+) — Chassis ground (-): #4 (B136) No. 3 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Repair the battery short circuit in har- ness between ECM and fuel injector. After repair, replace the ECM. <ref. to<br="">FU(STi)-41, Engine Control Module (ECM).&gt;</ref.>	Go to step 8.
8	CHECK FUEL INJECTOR. 1)Turn the ignition switch to OFF. 2)Measure the resistance between fuel injector terminals on faulty cylinder. Terminals No. 1 — No. 2:	Is the resistance less than 1 $\Omega$ ?	Replace the faulty fuel injector <ref. to FU(STi)-32, Fuel Injector.&gt; and ECM <ref. to<br="">FU(STi)-41, Engine Control Module (ECM).&gt;</ref.></ref. 	Go to step 9.
9	CHECK INSTALLATION OF CAMSHAFT PO- SITION SENSOR/CRANKSHAFT POSITION SENSOR.	Is the camshaft position sensor or crankshaft position sensor loosely installed?	Tighten the cam- shaft position sen- sor or crankshaft position sensor.	Go to step <b>10.</b>
10	CHECK CRANKSHAFT SPROCKET. Remove the timing belt cover.	Is the crankshaft sprocket rusted or does it have broken teeth?	Replace the crank- shaft sprocket. <ref. me(sti)-<br="" to="">56, Crankshaft Sprocket.&gt;</ref.>	
11	CHECK INSTALLATION CONDITION OF TIMING BELT. Turn the crankshaft, and align alignment mark on crankshaft sprocket with alignment mark on cylinder block.	Is the timing belt dislocated from its proper position?	Repair the installa- tion condition of timing belt. <ref. to ME(STi)-46, Timing Belt Assembly.&gt;</ref. 	Go to step 12.

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	Step	Check	Yes	No St	Id:-
12	CHECK FUEL LEVEL.	Is the fuel meter indication higher than the "Lower" level?	Go to step 13.	Replenish the fuel so fuel meter indi- cation is higher than the "Lower" level. After replen- ishing fuel; Go to step <b>13.</b>	1410S
13	CHECK STATUS OF MALFUNCTION INDI- CATOR LIGHT. 1)Clear the memory using Subaru Select Mon- itor. <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> 2)Start the engine, and drive the vehicle more than 10 minutes.</ref.>	Is the malfunction indicator light coming on or blinking?	Go to step 15.	Go to step 14.	
14	CHECK CAUSE OF MISFIRE DIAGNOSED.	Was the cause of misfire diag- nosed when the engine is run- ning?	Finish the diag- nostics operation, if the engine has no abnormality.	Repair the poor contact. NOTE: In this case, repair the following: • Poor contact in ignition coil con- nector • Poor contact in fuel injector con- nector on faulty cylinders • Poor contact in ECM connector • Poor contact in coupling connector	
15	CHECK AIR INTAKE SYSTEM.	Is there a fault in air intake sys- tem?	Repair the air intake system. NOTE: Check the follow- ing items: • Are there air leaks or air suction caused by loose or dislocated nuts and bolts? • Are there cracks or any disconnec- tion of hoses?	Go to step <b>16</b> .	
16	CHECK CYLINDER.	Is there a fault in that cylinder?	Repair or replace the faulty parts. NOTE: Check the follow- ing items. • Spark plug • Fuel injector • Compression pressure	Go to DTC P0171 and P0172. <ref. to EN(STi)-138, DTC P0171 — SYSTEM TOO LEAN (BANK 1) — , Diagnostic Pro- cedure with Diag- nostic Trouble Code (DTC).&gt;</ref. 	

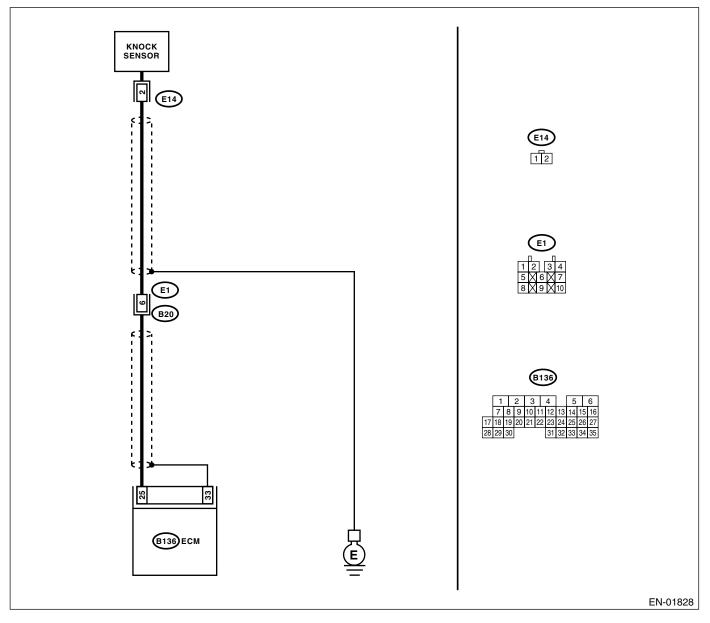
## AT:DTC P0327 — KNOCK SENSOR 1 CIRCUIT LOW INPUT (BANK 1 OR SINGLE SENSOR) —

#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(STi)-103, DTC P0327 KNOCK SENSOR 1 CIRCUIT LOW INPUT (BANK 1 OR SINGLE SENSOR) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Poor driving performance
  - Knocking occurs.

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



	Step	Check	Yes	Nos Sti	lel.
1	CHECK HARNESS BETWEEN KNOCK SEN- SOR AND ECM CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Measure the resistance between ECM har- ness connector and chassis ground. <i>Connector &amp; terminal</i> <i>(B136) No. 25 — Chassis ground:</i>	Is the resistance more than 700 kΩ?	Go to step 2.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between knock sensor and ECM connector • Poor contact in knock sensor con- nector • Poor contact in coupling connector	<sup>rq</sup> ios
2	<ul> <li>CHECK KNOCK SENSOR.</li> <li>1)Disconnect the connector from knock sensor.</li> <li>2)Measure the resistance between knock sensor connector terminal and engine ground.</li> <li><i>Terminals</i></li> <li><i>No. 2 — Engine ground:</i></li> </ul>	Is the resistance more than 700 kΩ?	Go to step 3.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Poor contact in knock sensor con- nector • Poor contact in coupling connector	
3	CHECK CONDITION OF KNOCK SENSOR INSTALLATION.	Is the knock sensor installa- tion bolt tightened securely?	Replace the knock sensor. <ref. to<br="">FU(STi)-29, Knock Sensor.&gt;</ref.>	sensor installation	

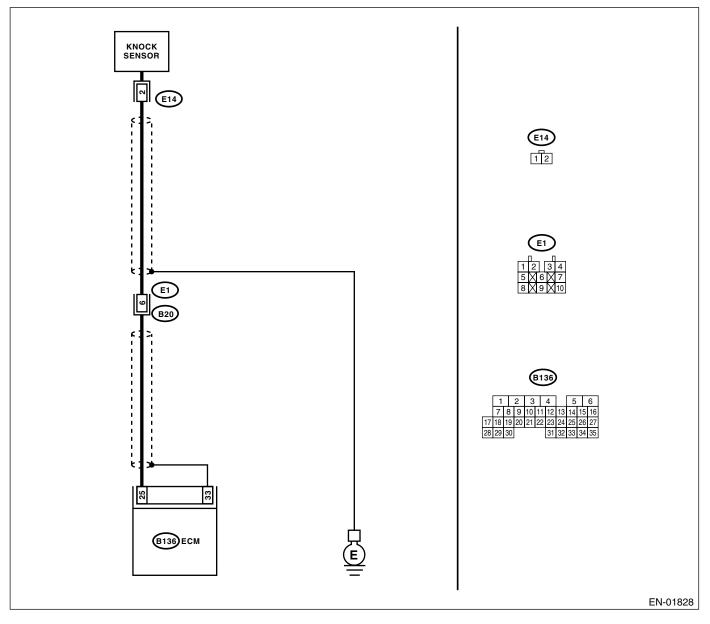
# AU:DTC P0328 — KNOCK SENSOR 1 CIRCUIT HIGH INPUT (BANK 1 OR SIN-GLE SENSOR) —

#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-105, DTC P0328 KNOCK SENSOR 1 CIRCUIT HIGH INPUT (BANK 1 OR SINGLE SENSOR) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Poor driving performance
  - Knocking occurs.

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



	TEAL YER			
Step	Check	Yes	No Sti	
1 CHECK HARNESS BETWEEN KNOCK SEN SOR AND ECM CONNECTOR. Measure the resistance of harness between ECM connector and chassis ground. <i>Connector &amp; terminal</i> (B136) No. 25 — Chassis ground:	- Is the resistance less than 400 kΩ?	Go to step 2.	Go to step 3.	
<ul> <li>2 CHECK KNOCK SENSOR.         <ol> <li>1)Disconnect the connector from knock sensor.</li> <li>2)Measure the resistance between knock sensor connector terminal and engine ground.</li> <li>Terminals</li> <li>No. 2 — Engine ground:</li> </ol> </li> </ul>	Is the resistance less than 400 kΩ?	Replace the knock sensor. <ref. to<br="">FU(STi)-29, Knock Sensor.&gt;</ref.>	short circuit in har-	
<ul> <li>CHECK INPUT SIGNAL FOR ECM.</li> <li>1)Connect the connectors to ECM and knock sensor.</li> <li>2)Turn the ignition switch to ON.</li> <li>3)Measure the voltage between ECM and chassis ground.</li> <li>Connector &amp; terminal (B136) No. 25 (+) — Chassis ground (-):</li> </ul>	Is the voltage more than 2 V?	Even if malfunc- tion indicator light lights up, the cir- cuit has returned to a normal condi- tion at this time. (However, the possibility of poor contact still remains.) NOTE: In this case, repair the following: • Poor contact in knock sensor con- nector • Poor contact in ECM connector • Poor contact in coupling connector	Repair the poor contact in ECM connector.	

#### AV:DTC P0335 — CRANKSHAFT POSITION SENSOR "A" CIRCUIT —

#### • DTC DETECTING CONDITION:

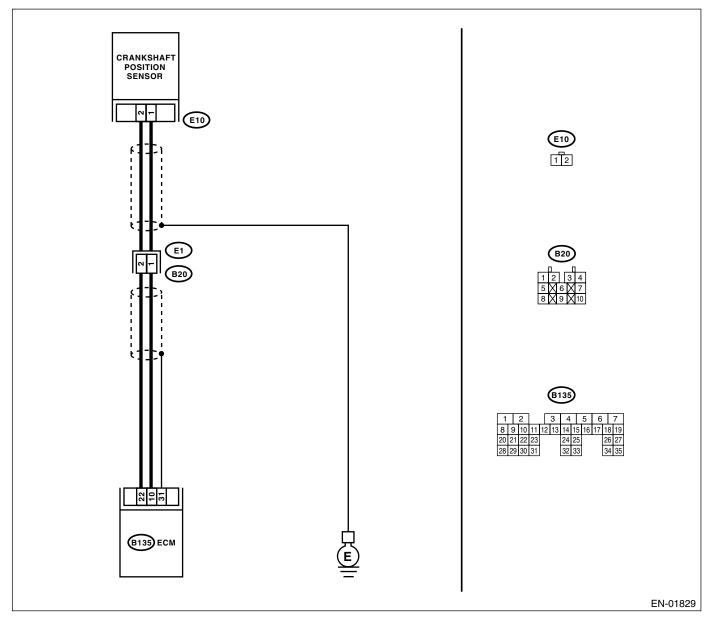
- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-107, DTC P0335 CRANKSHAFT POSITION SENSOR "A" CIRCUIT —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

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- TROUBLE SYMPTOM:
  - Engine stalls.
  - Failure of engine to start

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



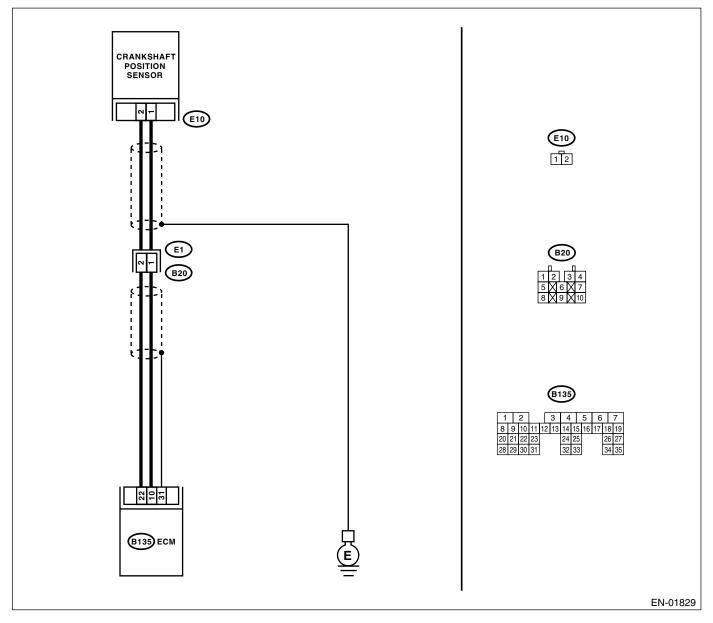
		For	Y Eria	-
Step	Check	Yes	No Sti	Id.
1 CHECK HARNESS BETWEEN CRANK-	Is the resistance more than	Repair the har-	Go to step 2.	10S
SHAFT POSITION SENSOR AND ECM CON-	100 kΩ?	ness and connec-		
NECTOR.		tor.		
<ol> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from crankshaft</li> </ol>		NOTE:		
position sensor.		In this case, repair the following:		
3)Measure the resistance of harness between		<ul> <li>Open circuit in</li> </ul>		
crankshaft position sensor connector and		harness between		
engine ground.		crankshaft posi-		
Connector & terminal		tion sensor and		
(E10) No. 1 — Engine ground:		ECM connector		
		Poor contact in		
		<ul><li>ECM connector</li><li>Poor contact in</li></ul>		
		coupling connector		
2 CHECK HARNESS BETWEEN CRANK-	Is the resistance more than 1	Go to step <b>3</b> .	Repair the ground	
SHAFT POSITION SENSOR AND ECM CON-			short circuit in har-	
NECTOR.			ness between	
Measure the resistance of harness between			crankshaft posi-	
crankshaft position sensor connector and			tion sensor and	
engine ground.			ECM connector.	
Connector & terminal (E10) No. 1 — Engine ground:			NOTE:	
(ETO) NO. 1 — Engine ground.			The harness be- tween both con-	
			nectors are	
			shielded. Repair	
			ground short circuit	
			in harness togeth-	
			er with shield.	
3 CHECK HARNESS BETWEEN CRANK-	Is the resistance less than 5	Go to step 4.	Repair the har-	
SHAFT POSITION SENSOR AND ECM CON-	Ω?		ness and connec-	
NECTOR.			tor.	
Measure the resistance of harness between crankshaft position sensor connector and			NOTE: In this case, repair	
engine ground.			the following:	
Connector & terminal			<ul> <li>Open circuit in</li> </ul>	
(E10) No. 2 — Engine ground:			harness between	
			crankshaft posi-	
			tion sensor and	
			ECM connector	
			<ul> <li>Poor contact in ECM connector</li> </ul>	
			<ul> <li>Poor contact in</li> </ul>	
			coupling connector	
4 CHECK CONDITION OF CRANKSHAFT PO-	Is the crankshaft position sen-	Go to step 5.	Tighten the crank-	
SITION SENSOR.	sor installation bolt tightened	r -	shaft position sen-	
	securely?		sor installation bolt	
			securely.	
5 CHECK CRANKSHAFT POSITION SENSOR.	Is the resistance $1 - 4 k\Omega$ ?	Repair the poor	Replace the crank-	
1)Remove the crankshaft position sensor.		contact in crank-	shaft position sen-	
2)Measure the resistance between connector		shaft position sen-	sor. <ref. th="" to<=""><th></th></ref.>	
terminals of crankshaft position sensor. <i>Terminals</i>		sor connector.	FU(STi)-27, Crankshaft Posi-	
No. 1 — No. 2:			tion Sensor.>	
	l			I

## AW:DTC P0336 — CRANKSHAFT POSITION SENSOR "A" CIRCUIT RANGE/ PERFORMANCE —

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault
  - GENERAL DESCRIPTION < Ref. to GD(STi)-109, DTC P0336 CRANKSHAFT POSITION SENSOR
  - "A" CIRCUIT RANGE/PERFORMANCE -, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Engine stalls.
  - Failure of engine to start

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



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	Step	Check	Yes	Pro No Sti	lel.
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt;</ref.>	Go to step 2.	<sup>1410</sup> S
2	CHECK CONDITION OF CRANKSHAFT PO- SITION SENSOR. Turn the ignition switch to OFF.	Is the crankshaft position sen- sor installation bolt tightened securely?	Go to step 3.	Tighten the crank- shaft position sen- sor installation bolt securely.	
3	CHECK CRANKSHAFT SPROCKET. Remove the front belt cover.	Are the crankshaft sprocket teeth cracked or damaged?	Replace the crank- shaft sprocket. <ref. fu(sti)-<br="" to="">27, Crankshaft Position Sensor.&gt;</ref.>	Go to step 4.	
4	CHECK INSTALLATION CONDITION OF TIMING BELT. Turn the crankshaft, and align alignment mark on crankshaft sprocket with alignment mark on cylinder block.		tion condition of timing belt. <ref. to ME(STi)-46, Timing Belt</ref. 	Replace the crank- shaft position sen- sor. <ref. to<br="">FU(STi)-27, Crankshaft Posi- tion Sensor.&gt;</ref.>	

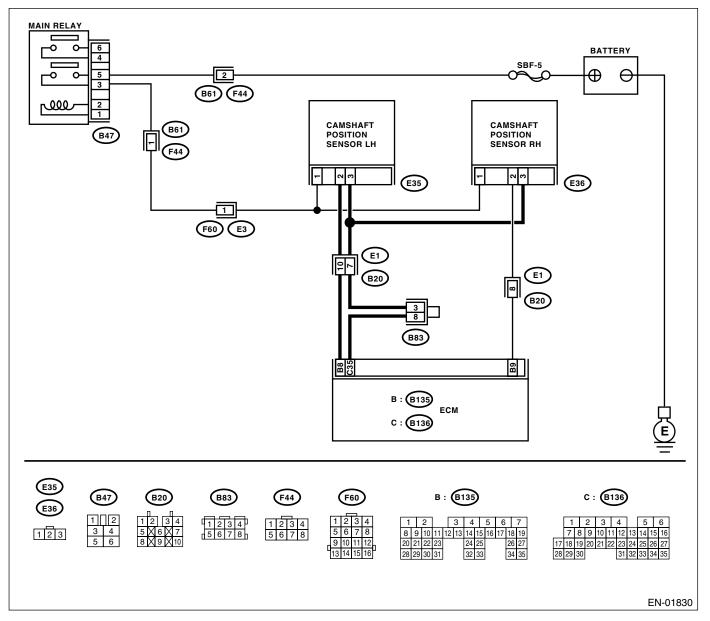
## AX:DTC P0340 — CAMSHAFT POSITION SENSOR "A" CIRCUIT (BANK 1 OR SINGLE SENSOR) —

#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-111, DTC P0340 CAMSHAFT POSITION SENSOR "A" CIRCUIT (BANK 1 OR SINGLE SENSOR) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Engine stalls.
  - Failure of engine to start

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



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	Step	Check	Yes	No Sti	Id:
1	CHECK POWER SUPPLY TO CAMSHAFT POSITION SENSOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from camshaft position sensor. 3)Measure the voltage between camshaft posi- tion sensor and engine ground. <i>Connector &amp; terminal</i> (E36) No. 1 (+) — Engine ground (-):		Repair the battery short circuit between main relay connector and camshaft position sensor connector.	Go to step 2.	Idios
2	CHECK POWER SUPPLY TO CAMSHAFT POSITION SENSOR. 1)Turn the ignition switch to ON. 2)Measure the voltage between camshaft posi- tion sensor and engine ground. <i>Connector &amp; terminal</i> (E36) No. 1 (+) — Engine ground (-):	Is the voltage more than 10 V?	Go to step <b>3</b> .	Repair the open or ground short cir- cuit between main relay connector and camshaft position sensor connector.	
3	CHECK HARNESS BETWEEN CAMSHAFT POSITION SENSOR AND ECM. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Measure the resistance between camshaft position sensor and ECM. Connector & terminal (E36) No. 2 — (E135) No. 9: (E36) No. 3 — (E136) No. 35:	Is the resistance less than 1 Ω?	Go to step 4.	Repair the open circuit between camshaft position sensor and ECM.	
4	CHECK HARNESS BETWEEN CAMSHAFT POSITION SENSOR AND ECM. Measure the resistance between camshaft position sensor and engine ground. Connector & terminal (E36) No. 2 — Engine ground: (E36) No. 3 — Engine ground:	Is the resistance more than 1 M $\Omega$ ?	Go to step <b>5</b> .	Repair the ground short circuit between camshaft position sensor and ECM.	
5	CHECK CONDITION OF CAMSHAFT POSI- TION SENSOR.	Is the camshaft position sensor installation bolt tightened securely?	Go to step <b>6</b> .	Tighten the cam- shaft position sen- sor installation bolt securely.	
6	CHECK CAMSHAFT POSITION SENSOR. Check the camshaft position sensor wave form. <ref. control<br="" en(sti)-18,="" engine="" to="">Module (ECM) I/O Signal.&gt;</ref.>	Is any abnormality found in waveform?	Replace the cam- shaft position sen- sor. <ref. to<br="">FU(STi)-28, Cam- shaft Position Sen- sor.&gt;</ref.>	Go to step 7.	
7	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact in ECM connector.	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	

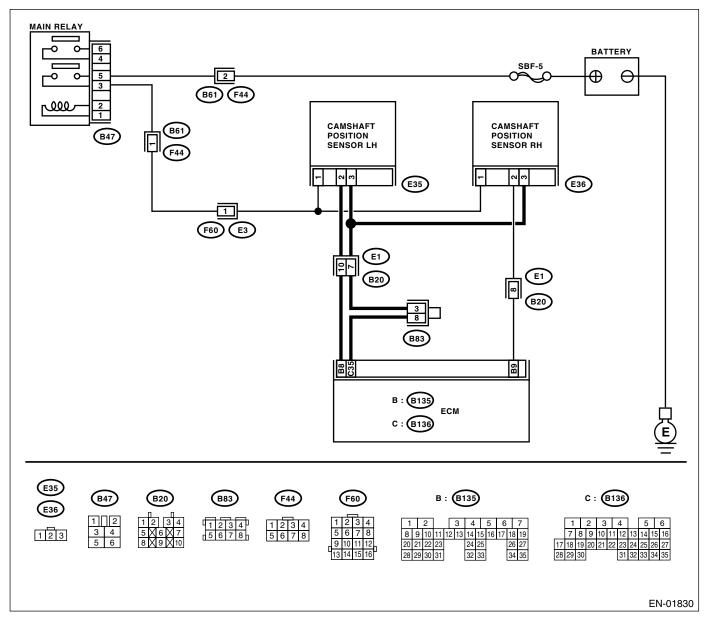
#### Studios AY:DTC P0345 — CAMSHAFT POSITION SENSOR "A" CIRCUIT (BANK 2)

#### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-113, DTC P0345 CAMSHAFT POSITION SENSOR "A"</li> CIRCUIT (BANK 2) -, Diagnostic Trouble Code (DTC) Detecting Criteria >
- TROUBLE SYMPTOM:
  - Engine stalls.
  - · Failure of engine to start

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



		V For	y Fri-	-
Step	Check	Yes	No Sti	Id:
<ol> <li>CHECK POWER SUPPLY TO CAMSHAFT POSITION SENSOR.         <ol> <li>Turn the ignition switch to OFF.</li> <li>Disconnect the connector from camshaft position sensor.</li> <li>Measure the voltage between camshaft position sensor and engine ground.</li> <li>Connector &amp; terminal (E35) No. 1 (+) — Engine ground (-):</li> </ol> </li> </ol>	-	Repair the battery short circuit between main relay connector and camshaft position sensor connector.	Go to step 2.	Idios
<ul> <li>CHECK POWER SUPPLY TO CAMSHAFT POSITION SENSOR.         <ol> <li>Turn the ignition switch to ON.</li> <li>Measure the voltage between camshaft position sensor and engine ground.</li> <li>Connector &amp; terminal</li> <li>(E35) No. 1 (+) — Engine ground (-):</li> </ol> </li> </ul>	Is the voltage more than 10 V?	Go to step <b>3</b> .	Repair the open or ground short cir- cuit between main relay connector and camshaft position sensor connector.	
<ul> <li>CHECK HARNESS BETWEEN CAMSHAFT POSITION SENSOR AND ECM.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from ECM.</li> <li>3)Measure the resistance between camshaft position sensor and ECM.</li> <li>Connector &amp; terminal (E35) No. 2 — (B135) No. 8: (E35) No. 3 — (B136) No. 35:</li> </ul>	Is the resistance less than 1 $\Omega$ ?	Go to step 4.	Repair the open circuit between camshaft position sensor and ECM.	
4 CHECK HARNESS BETWEEN CAMSHAFT POSITION SENSOR AND ECM. Measure the resistance between camshaft position sensor and engine ground. <i>Connector &amp; terminal</i> (E35) No. 2 — Engine ground: (E35) No. 3 — Engine ground:	Is the resistance more than 1 $M\Omega$ ?	Go to step <b>5</b> .	Repair the ground short circuit between camshaft position sensor and ECM.	
5 CHECK CONDITION OF CAMSHAFT POSI- TION SENSOR.	Is the camshaft position sensor installation bolt tightened securely?	Go to step 6.	Tighten the cam- shaft position sen- sor installation bolt securely.	
6 CHECK CAMSHAFT POSITION SENSOR. Check the camshaft position sensor wave form. <ref. control<br="" en(sti)-18,="" engine="" to="">Module (ECM) I/O Signal.&gt;</ref.>	Is any abnormality found in waveform?	Replace the cam- shaft position sen- sor. <ref. to<br="">FU(STi)-28, Cam- shaft Position Sen- sor.&gt;</ref.>	Go to step 7.	
7 CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact in ECM connector.	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	

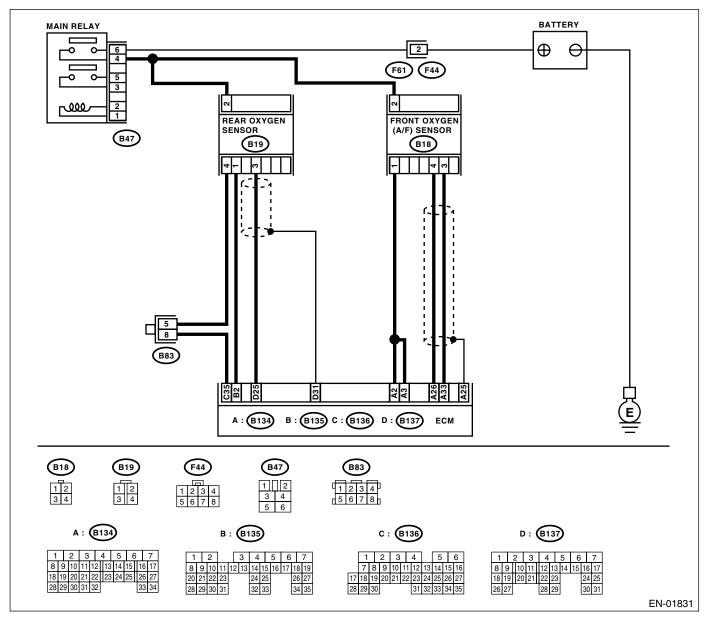
## AZ:DTC P0420 — CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (BANK 1) —

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault
  - GENERAL DESCRIPTION <Ref. to GD(STi)-114, DTC P0420 CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (BANK 1) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Engine stalls.
  - Idle mixture is out of specifications.

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

• WIRING DIAGRAM:



FOD Y Eris out					1
	Step	Check	Yes	No Sti	Id:
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt; NOTE: In this case, it is not necessary to inspect DTC P0420.</ref.>	Go to step 2.	10 <sub>5</sub>
2	CHECK EXHAUST SYSTEM. Check for gas leaks or air suction caused by loose or dislocated nuts and bolts, and open hole at exhaust pipes. NOTE: Check the following positions. •Between cylinder head and front exhaust pipe •Between front exhaust pipe and front catalytic converter •Between front catalytic converter and rear cat- alytic converter	Is there a fault in exhaust sys- tem?	Repair or replace the exhaust sys- tem. <ref. to<br="">EX(H4DOTC)-2, General Descrip- tion.&gt;</ref.>	Go to step <b>3</b> .	
3	CHECK REAR CATALYTIC CONVERTER. Separate the rear catalytic converter from rear exhaust pipe.	Is there damage at rear face of rear catalyst?	Replace the front catalytic con- verter. <ref. to<br="">EC(STi)-3, Front Catalytic Con- verter.&gt; and rear catalytic converter <ref. ec(sti)-<br="" to="">4, Rear Catalytic Converter.&gt;</ref.></ref.>	Go to step 4.	
4	CHECK FRONT CATALYTIC CONVERTER. Remove the front catalytic converter.	Is there damage at rear face or front face of front catalyst?	Replace the front catalytic con- verter. <ref. to<br="">EC(STi)-3, Front Catalytic Con- verter.&gt;</ref.>	Contact your SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	

## BA:DTC P0442 — EVAPORATIVE EMISSION CONTROL SYSTEM LEAK DE-TECTED (SMALL LEAK) —

## • DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(STi)-117, DTC P0442 — EVAPORATIVE EMISSION CON-TROL SYSTEM LEAK DETECTED (SMALL LEAK) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

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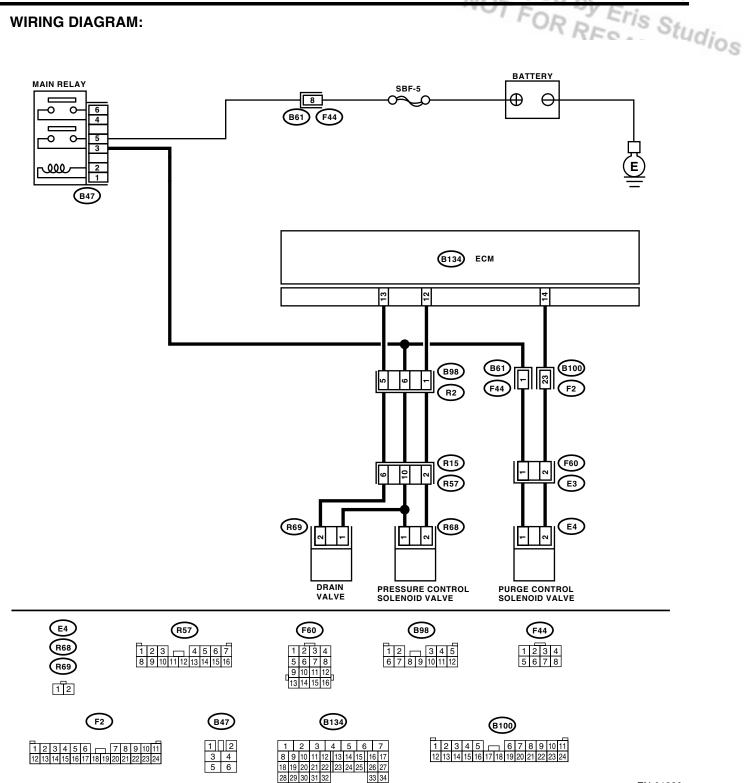
- TROUBLE SYMPTOM:
  - Fuel odor
  - There is a hole of more than 1.0 mm (0.04 in) dia. in evaporation system or fuel tank.

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

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WIRING DIAGRAM: •



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## Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOU L

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	Step	Check	Yes	No Sti	Idia
1	CHECK FOR OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt;</ref.>	Go to step 2.	Idios
2	<ol> <li>1)Turn ignition switch to OFF.</li> <li>2)Check the fuel filler cap.</li> <li>NOTE:</li> <li>The DTC is stored in memory if fuel filler cap is or was loose or if the cap chain was caught while tightening.</li> </ol>		Go to step 3.	Tighten fuel filler cap securely.	
3		Is the fuel filler cap SUBARU genuine?	Go to step 4.	Replace with a SUBARU genuine fuel filler cap.	
4		fuel filler pipe?	Repair or replace the fuel filler cap and fuel filler pipe. <ref. fu(sti)-<br="" to="">49, Fuel Filler Pipe.&gt;</ref.>	Go to step 5.	
5	CHECK DRAIN VALVE. 1)Connect the test mode connector. 2)Turn ignition switch to ON. 3)Operate the drain valve. NOTE: Drain valve operation can also be executed us- ing Subaru Select Monitor. For the procedure, refer to "Compulsory Valve Operation Check Mode". <ref. compulsory="" en(sti)-43,="" to="" valve<br="">Operation Check Mode.&gt;</ref.>		Go to step 6.	Replace the drain valve. <ref. to<br="">EC(STi)-18, Drain Valve.&gt;</ref.>	
6			Go to step 7.	Replace the purge control solenoid valve. <ref. to<br="">EC(STi)-6, Purge Control Solenoid Valve.&gt;</ref.>	
7	CHECK PRESSURE CONTROL SOLENOID		Go to step 8.	Replace the pres- sure control sole- noid valve. <ref. to EC(STi)-12, Pressure Control Solenoid Valve.&gt;</ref. 	
8	TROL SYSTEM LINE.	mm (0.04 in) dia. on evapora- tion line?	Repair or replace the evaporation line. <ref. to<br="">FU(STi)-63, Fuel Delivery, Return and Evaporation Lines.&gt;</ref.>	Go to step <b>9</b> .	

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	Step	Check	Yes	RES'Nos Sti	Id:
9	CHECK CANISTER.	Is the canister damaged or is there a hole of more than 1.0 mm (0.04 in) dia. in it?	Repair or replace the canister. <ref. to EC(STi)-5, Can- ister.&gt;</ref. 	and the second second	Idio
10	CHECK FUEL TANK. Remove the fuel tank. <ref. fu(sti)-46,<br="" to="">Fuel Tank.&gt;</ref.>	Is the fuel tank damaged or is there a hole of more than 1.0 mm (0.04 in) dia. in it?	Repair or replace the fuel tank. <ref. to FU(STi)-46, Fuel Tank.&gt;</ref. 	Go to step 11.	
11	CHECK ANY OTHER MECHANICAL TROU- BLE IN EVAPORATIVE EMISSION CON- TROL SYSTEM.	Are there holes of more than 1.0 mm (0.04 in) dia., cracks, clogging, or disconnections, bend, misconnection of hoses or pipes in evaporative emis- sion control system?	Repair or replace the hoses or pipes.	Contact with SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	

# BB:DTC P0447 — EVAPORATIVE EMISSION CONTROL SYSTEM VENT CON-TROL CIRCUIT OPEN —

• DTC DETECTING CONDITION:

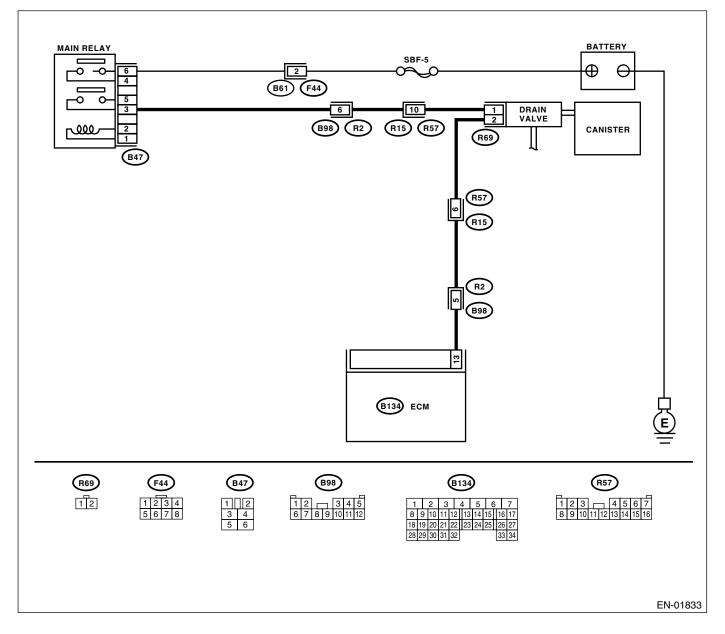
• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(STi)-144, DTC P0447 — EVAPORATIVE EMISSION CON-TROL SYSTEM VENT CONTROL CIRCUIT OPEN —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

## CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

#### • WIRING DIAGRAM:



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	Step	Check	Yes	PE No St	Id:
1	CHECK OUTPUT SIGNAL FROM ECM. 1)Turn ignition switch to ON. 2)Measure the voltage between ECM and chassis ground. Connector & terminal (B134) No. 13 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Go to step 3.	14105
2	CHECK FOR POOR CONTACT. Check for poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	The malfunction indicator light may light up, however, the circuit is returned to the normal status at the moment. (However, the possibility of poor contact still remains.) NOTE: In this case, repair the following: • Poor contact in drain valve con- nector • Poor contact in ECM connector • Poor contact in coupling connector	
3	<ul> <li>CHECK HARNESS BETWEEN DRAIN</li> <li>VALVE AND ECM CONNECTOR.</li> <li>1)Turn ignition switch to OFF.</li> <li>2)Disconnect the connectors from drain valve and ECM.</li> <li>3)Measure the resistance of harness between drain valve connector and chassis ground.</li> <li>Connector &amp; terminal</li> <li>(R69) No. 2 — Chassis ground:</li> </ul>	Is the resistance more than 1 $M\Omega$ ?	Go to step <b>4</b> .	Repair short circuit to ground in har- ness between ECM and drain valve connector.	
4	CHECK HARNESS BETWEEN DRAIN VALVE AND ECM CONNECTOR. Measure the resistance of harness between ECM and drain valve connector. Connector & terminal (B134) No. 13 — (R69) No. 2:	Is the resistance less than 1 $\Omega$ ?	Go to step <b>5</b> .	Repair harness and connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and drain valve connector • Poor contact in coupling connector	
5	CHECK DRAIN VALVE. Measure the resistance between drain valve terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance $10 - 100 \Omega$ ?	Go to step <b>6</b> .	Replace the drain valve. <ref. to<br="">EC(STi)-18, Drain Valve.&gt;</ref.>	

# DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) No- You h

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	Step	Check	Yes	PEO NO St	Id:
6	CHECK POWER SUPPLY TO DRAIN VALVE. 1)Turn ignition switch to ON.	Is the voltage more than 10 V?	Go to step 7.	Repair harness and connector.	14/0
	2)Measure the voltage between drain valve and chassis ground. <i>Connector &amp; terminal</i> <i>(R69) No. 1 (+) — Chassis ground (–):</i>			NOTE: In this case, repair the following: • Open circuit in harness between main relay and drain valve • Poor contact in coupling connector • Poor contact in main relay con- nector	
7	CHECK FOR POOR CONTACT. Check for poor contact in drain valve connec- tor.	Is there poor contact in drain valve connector?	Repair poor con- tact in drain valve connector.	Contact with SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	

## Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** A + --

ENGINE (DIÀGNOSTICS)

# BC:DTC P0448 — EVAPORATIVE EMISSION CONTROL SYSTEM VENT CON-

## • DTC DETECTING CONDITION:

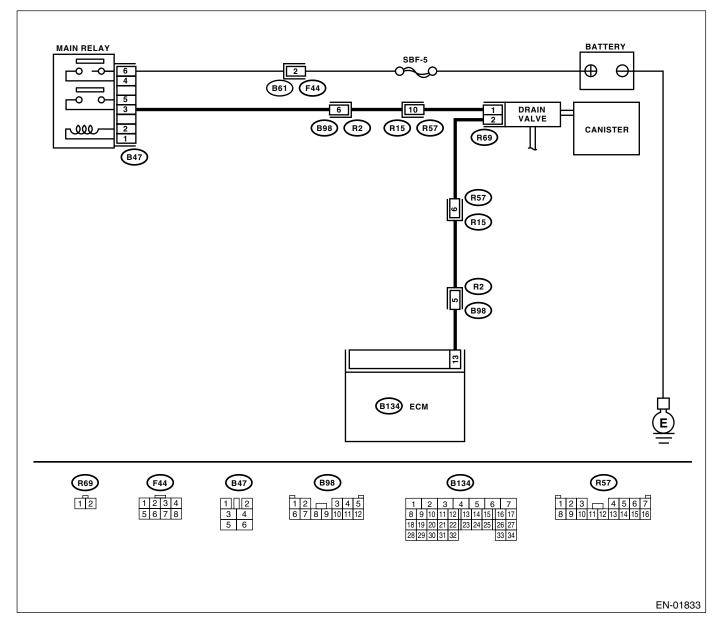
Two consecutive driving cycles with fault

 GENERAL DESCRIPTION <Ref. to GD(STi)-146, DTC P0448 — EVAPORATIVE EMISSION CON-</li> TROL SYSTEM VENT CONTROL CIRCUIT SHORTED -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

WIRING DIAGRAM: •



# DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) No- You h

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	Step	Check	Yes	No St	Id:-
1	CHECK INPUT SIGNAL FOR ECM. 1)Turn ignition switch to OFF. 2)Connect the test mode connector at the lower portion of instrument panel (on the driver's side). 3)Turn ignition switch to ON. 4)While operating the drain valve, measure voltage between ECM and chassis ground. NOTE: Drain valve operation can be executed using Subaru Select Monitor. For the procedure, refer to "Compulsory Valve Operation Check Mode". <ref. compulsory="" en(sti)-43,="" opera-<br="" to="" valve="">tion Check Mode.&gt; Connector &amp; terminal (B134) No. 13 (+) — Chassis ground (-):</ref.>		Go to step 2.	The malfunction indicator light may light up, however, the circuit is returned to the normal status at the moment. In this case, repair poor contact in ECM connector.	-410S
2	CHECK INPUT SIGNAL FOR ECM. 1)Turn ignition switch to ON. 2)Measure the voltage between ECM and chassis ground. Connector & terminal (B134) No. 13 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 4.	Go to step <b>3</b> .	
3	CHECK FOR POOR CONTACT. Check for poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	
4	CHECK HARNESS BETWEEN DRAIN VALVE AND ECM CONNECTOR. 1)Turn ignition switch to OFF. 2)Disconnect the connector from drain valve. 3)Turn ignition switch to ON. 4)Measure the voltage between ECM and chassis ground. <i>Connector &amp; terminal</i> <i>(B134) No. 13 (+) — Chassis ground (–):</i>	Is the voltage more than 10 V?	Repair short circuit to battery in har- ness between ECM and drain valve connector. After repair, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	Go to step 5.	
5	<ul> <li>CHECK DRAIN VALVE.</li> <li>1)Turn ignition switch to OFF.</li> <li>2)Measure the resistance between drain valve terminals.</li> <li>Terminals</li> <li>No. 1 — No. 2:</li> </ul>	Is the resistance less than 1 $\Omega$ ?	Replace the drain valve <ref. to<br="">EC(STi)-18, Drain Valve.&gt; and ECM <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;.</ref.></ref.>	Go to step <b>6</b> .	
6	CHECK FOR POOR CONTACT. Check for poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	

# BD:DTC P0451 — EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR RANGE/PERFORMANCE —

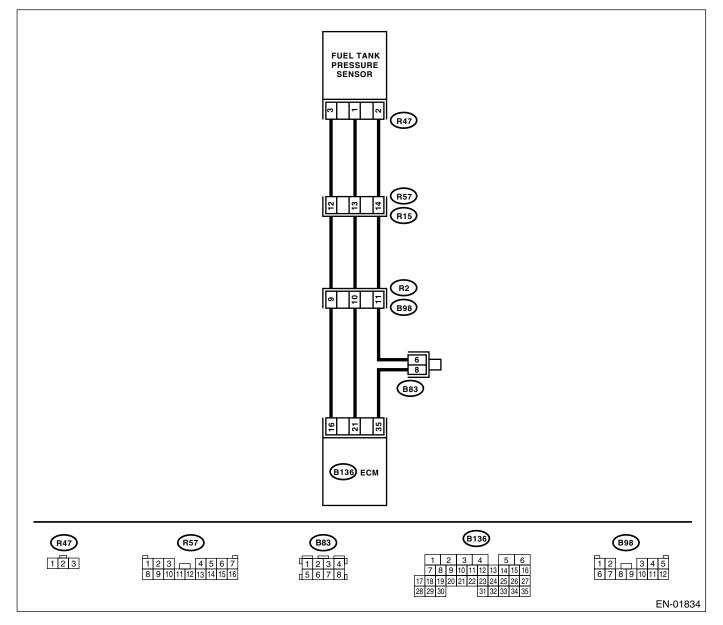
- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(STi)-148, DTC P0451 — EVAPORATIVE EMISSION CON-TROL SYSTEM PRESSURE SENSOR RANGE/PERFORMANCE —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

• WIRING DIAGRAM:



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	Step	Check	Yes	No Sti	lel.
1	CHECK FOR OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt;</ref.>	Go to step 2.	Idio
2	<b>CHECK FUEL FILLER CAP.</b> 1)Turn ignition switch to OFF. 2)Open the fuel flap.	Is the fuel filler cap tightened securely?	Go to step 3.	Tighten fuel filler cap securely.	
3	CHECK PRESSURE/VACUUM LINE. NOTE: Check the following items. •Disconnection, leakage and clogging of the vacuum hoses and pipes between fuel tank pressure sensor and fuel tank •Disconnection, leakage and clogging of air ventilation hoses and pipes between fuel filler pipe and fuel tank	Is there a fault in pressure/vac- uum line?	Repair or replace the hoses and pipes.	Replace the fuel tank pressure sen- sor. <ref. to<br="">EC(STi)-10, Fuel Tank Pressure Sensor.&gt;</ref.>	

## Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

11-

# BE:DTC P0452 — EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE E

• DTC DETECTING CONDITION:

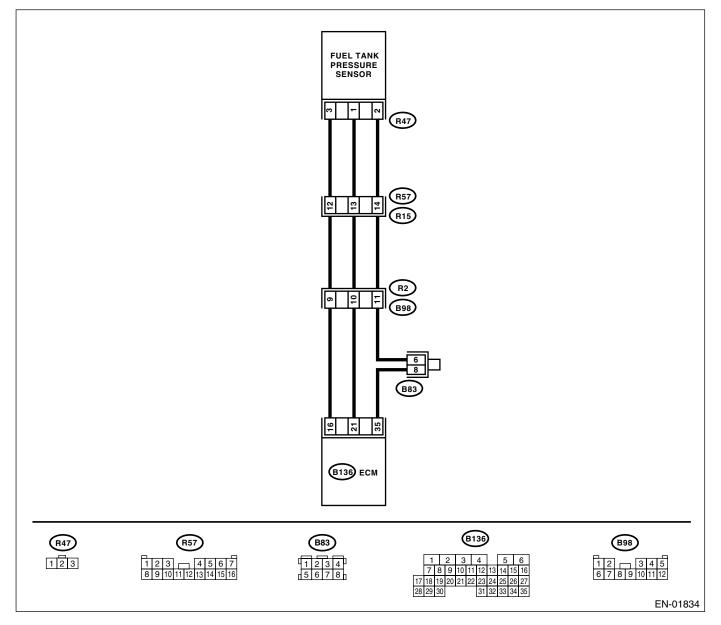
Two consecutive driving cycles with fault

 GENERAL DESCRIPTION <Ref. to GD(STi)-150, DTC P0452 — EVAPORATIVE EMISSION CON-</li> TROL SYSTEM PRESSURE SENSOR LOW INPUT -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

## CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

• WIRING DIAGRAM:



# DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) No- You h

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	Step	Check	Yes	No Studi
1	Step CHECK CURRENT DATA. 1)Turn ignition switch to OFF. 2)Remove the fuel filler cap. 3)Install the fuel filler cap. 4)Turn ignition switch to ON. 5)Read the data of fuel tank pressure sensor signal using Subaru Select Monitor or the OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedures, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool</ref.>	Check Is the measured valve less than –2.8 kPa (–21.0 mmHg, –0.827 inHg)?	Go to step 2.	No The malfunction indicator light may light up, however, the circuit is returned to the normal status at the moment.
2	For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual. CHECK POWER SUPPLY TO FUEL TANK PRESSURE SENSOR.	Is the voltage more than 4.5 V?	Go to step 4.	Go to step <b>3</b> .
	Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 16 (+) — Chassis ground (-):			
3	CHECK POWER SUPPLY TO FUEL TANK PRESSURE SENSOR. Measure the voltage between ECM connector and chassis ground. <i>Connector &amp; terminal</i> (B136) No. 16 (+) — Chassis ground (–):	Is the voltage more than 4.5 V?	Repair poor con- tact in ECM con- nector.	Contact with SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.
4	CHECK INPUT SIGNAL FOR ECM. Measure the voltage between ECM and chas- sis ground. Connector & terminal (B136) No. 21 (+) — Chassis ground (–):	Is the voltage less than 0.2 V?	Go to step 6.	Go to step 5.
5	CHECK INPUT SIGNAL FOR ECM. (USING SUBARU SELECT MONITOR.) Read the data of fuel tank pressure sensor sig- nal using Subaru Select Monitor. NOTE: •Subaru Select Monitor For detailed operation procedures, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""></ref.>		Repair poor con- tact in ECM con- nector.	Go to step 6.
6	CHECK HARNESS BETWEEN ECM AND COUPLING CONNECTOR IN REAR WIRING HARNESS. 1)Turn ignition switch to OFF. 2)Remove the rear seat cushion. 3)Separate rear wiring harness and fuel tank cord. 4)Turn ignition switch to ON. 5)Measure the voltage between rear wiring harness connector and chassis ground. <i>Connector &amp; terminal</i> (R15) No. 12 (+) — Chassis ground (-):	Is the voltage more than 4.5 V?	Go to step <b>7</b> .	Repair harness and connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and rear wir- ing harness con- nector • Poor contact in coupling connector

			VI FOR	-y Eric	7
	Step	Check	Yes	REO NO Sti	Id:
7	CHECK HARNESS BETWEEN ECM AND COUPLING CONNECTOR IN REAR WIRING HARNESS. 1)Turn ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Measure the resistance of harness between ECM and rear wiring harness connector. Connector & terminal (B136) No. 35 — (R15) No. 14:		Go to step 8.	Repair harness and connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and rear wir- ing harness con- nector • Poor contact in coupling connector • Poor contact in joint connector	r
8	HARNESS. Measure the resistance of harness between rear wiring harness connector and chassis ground. Connector & terminal (R15) No. 14 — Chassis ground:	Is the resistance more than 1 MΩ?	Go to step 9.	Repair short circuit to ground in har- ness between ECM and rear wir- ing harness con- nector.	
9	<ul> <li>CHECK FUEL TANK CORD.</li> <li>1)Disconnect the connector from fuel tank pressure sensor.</li> <li>2)Measure the resistance of fuel tank cord.</li> <li>Connector &amp; terminal</li> <li>(R57) No. 12 — (R47) No. 3:</li> </ul>	Is the resistance less than 1 $\Omega$ ?	Go to step 10.	Repair open circuit in fuel tank cord.	
10	CHECK FUEL TANK CORD. Measure the resistance of fuel tank cord. Connector & terminal (R57) No. 14 — (R47) No. 2:	Is the resistance less than 1 $\Omega$ ?	Go to step 11.	Repair open circuit in fuel tank cord.	
11	CHECK FUEL TANK CORD. Measure the resistance of harness between fuel tank pressure sensor connector and engine ground. Connector & terminal (R47) No. 1 — Chassis ground:	Is the resistance more than 1 $M\Omega$ ?	Go to step 12.	Repair short circuit to ground in fuel tank cord.	
12	CHECK FOR POOR CONTACT. Check for poor contact in fuel tank pressure sensor connector.	Is there poor contact in fuel tank pressure sensor connec- tor?	Repair poor con- tact in fuel tank pressure sensor connector.	Replace the fuel tank pressure sen- sor. <ref. to<br="">EC(STi)-10, Fuel Tank Pressure Sensor.&gt;</ref.>	

# BF:DTC P0453 — EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR HIGH INPUT —

• DTC DETECTING CONDITION:

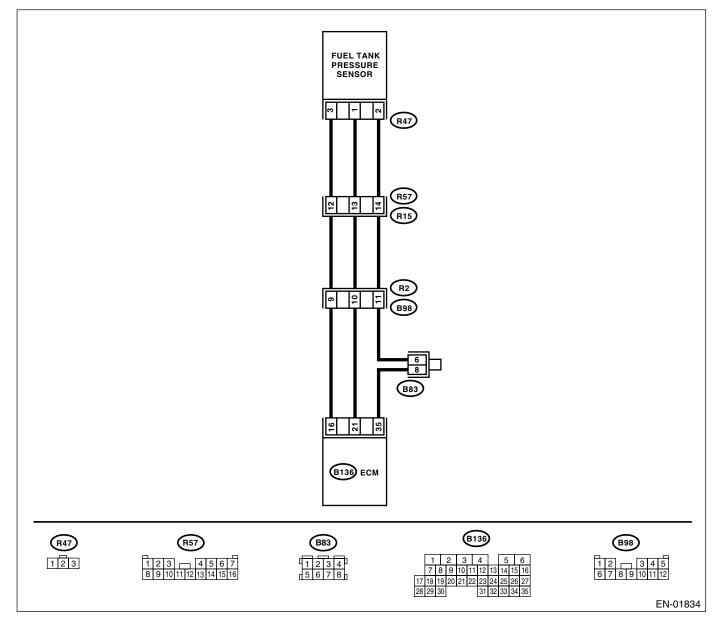
• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(STi)-152, DTC P0453 — EVAPORATIVE EMISSION CON-TROL SYSTEM PRESSURE SENSOR HIGH INPUT —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

## CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

• WIRING DIAGRAM:



		For YEris		
	Step	Check	Yes	REC'NO Studi
1	CHECK CURRENT DATA. 1)Turn ignition switch to OFF. 2)Remove the fuel filler cap. 3)Install the fuel filler cap. 4)Turn ignition switch to ON. 5)Read the data of fuel tank pressure sensor signal using Subaru Select Monitor or the OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedures, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Is the measured value more than 2.8 kPa (21.0 mmHg, 0.827 inHg)	Go to step 11.	Go to step 2.
2	CHECK POWER SUPPLY TO FUEL TANK PRESSURE SENSOR. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 16 (+) — Chassis ground (–):	Is the voltage more than 4.5 V?	Go to step <b>4</b> .	Go to step 3.
3	CHECK POWER SUPPLY TO FUEL TANK PRESSURE SENSOR. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 16 (+) — Chassis ground (–):	Does the measured value exceed the specified value by shaking the ECM harness and connector?	Repair poor con- tact in ECM con- nector.	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>
4	CHECK INPUT SIGNAL FOR ECM. Measure the voltage between ECM and chas- sis ground. Connector & terminal (B136) No. 21 (+) — Chassis ground (–):	Is the voltage less than 0.2 V?	Go to step <b>6</b> .	Go to step 5.
5	<ul> <li>CHECK INPUT SIGNAL FOR ECM. (USING SUBARU SELECT MONITOR.)</li> <li>Read the data of fuel tank pressure sensor signal using Subaru Select Monitor.</li> <li>NOTE:</li> <li>•Subaru Select Monitor</li> <li>For detailed operation procedures, refer to</li> <li>"READ CURRENT DATA FOR ENGINE".</li> <li><ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""></ref.></li> </ul>	Does the measured value exceed –2.8 kPa (–21.0 mmHg, –0.827 inHg) by shak- ing the ECM harness and con- nector?	Repair poor con- tact in ECM con- nector.	Go to step 6.
6	CHECK HARNESS BETWEEN ECM AND COUPLING CONNECTOR IN REAR WIRING HARNESS. 1)Turn ignition switch to OFF. 2)Remove the rear seat cushion. 3)Separate rear wiring harness and fuel tank cord. 4)Turn ignition switch to ON. 5)Measure the voltage between rear wiring harness connector and chassis ground. Connector & terminal (R15) No. 12 (+) — Chassis ground (-):	Is the voltage more than 4.5 V?	Go to step 7.	Repair harness and connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and rear wir- ing harness con- nector • Poor contact in coupling connector

## Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) No

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	For Flips				
	Step	Check	Yes	No St	Id:-
7	<ul> <li>HARNESS.</li> <li>1)Turn ignition switch to OFF.</li> <li>2)Disconnect the connector from ECM.</li> <li>3)Measure the resistance of harness between ECM and rear wiring harness connector.</li> <li>Connector &amp; terminal</li> <li>(B136) No. 21 — (R15) No. 13:</li> <li>(B136) No. 35 — (R15) No. 14:</li> </ul>		Go to step 8.	Repair harness and connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and rear wir- ing harness con- nector • Poor contact in coupling connector	
8	<ul> <li>CHECK FUEL TANK CORD.</li> <li>1)Disconnect the connector from fuel tank pressure sensor.</li> <li>2)Measure the resistance of fuel tank cord.</li> <li>Connector &amp; terminal (R57) No. 13 — (R47) No. 1:</li> </ul>	Is the resistance less than 1 $\Omega$ ?	Go to step <b>9.</b>	Repair open circuit in fuel tank cord.	
9	CHECK FUEL TANK CORD. Measure the resistance of fuel tank cord. Connector & terminal (R57) No. 14 — (R47) No. 2:	Is the resistance less than 1 $\Omega$ ?	Go to step 10.	Repair open circuit in fuel tank cord.	
10	CHECK FOR POOR CONTACT. Check for poor contact in fuel tank pressure sensor connector.	Is there poor contact in fuel tank pressure sensor connec- tor?	Repair poor con- tact in fuel tank pressure sensor connector.	Replace the fuel tank pressure sen- sor. <ref. to<br="">EC(STi)-10, Fuel Tank Pressure Sensor.&gt;</ref.>	
11	CHECK HARNESS BETWEEN ECM AND FUEL TANK PRESSURE SENSOR CONNEC- TOR. 1)Turn ignition switch to OFF. 2)Disconnect the connector from fuel tank pressure sensor. 3)Turn ignition switch to ON. 4)Read the data of fuel tank pressure sensor signal using Subaru Select Monitor or the OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedures, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool</ref.>	0.827 inHg)?	Repair short circuit to battery in har- ness between ECM and fuel tank pressure sensor connector.	tank pressure sen- sor. <ref. td="" to<=""><td></td></ref.>	

### **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** Al-

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ENGINE (DIÀGNOSTICS)

# BG:DTC P0456 — EVAPORATIVE EMISSION CONTROL SYSTEM LEAK DE-

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault

• GENERAL DESCRIPTION < Ref. to GD(STi)-154, DTC P0456 — EVAPORATIVE EMISSION CON-TROL SYSTEM LEAK DETECTED (VERY SMALL LEAK) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

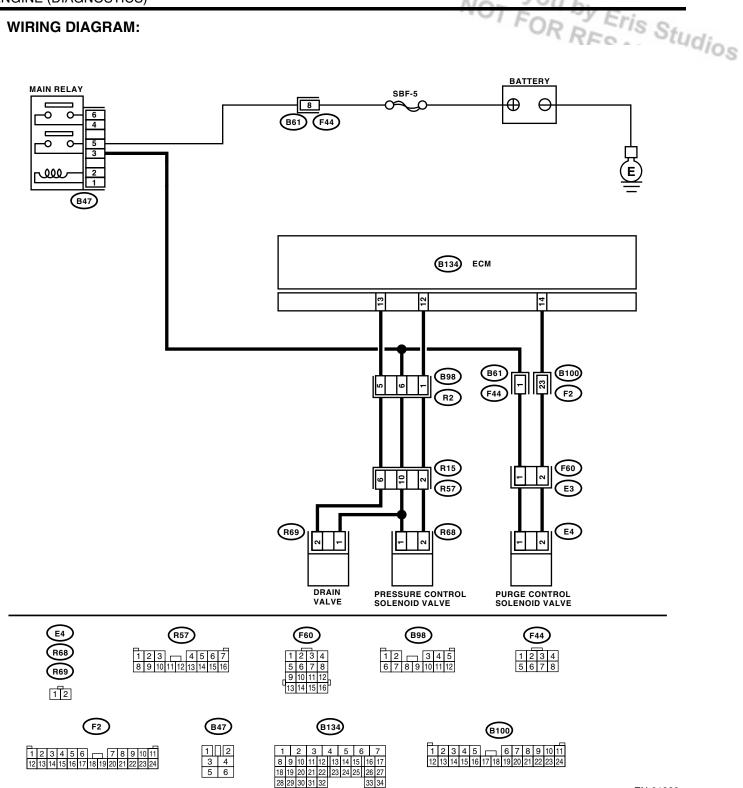
- TROUBLE SYMPTOM:
  - Fuel odor
  - There is a hole of more than 0.5 mm (0.020 in) dia. in evaporation system or fuel tank.

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



#### • WIRING DIAGRAM:



EN-01832

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	Step	Check	Yes	No St	Id:
1	CHECK FOR OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt;</ref.>	Go to step 2.	Idios
2	CHECK FUEL FILLER CAP. 1)Turn ignition switch to OFF. 2)Check the fuel filler cap. NOTE: The DTC is stored in memory if fuel filler cap is or was loose or if the cap chain was caught while tightening.	Is the fuel filler cap tightened securely?	Go to step <b>3</b> .	Tighten fuel filler cap securely.	
3	CHECK FUEL FILLER CAP.	Is the fuel filler cap SUBARU genuine?	Go to step 4.	Replace with a SUBARU genuine fuel filler cap.	
4	CHECK FUEL FILLER PIPE PACKING.	Is there any damage to the seal between fuel filler cap and fuel filler pipe?	Repair or replace the fuel filler cap and fuel filler pipe. <ref. fu(sti)-<br="" to="">49, Fuel Filler Pipe.&gt;</ref.>	Go to step 5.	
5	CHECK DRAIN VALVE. 1)Connect the test mode connector. 2)Turn ignition switch to ON. 3)Operate the drain valve. NOTE: Drain valve operation can also be executed us- ing Subaru Select Monitor. For the procedure, refer to "Compulsory Valve Operation Check Mode". <ref. compulsory="" en(sti)-43,="" to="" valve<br="">Operation Check Mode.&gt;</ref.>	Does the drain valve operate?	Go to step <b>6</b> .	Replace the drain valve. <ref. to<br="">EC(STi)-18, Drain Valve.&gt;</ref.>	
6	CHECK PURGE CONTROL SOLENOID VALVE. Operate the purge control solenoid valve. NOTE: Purge control solenoid valve operation can also be executed using Subaru Select Monitor. For the procedure, refer to "Compulsory Valve Op- eration Check Mode". <ref. en(sti)-43,<br="" to="">Compulsory Valve Operation Check Mode.&gt;</ref.>	Does the purge control sole- noid valve operate?	Go to step 7.	Replace the purge control solenoid valve. <ref. to<br="">EC(STi)-6, Purge Control Solenoid Valve.&gt;</ref.>	
7	CHECK PRESSURE CONTROL SOLENOID VALVE. Operate the pressure control solenoid valve. NOTE: Pressure control solenoid valve operation can also be executed using Subaru Select Monitor. For the procedure, refer to "Compulsory Valve Operation Check Mode". <ref. en(sti)-43,<br="" to="">Compulsory Valve Operation Check Mode.&gt;</ref.>	Does the pressure control solenoid valve operate?	Go to step 8.	Replace the pres- sure control sole- noid valve. <ref. to EC(STi)-6, Purge Control Solenoid Valve.&gt;</ref. 	
8	CHECK EVAPORATIVE EMISSION CON- TROL SYSTEM LINE. Turn ignition switch to OFF.	Is there a hole of more than 0.5 mm (0.020 in) dia. on evapora- tion line?	Repair or replace the evaporation line. <ref. to<br="">FU(STi)-63, Fuel Delivery, Return and Evaporation Lines.&gt;</ref.>	Go to step <b>9</b> .	

## Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL

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	Step	Check	Yes	Pro No Sti	Id:
9	CHECK CANISTER.	Is the canister damaged or is there a hole of more than 0.5 mm (0.020 in) dia. in it?	Repair or replace the canister. <ref. to EC(STi)-5, Can- ister.&gt;</ref. 	Go to step 10.	1410
10	CHECK FUEL TANK. Remove the fuel tank. <ref. fu(h4dotc)-<br="" to="">52, Fuel Tank.&gt;</ref.>	Is the fuel tank damaged or is there a hole of more than 0.5 mm (0.020 in) dia. in it?	Repair or replace the fuel tank. <ref. to FU(STi)-46, Fuel Tank.&gt;</ref. 	Go to step 11.	
11	CHECK ANY OTHER MECHANICAL TROU- BLE IN EVAPORATIVE EMISSION CON- TROL SYSTEM.	Are there holes of more than 0.5 mm (0.020 in) dia., cracks, clogging, or disconnections, bend, misconnection of hoses or pipes in evaporative emis- sion control system?	Repair or replace the hoses or pipes.	Contact with SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	

BH:DTC P0457 — EVAPORATIVE EMISSION CONTROL SYSTEM LEAK DE-TECTED (FUEL CAP LOOSE/OFF) —

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(STi)-154, DTC P0457 — EVAPORATIVE EMISSION CON-TROL SYSTEM LEAK DETECTED (FUEL CAP LOOSE/OFF) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

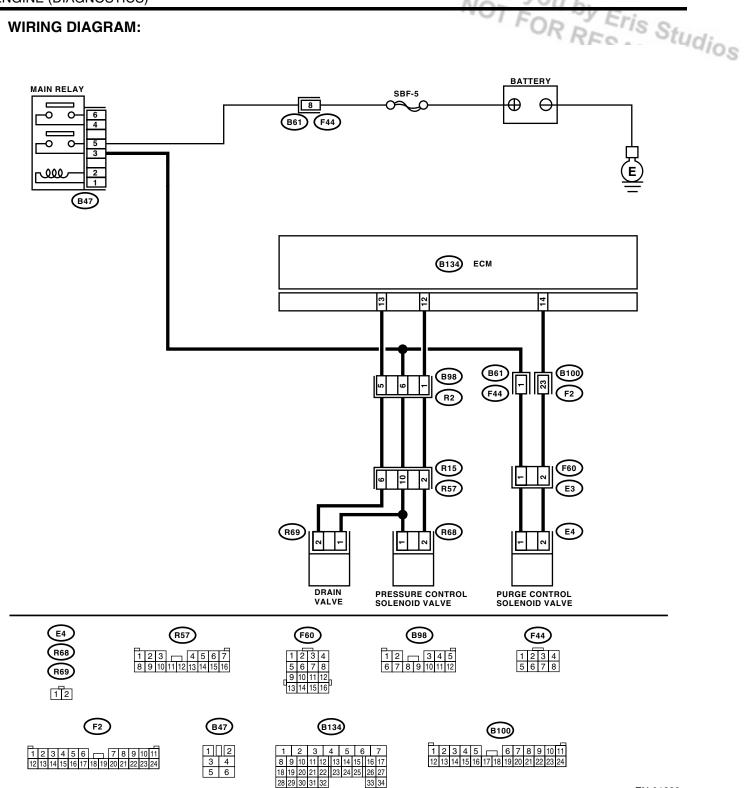
- TROUBLE SYMPTOM:
  - Fuel odor
  - Fuel filler cap is loose or not installed.

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



#### • WIRING DIAGRAM:



EN-01832

		<u></u>	Fop	Y Eris er	1
_		Check	Yes	No St	Idios
1	CHECK FOR OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt;</ref.>	Go to step 2.	4105
2	CHECK FUEL FILLER CAP. 1)Turn ignition switch to OFF. 2)Check the fuel filler cap. NOTE: The DTC is stored in memory if fuel filler cap is or was loose or if the cap chain was caught while tightening.		Go to step 3.	Tighten fuel filler cap securely.	
3	CHECK FUEL FILLER CAP.	Is the fuel filler cap SUBARU genuine?	Go to step 4.	Replace with a SUBARU genuine fuel filler cap.	
4	CHECK FUEL FILLER PIPE PACKING.	Is there any damage to the seal between fuel filler cap and fuel filler pipe?	Repair or replace the fuel filler cap and fuel filler pipe. <ref. fu(sti)-<br="" to="">49, Fuel Filler Pipe.&gt;</ref.>	Go to step 5.	
5	CHECK DRAIN VALVE. 1)Connect the test mode connector. 2)Turn ignition switch to ON. 3)Operate the drain valve. NOTE: Drain valve operation can also be executed us- ing Subaru Select Monitor. For the procedure, refer to "Compulsory Valve Operation Check Mode". <ref. compulsory="" en(sti)-43,="" to="" valve<br="">Operation Check Mode.&gt;</ref.>		Go to step 6.	Replace the drain valve. <ref. to<br="">EC(STi)-18, Drain Valve.&gt;</ref.>	
6	CHECK PURGE CONTROL SOLENOID VALVE. Operate the purge control solenoid valve. NOTE: Purge control solenoid valve operation can also be executed using Subaru Select Monitor. For the procedure, refer to "Compulsory Valve Op- eration Check Mode". <ref. en(sti)-66,="" list<br="" to="">of Diagnostic Trouble Code (DTC).&gt;</ref.>		Go to step 7.	Replace the purge control solenoid valve. <ref. to<br="">EC(STi)-6, Purge Control Solenoid Valve.&gt;</ref.>	
7	CHECK PRESSURE CONTROL SOLENOID VALVE. Operate the pressure control solenoid valve. NOTE: Pressure control solenoid valve operation can also be executed using Subaru Select Monitor. For the procedure, refer to "Compulsory Valve Operation Check Mode". <ref. en(sti)-43,<br="" to="">Compulsory Valve Operation Check Mode.&gt;</ref.>		Go to step 8.	Replace the pres- sure control sole- noid valve. <ref. to EC(STi)-6, Purge Control Solenoid Valve.&gt;</ref. 	
8	CHECK CANISTER.	Is the canister damaged?	Repair or replace the canister. <ref. to EC(STi)-5, Can- ister.&gt;</ref. 	Go to step <b>9.</b>	

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	Step	Check	Yes	Pro No Sti	10
9	CHECK FUEL TANK. Remove the fuel tank. <ref. fu(sti)-46,<br="" to="">Fuel Tank.&gt;</ref.>		Repair or replace the fuel tank. <ref. to FU(STi)-46, Fuel Tank.&gt;</ref. 	Go to step 10.	/d
10	TROL SYSTEM.		the hoses or pipes.	Contact with SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	

## Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

# BI: DTC P0458 — EVAPORATIVE EMISSION CONTROL SYSTEM PURGE CON-

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault

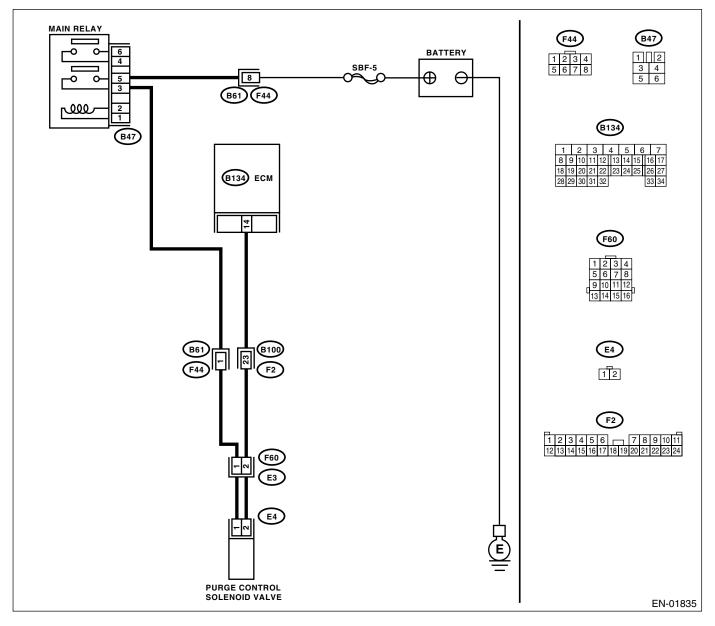
 GENERAL DESCRIPTION <Ref. to GD(STi)-155, DTC P0458 — EVAPORATIVE EMISSION CON-</li> TROL SYSTEM PURGE CONTROL VALVE CIRCUIT LOW -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

- TROUBLE SYMPTOM:
  - · Erroneous idling

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

WIRING DIAGRAM:



# DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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	Step	Check	Yes	No Sti	Id:
1)Turn 1 2)Meas chassis <b>Conn</b>	<b>COUTPUT SIGNAL FROM ECM.</b> the ignition switch to ON. sure the voltage between ECM and s ground. <b>Dector &amp; terminal</b> 34) No. 14 (+) — Chassis ground (–):	Is the voltage more than 10 V?	Even if malfunc- tion indicator light lights up, the cir- cuit has returned to a normal condi- tion at this time.	Go to step 2.	Idios
TROL S NECTO 1)Turn 1 2)Disco trol sole 3)Meas purge c engine <i>Conn</i>	K HARNESS BETWEEN PURGE CON- SOLENOID VALVE AND ECM CON- DR. the ignition switch to OFF. onnect the connectors from purge con- enoid valve and ECM. sure the resistance of harness between control solenoid valve connector and ground. mector & terminal D No. 2 — Engine ground:	Is the resistance more than 1 MΩ?	Go to step 3.	Repair the ground short circuit in har- ness between ECM and purge control solenoid valve connector.	
3 CHECK TROL S NECTO Measur ECM ar ness co <i>Conn</i> ( <i>B</i> 13	K HARNESS BETWEEN PURGE CON- SOLENOID VALVE AND ECM CON- DR. re the resistance of harness between nd purge control solenoid valve of har- onnector. <b>Sector &amp; terminal</b> 34) No. 14 — (E4) No. 2:	Ω?	Go to step <b>4</b> .	Repair the open circuit in harness between ECM and purge control sole- noid valve connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between ECM and purge control solenoid valve connector • Poor contact in coupling connector	
VALVE 1)Remo 2)Meas trol sole <i>Term</i> i	ove the purge control solenoid valve. sure the resistance between purge con- enoid valve terminals. <i>inals</i> 1 — No. 2:	Is the resistance $10 - 100 \Omega$ ?		Replace the purge control solenoid valve. <ref. to<br="">EC(STi)-6, Purge Control Solenoid Valve.&gt;</ref.>	
TROL S 1)Turn f 2)Meas solenoid <i>Conn</i> (E4)	SOLENOID VALVE. the ignition switch to ON. sure the voltage between purge control d valve and engine ground. <i>Dector &amp; terminal</i> No. 1 (+) — Engine ground (–):	Is the voltage more than 10 V?		Repair the open circuit in harness between main relay and purge control solenoid valve connector.	
Check	<b>K POOR CONTACT.</b> poor contact in purge control solenoid onnector.	Is there poor contact in purge control solenoid valve connec- tor?	Repair the poor contact in purge control solenoid valve connector.	Contact your SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	

## Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

# BJ:DTC P0459 — EVAPORATIVE EMISSION CONTROL SYSTEM PURGE CON-

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault

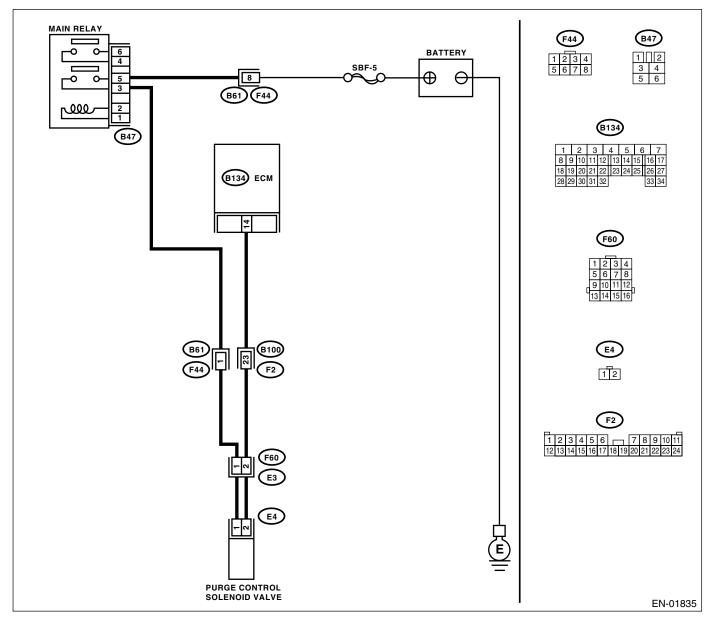
 GENERAL DESCRIPTION <Ref. to GD(STi)-157, DTC P0459 — EVAPORATIVE EMISSION CON-</li> TROL SYSTEM PURGE CONTROL VALVE CIRCUIT HIGH -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

- TROUBLE SYMPTOM:
  - · Erroneous idling

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

WIRING DIAGRAM:



## Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL

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Step	Check	Yes	250 No Studi	
<ol> <li>CHECK OUTPUT SIGNAL FROM ECM.         <ol> <li>Turn the ignition switch to OFF.</li> <li>Connect the test mode connector at the lower portion of instrument panel (on the driver's side).</li> <li>Turn the ignition switch to ON.</li> <li>While operating the purge control solenoid valve, measure the voltage between ECM and chassis ground.</li> <li>NOTE:</li> <li>Purge control solenoid valve operation can be executed using the Subaru Select Monitor. For procedure, refer to "Compulsory Valve Operation Check Mode". <ref. check="" compulsory="" en(sti)-43,="" mode.="" operation="" to="" valve=""></ref.></li> <li>Connector &amp; terminal (B134) No. 14 (+) — Chassis ground (-):</li> </ol> </li> </ol>		Go to step 2.	Even if malfunc- tion indicator light lights up, the cir- cuit has returned to a normal condi- tion at this time. In this case, repair the poor contact in ECM connector.	S
<ul> <li>CHECK OUTPUT SIGNAL FROM ECM.</li> <li>1)Turn the ignition switch to ON.</li> <li>2)Measure the voltage between ECM and chassis ground.</li> <li>Connector &amp; terminal</li> <li>(B134) No. 14 (+) — Chassis ground (-):</li> </ul>	Is the voltage more than 10 V?	Go to step 4.	Go to step 3.	
3 CHECK POOR CONTACT.	Is there poor contact in ECM connector?	Repair the poor contact in ECM connector.	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	
<ul> <li>CHECK HARNESS BETWEEN PURGE CONTROL SOLENOID VALVE AND ECM CONNECTOR.         <ol> <li>Turn the ignition switch to OFF.</li> <li>Disconnect the connector from purge control solenoid valve.</li> <li>Turn the ignition switch to ON.</li> <li>Measure the voltage between ECM and chassis ground.</li> <li>Connector &amp; terminal (B134) No. 14 (+) — Chassis ground (-):</li> </ol> </li> </ul>		Repair the battery short circuit in har- ness between ECM and purge control solenoid valve connector. After repair, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	Go to step 5.	
	Is the resistance less than 1 Ω?	Replace the purge control solenoid valve <ref. to<br="">EC(STi)-6, Purge Control Solenoid Valve.&gt; and ECM <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.></ref.>	Go to step <b>6</b> .	
	Is there poor contact in ECM connector?	Repair the poor contact in ECM connector.	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	

## Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** No

ENGINE (DIÀGNOSTICS)

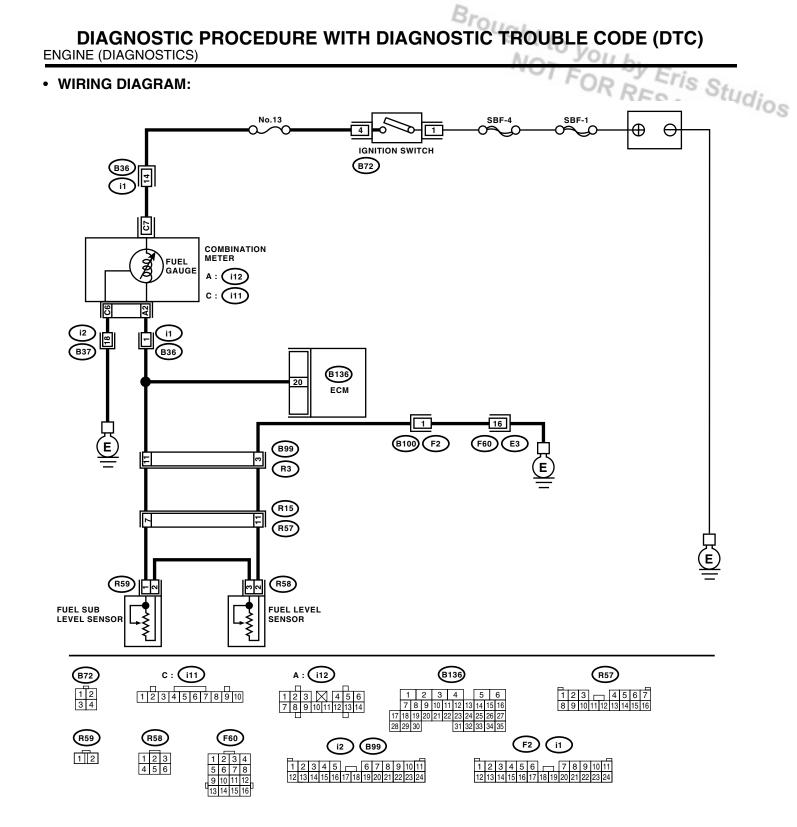
# BK:DTC P0461 — FUEL LEVEL SENSOR CIRCUIT RANGE/PERFORMANCE —

Two consecutive driving cycles with fault

• GENERAL DESCRIPTION < Ref. to GD(STi)-159, DTC P0461 - FUEL LEVEL SENSOR CIRCUIT 

#### **CAUTION:**

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



EN-01836

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Step	Check	Yes	Pro No Sti	Id.
1 CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	EN(STi)-66, List of	Fuel Level Sen- sor.> and fuel sub level sensor <ref. to FU(STi)-58, Fuel Sub Level Sensor.&gt;</ref. 	IQ <sub>i</sub>

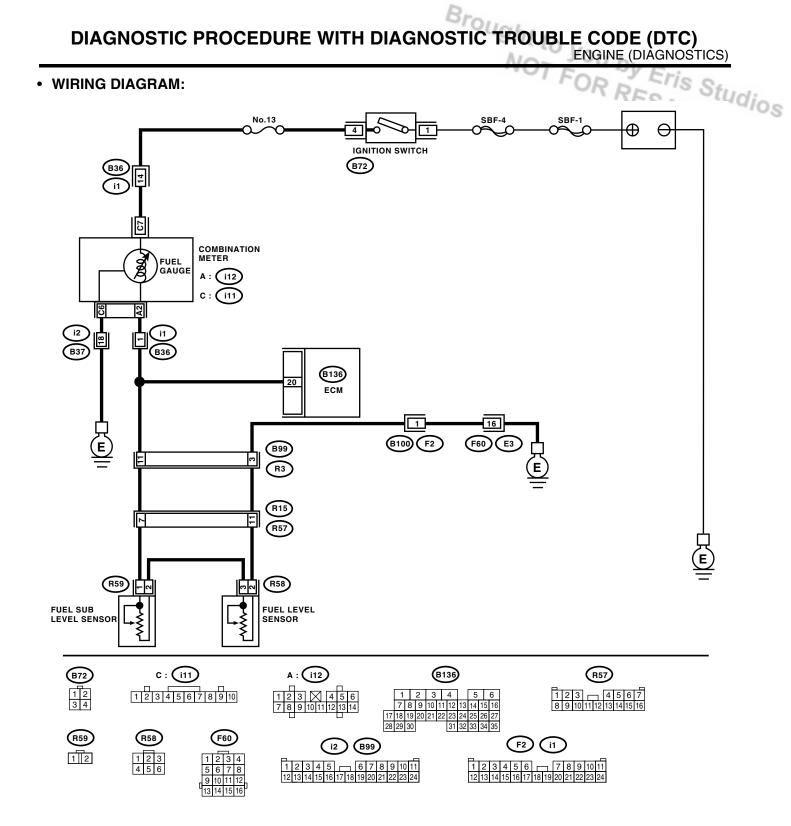
## BL:DTC P0462 — FUEL LEVEL SENSOR CIRCUIT LOW INPUT

## DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- SALE • GENERAL DESCRIPTION < Ref. to GD(STi)-161, DTC P0462 - FUEL LEVEL SENSOR CIRCUIT

#### **CAUTION:**

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



EN-01836

#### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL Ma

ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	No Sti	Id:
1	CHECK SPEEDOMETER AND TACHOME- TER OPERATION IN COMBINATION METER.	Does the speedometer and tachometer operate normally?	Go to step 2.	Repair or replace the combination meter. <ref. to<br="">IDI-3, Combina- tion Meter Sys- tem.&gt;</ref.>	1410S
2	CHECK INPUT SIGNAL FOR ECM. 1)Turn the ignition switch to ON. (engine OFF) 2)Measure the voltage between ECM connec- tor and chassis ground. <i>Connector &amp; terminal</i> (B136) No. 20 (+) — Chassis ground (-):	Is the voltage less than 0.12 V?	Go to step 4.	Go to step <b>3</b> .	
3	CHECK INPUT SIGNAL FOR ECM. (USING SUBARU SELECT MONITOR) Read the data of fuel level sensor signal using Subaru Select Monitor. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""></ref.>	Does the voltage change, while shaking the ECM har- ness and connector?	Repair the poor contact in ECM connector.	Even if malfunc- tion indicator light lights up, the cir- cuit has returned to a normal condi- tion at this time. A temporary poor contact of the con- nector may be the cause. NOTE: In this case, repair the following: • Poor contact in combination meter connector • Poor contact in ECM connector • Poor contact in coupling connec- tors	
4	CHECK INPUT VOLTAGE OF ECM. 1)Turn the ignition switch to OFF. 2)Separate the fuel tank cord connector (R57) and rear wiring harness connector (R15). 3)Turn the ignition switch to ON. 4)Measure the voltage of harness between ECM connector and chassis ground. <i>Connector &amp; terminal</i> (B136) No. 20 (+) — Chassis ground (-):	Is the voltage more than 0.12 V?	Go to step <b>5</b> .	Go to step <b>6</b> .	
5	CHECK HARNESS BETWEEN ECM AND COMBINATION METER. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from connector (i11), (i12) and ECM connector. 3)Measure the resistance between ECM and chassis ground. Connector & terminal (B136) No. 20 — Chassis ground:	Is the resistance more than 1 MΩ?	Go to step <b>7</b> .	Repair the ground short circuit in har- ness between ECM and combi- nation meter con- nector.	

# DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

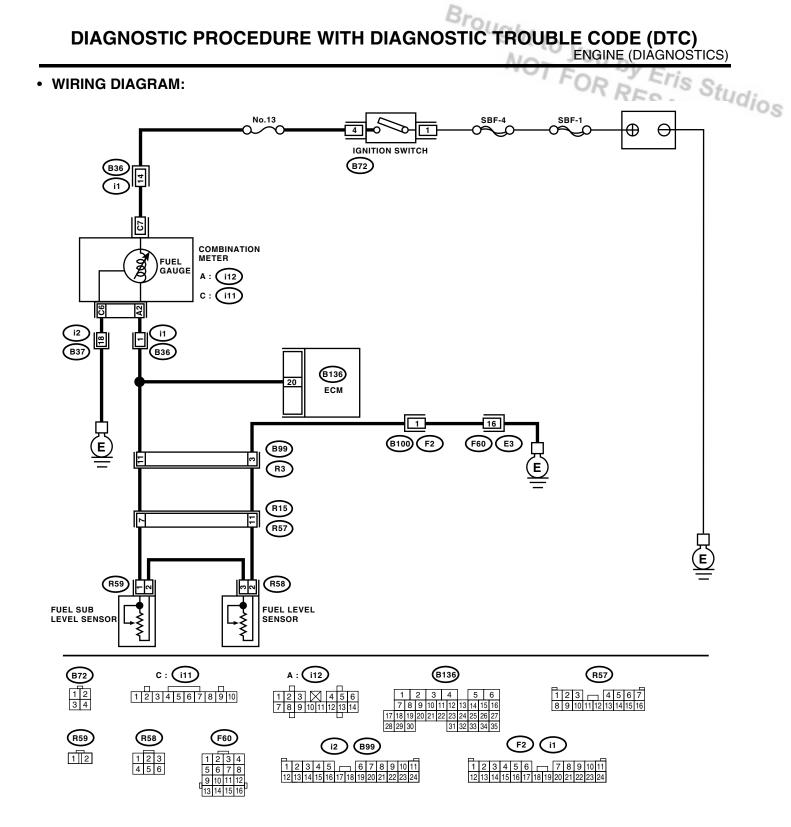
·			50n	y Eris o	
	Step	Check	Yes	REO NO Sti	Id:
6	CHECK HARNESS BETWEEN ECM AND COMBINATION METER. Measure the resistance between ECM and combination meter connector. Connector & terminal (B136) No. 20 — (i12) No. 2:	Is the resistance less than 10 Ω?	Repair or replace the combination meter. <ref. to<br="">IDI-3, Combina- tion Meter Sys- tem.&gt;</ref.>	Repair the open circuit between ECM and combi- nation meter con- nector. NOTE: In this case, repair the following: Poor contact in coupling connector	UIOS
7	<ul> <li>CHECK FUEL TANK CORD.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from fuel sub level sensor.</li> <li>3)Measure the resistance between fuel sub level sensor and chassis ground.</li> <li>Connector &amp; terminal <ul> <li>(R59) No. 1 — Chassis ground:</li> </ul> </li> </ul>	Is the resistance more than 1 MΩ?	Go to step 8.	Repair the ground short circuit in fuel tank cord.	
8	<ul> <li>CHECK FUEL TANK CORD.</li> <li>1)Disconnect the connector from fuel pump assembly.</li> <li>2)Measure the resistance between fuel pump assembly and chassis ground.</li> <li>Connector &amp; terminal (R59) No. 2 — Chassis ground:</li> </ul>	Is the resistance more than 1 MΩ?	Go to step <b>9</b> .	Repair the ground short circuit in fuel tank cord.	
9	CHECK FUEL LEVEL SENSOR. 1)Remove the fuel pump assembly. <ref. to<br="">FU(STi)-54, Fuel Pump.&gt; 2)Measure the resistance between fuel level sensor and terminals with its float set to the full position. Terminals No. 2 — No. 3:</ref.>	Is the resistance $0.5 - 2.5 \Omega$ ?		Replace the fuel level sensor.	
10	<ul> <li>CHECK FUEL SUB LEVEL SENSOR.</li> <li>1)Remove the fuel sub level sensor. <ref. fu(sti)-58,="" fuel="" level="" sensor.="" sub="" to=""></ref.></li> <li>2)Measure the resistance between fuel sub level sensor and terminals with its float set to the full position.</li> <li>Terminals</li> <li>No. 1 — No. 2:</li> </ul>	Is the resistance $0.5 - 2.5 \Omega$ ?	Repair the poor contact in harness between ECM and combination meter connector.	Replace the fuel sub level sensor.	

# BM:DTC P0463 — FUEL LEVEL SENSOR CIRCUIT HIGH INPUT

# DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- SALE GENERAL DESCRIPTION <Ref. to GD(STi)-163, DTC P0463 — FUEL LEVEL SENSOR CIRCUIT</li> HIGH INPUT ----, Diagnostic Trouble Code (DTC) Detecting Criteria.>

## **CAUTION:**



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#### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL No

ENGINE (DIAGNOSTICS)

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Step	Check	Yes	No Studi
1 CHECK SPEEDOMETER AND TACHOME- TER OPERATION IN COMBINATION METER.	Does the speedometer and tachometer operate normally?	Go to step 2.	Repair or replace the combination meter. <ref. to<br="">IDI-3, Combina- tion Meter Sys- tem.&gt;</ref.>
<ul> <li>CHECK INPUT SIGNAL FOR ECM.         <ol> <li>Turn the ignition switch to ON. (engine OFF)</li> <li>Measure the voltage between ECM connector and chassis ground.</li> <li>Connector &amp; terminal</li></ol></li></ul>		Go to step 3.	Even if malfunc- tion indicator light lights up, the cir- cuit has returned to a normal condi- tion at this time. A temporary poor contact of the con- nector may be the cause. NOTE: In this case, repair the following: • Poor contact in fuel pump connec- tor • Poor contact in coupling connector
<ul> <li>3 CHECK INPUT VOLTAGE OF ECM.         <ol> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the combination meter connector (i11) and ECM connector.</li> <li>3)Turn the ignition switch to ON.</li> <li>4)Measure the voltage of harness between ECM and chassis ground.</li> <li>Connector &amp; terminal (B136) No. 20 (+) — Chassis ground (-):</li> </ol> </li> </ul>	Is the voltage more than 4.75 V?	Go to step 4.	Repair the battery short circuit between ECM and combination meter connector.
<ul> <li>CHECK HARNESS BETWEEN ECM AND FUEL TANK CORD.         <ol> <li>Turn the ignition switch to OFF.</li> <li>Separate the fuel tank cord connector (R57) and rear wiring harness connector (R15).</li> <li>Measure the resistance between ECM and fuel tank cord.</li> <li>Connector &amp; terminal (B136) No. 20 — (R15) No. 7:</li> </ol> </li> </ul>	Is the resistance less than 5 $\Omega$ ?	Go to step <b>5</b> .	Repair the open circuit between ECM and fuel tank cord.
5 CHECK HARNESS BETWEEN FUEL TANK CORD AND CHASSIS GROUND. Measure the resistance between fuel tank cord and chassis ground. Connector & terminal (R15) No. 11 — Chassis ground:	Is the resistance less than 5 $\Omega$ ?	Go to step 6.	Repair the open circuit between fuel tank cord and chassis ground. NOTE: In this case, repair the following: Poor contact in coupling connec- tors
<ul> <li>6 CHECK FUEL TANK CORD.         <ol> <li>1)Disconnect the connector from fuel level sensor.</li> <li>2)Measure the resistance between fuel level sensor and coupling connector.</li> <li>Connector &amp; terminal</li></ol></li></ul>	Is the resistance less than 10 $\Omega$ ?	Go to step <b>7</b> .	Repair the open circuit between coupling connector and fuel level sen- sor.

# Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

Equal Friday					-
	Step	Check	Yes	No Sti	lel:
7	<ul> <li>CHECK FUEL TANK CORD.</li> <li>1)Disconnect the connector from fuel sub level sensor.</li> <li>2)Measure the resistance between fuel level sensor and fuel sub level sensor.</li> <li>Connector &amp; terminal (R58) No. 7 — (R59) No. 2:</li> </ul>	Is the resistance less than 10 $\Omega$ ?	Go to step 8.	Repair the open circuit between fuel level sensor and fuel sub level sensor.	<sup>rq</sup> ios
8	CHECK FUEL TANK CORD. Measure the resistance between fuel sub level sensor and coupling connector. Connector & terminal (R57) No. 2 — (R59) No. 1:	Is the resistance less than 10 $\Omega$ ?	Go to step <b>9</b> .	Repair the open circuit between coupling connector and fuel sub level sensor.	
9	<ul> <li>CHECK FUEL LEVEL SENSOR.</li> <li>1)Remove the fuel pump assembly. <ref. fu(sti)-54,="" fuel="" pump.="" to=""></ref.></li> <li>2)While moving the fuel level sensor float up and down, measure the resistance between fuel level sensor terminals.</li> <li>Terminals</li> <li>No. 2 - No. 3:</li> </ul>	Is the resistance more than 53 $\Omega$ ?	Replace the fuel level sensor. <ref. to FU(STi)-57, Fuel Level Sen- sor.&gt;</ref. 	Go to step 10.	-
10	<ul> <li>CHECK FUEL SUB LEVEL SENSOR.</li> <li>1)Remove the fuel sub level sensor. <ref. fu(sti)-58,="" fuel="" level="" sensor.="" sub="" to=""></ref.></li> <li>2)While moving the fuel sub level sensor float up and down, measure the resistance between fuel sub level sensor terminals.</li> <li>Terminals</li> <li>No. 1 — No. 2:</li> </ul>	Is the resistance more than 45 $\Omega$ ?	Replace the fuel sub level sensor. <ref. fu(sti)-<br="" to="">58, Fuel Sub Level Sensor.&gt;</ref.>	Replace the com- bination meter. <ref. idi-10,<br="" to="">Combination Meter Assembly.&gt;</ref.>	

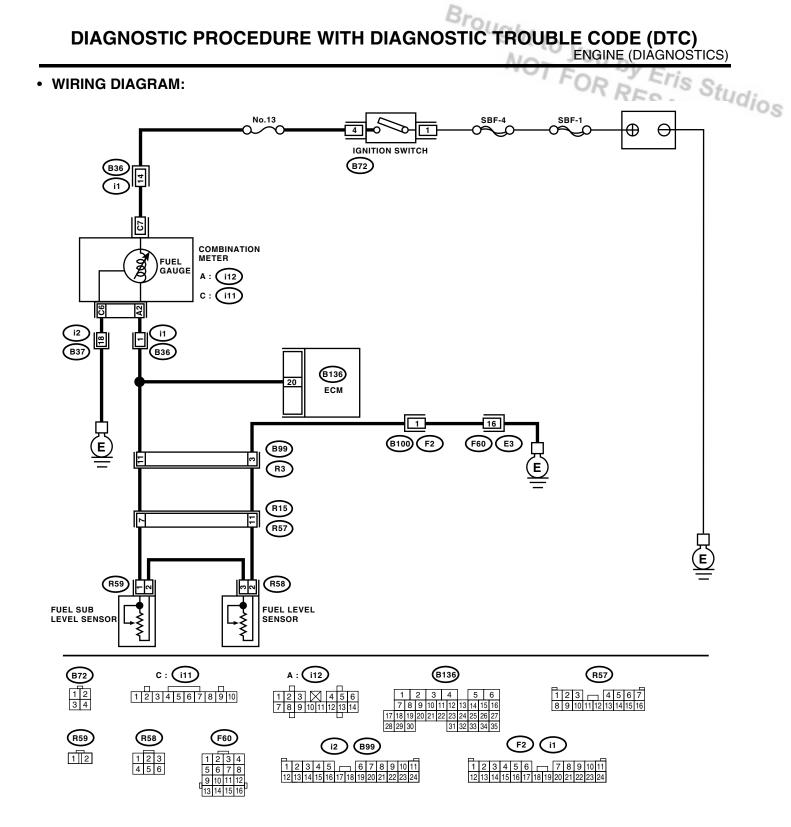
# **BN:DTC P0464 — FUEL LEVEL SENSOR CIRCUIT INTERMITTENT —**

# • DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION < Ref. to GD(STi)-165, DTC P0464 FUEL LEVEL SENSOR CIRCUIT IN-TERMITTENT —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

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### CAUTION:



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# DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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ENGINE (DIAGNOSTICS)

	Econ Friend					
	Step	Check	Yes	No Sti	Id.	
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt;</ref.>	Go to step 2.	1410S	
2	<ul> <li>CHECK FUEL LEVEL SENSOR.</li> <li>1)Remove the fuel pump assembly. <ref. fu(sti)-54,="" fuel="" pump.="" to=""></ref.></li> <li>2)While moving the fuel level sensor float up and down, make sure that the resistance between fuel level sensor terminals changes smoothly.</li> <li>Terminals</li> <li>No. 3 — No. 2:</li> </ul>	Does the resistance change smoothly?	Go to step <b>3</b> .	Replace the fuel level sensor. <ref. to FU(STi)-57, Fuel Level Sen- sor.&gt;</ref. 	•	
3	<ul> <li>CHECK FUEL SUB LEVEL SENSOR.</li> <li>1)Remove the fuel sub level sensor. <ref. fu(sti)-58,="" fuel="" level="" sensor.="" sub="" to=""></ref.></li> <li>2)While moving the fuel sub level sensor float up and down, make sure that the resistance between fuel level sensor terminals changes smoothly.</li> <li>Terminals</li> <li>No. 1 — No. 2:</li> </ul>	Does the resistance change smoothly?	Repair the poor contact in ECM, combination meter and coupling con- nectors.	Replace the fuel sub level sensor. <ref. fu(sti)-<br="" to="">58, Fuel Sub Level Sensor.&gt;</ref.>		

# Bre DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

ENGINE (DIÀGNOSTICS) Eris Studios

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# **BO:DTC P0483 — COOLING FAN RATIONALITY CHECK -**

# DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION < Ref. to GD(STi)-168, DTC P0483 COOLING FAN RATIONALITY CHECK -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

## • TROUBLE SYMPTOM:

- Occurrence of noise
- Overheating

#### **CAUTION:**

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

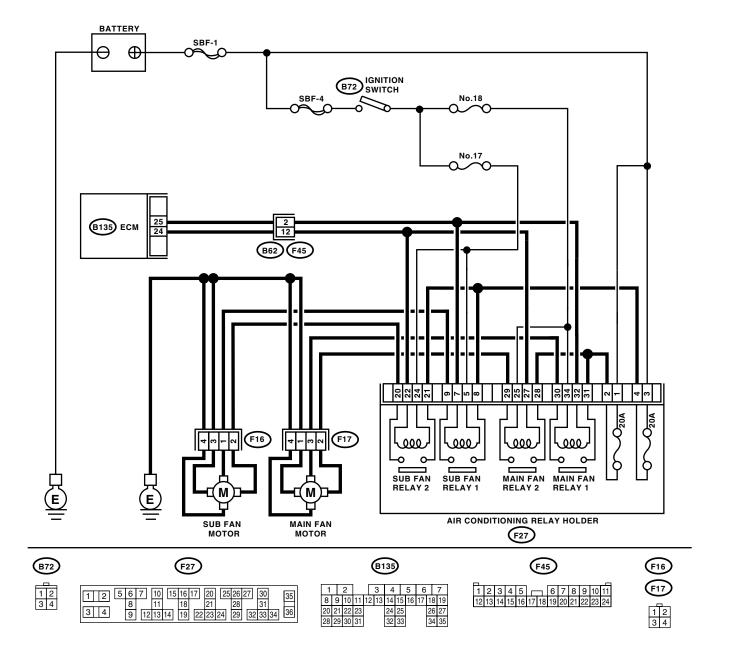
NOTE:

If the vehicle, with the engine idling, is placed very close to a wall or another vehicle, preventing normal cooling function, the OBD system may detect malfunction.

Broi DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

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# • WIRING DIAGRAM:



EN-01837

By Eris Studios

# Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

	Step	Check	Yes	No St
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele-	Check the radiator fan, fan motor and
			"List of Diagnostic Trouble Code	,
			(DTC)". <ref. to<br="">EN(STi)-66, List of</ref.>	Radiator Main Fan
			Diagnostic Trou- ble Code (DTC).>	and <ref. td="" to<=""></ref.>
				Radiator Sub Fan
				and Fan Motor.> If thermostat is
				stuck, replace thermostat.

# DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

# **BP:DTC P0502 — VEHICLE SPEED SENSOR CIRCUIT LOW INPUT -**

# • DTC DETECTING CONDITION:

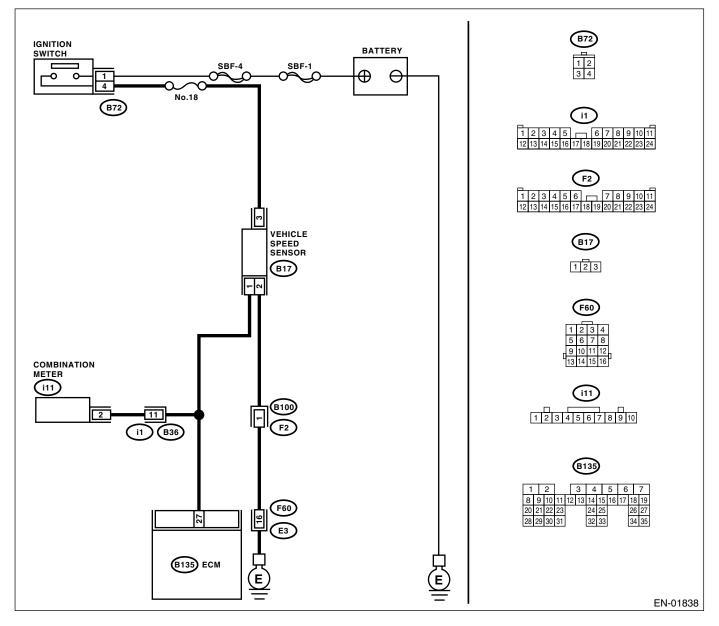
- · Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(STi)-170, DTC P0502 VEHICLE SPEED SENSOR CIR-CUIT LOW INPUT —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

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## CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

### • WIRING DIAGRAM:



# Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

-		For Fring		
	Step	Check	Yes	Pro No St
1	<ul> <li>CHECK HARENESS BETWEEN VEHICLE SPEED SENSOR AND ECM CONNECTOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connectors from vehicle speed sensor and ECM.</li> <li>3)Measure the resistance of harness between vehicle speed sensor connector and chassis ground.</li> <li>Connector &amp; terminal (B17) No. 1 — Chassis ground:</li> </ul>	Is the resistance more than 1 MΩ?	Go to step 2.	Repair the ground short circuit in har- ness between vehicle speed sen- sor and ECM con- nector.
2	CHECK POOR CONTACT. Check poor contact in the vehicle speed sen- sor connector.	Is there poor contact in the vehicle speed sensor connector?	Repair poor con- tact in the vehicle speed sensor con- nector.	Replace the vehi- cle speed sensor. <ref. 5mt-37,<br="" to="">Vehicle Speed Sensor.&gt;</ref.>

# Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** ENGINE (DIAGNOSTICS)

# BQ:DTC P0503 — VEHICLE SPEED SENSOR INTERMITTENT/ERRATIC/HIGH —

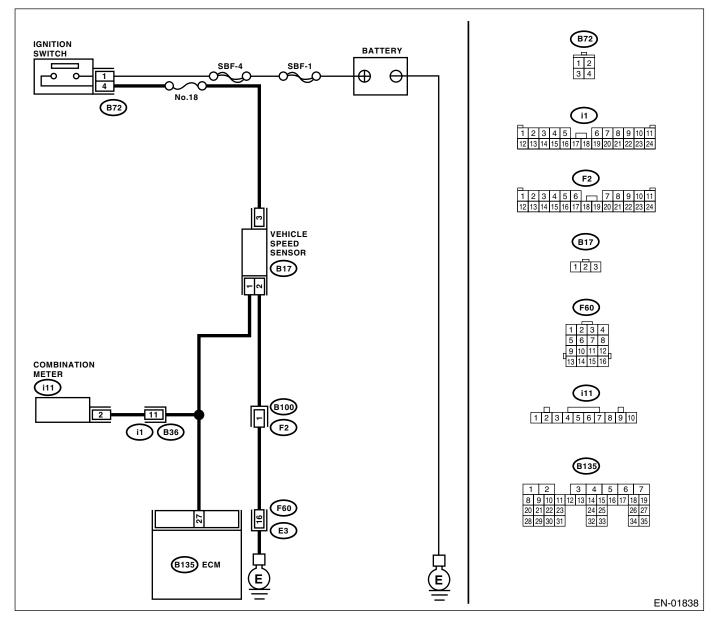
Immediately at fault recognition

 GENERAL DESCRIPTION <Ref. to GD(STi)-172, DTC P0503 — VEHICLE SPEED SENSOR INTER-</li> 

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

## WIRING DIAGRAM:



Step	Check	Yes	No
	Does the speedometer operate normally?		Check the speed- ometer. <ref. to<br="">IDI-13, Speedom- eter.&gt;</ref.>

# Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

Step	Check	Yes	Pro No Stud	
<ul> <li>CHECK HARNESS BETWEEN ECM AND COMBINATION METER CONNECTOR.         <ol> <li>Turn the ignition switch to OFF.</li> <li>Disconnect the connector from combination meter.</li> <li>Measure the resistance between ECM and combination meter.</li> <li>Connector &amp; terminal (B135) No. 27 — (i11) No. 2:</li> </ol> </li> </ul>	Is the resistance less than 10 $\Omega$ ?	Repair the poor contact in ECM connector.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between ECM and combi- nation meter con- nector • Poor contact in ECM connector • Poor contact in combination meter connector • Poor contact in combination meter connector	710

Bro DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS) A 1 -0111

# **BR:DTC P0506 — IDLE CONTROL SYSTEM RPM LOWER THAN EXPECTED** udios

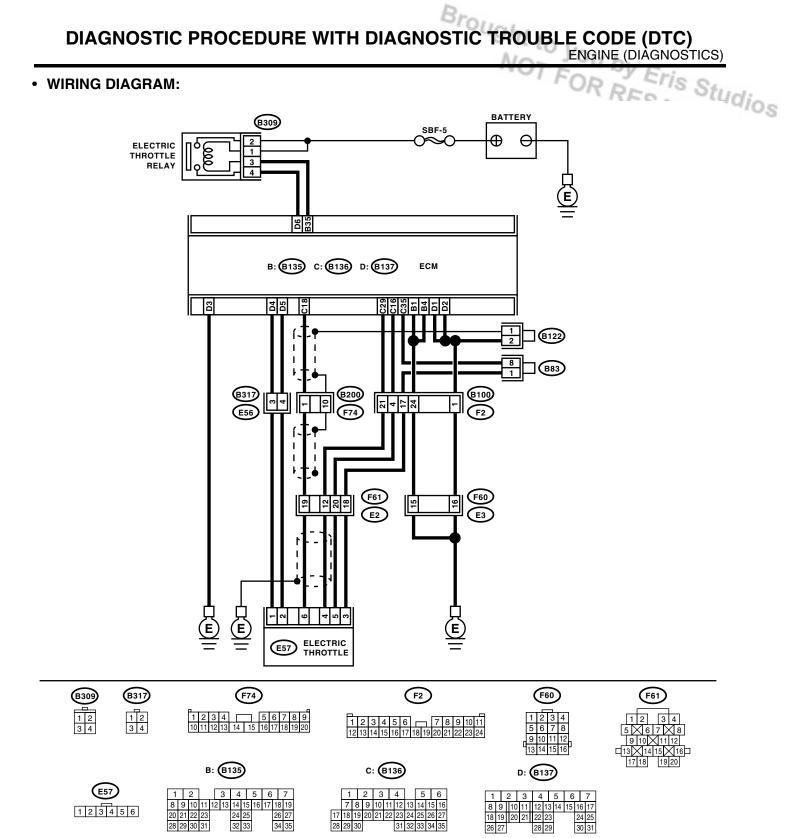
# DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION < Ref. to GD(STi)-174, DTC P0506 IDLE CONTROL SYSTEM RPM LOWER THAN EXPECTED -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

# • TROUBLE SYMPTOM:

- Engine is difficult to start.
- Engine does not start.
- Erroneous idling
- Engine stalls.

# CAUTION:



EN-01825

# Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL

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ENGINE (DIAGNOSTICS)

		For Stie			
	Step	Check	Yes	Pro No Sti	Int.
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt; NOTE: In this case, it is not necessary to inspect DTC P0506.</ref.>		<sup>Idio</sup>
2	CHECK AIR CLEANER ELEMENT. 1)Turn the ignition switch to OFF. 2)Check air cleaner element.	Is there excessive clogging on air cleaner element.	Replace the air cleaner element. <ref. in(sti)-8,<br="" to="">Air Cleaner.&gt;</ref.>	Go to step <b>3</b> .	
3	CHECK ELECTRIC THROTTLE. 1)Turn the ignition switch to OFF. 2)Remove the electric throttle. 3)Check the electric throttle.	Are there foreign particles in electric throttle?	eign particles from	Perform the diag- nosis of DTC P2101.	

# **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

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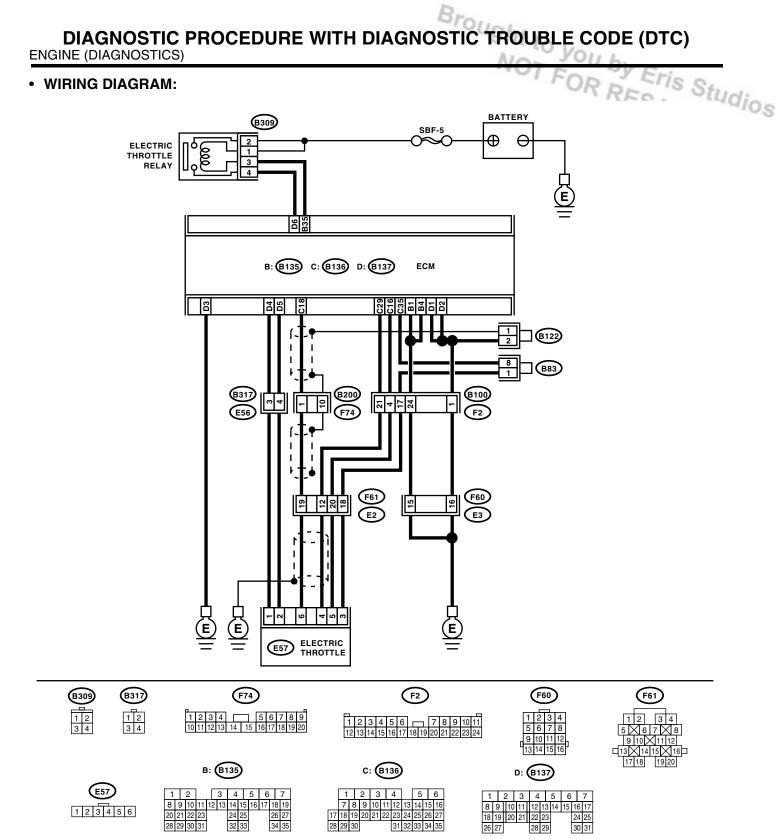
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ENGINE (DIÀGNOSTICS)

# BS:DTC P0507 — IDLE CONTROL SYSTEM RPM HIGHER THAN EXPECTED —

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION < Ref. to GD(STi)-176, DTC P0507 IDLE CONTROL SYSTEM RPM HIGHER THAN EXPECTED -, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Engine keeps running at higher revolution than specified idling revolution.

## CAUTION:



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Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

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Step	Check	Yes	PE No Sti
1 CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt; NOTE: In this case, it is not necessary to inspect DTC P0507.</ref.>	
<ul> <li>2 CHECK AIR INTAKE SYSTEM.         <ol> <li>1)Turn the ignition switch to ON.</li> <li>2)Start the engine, and idle it.</li> <li>3)Check the following items.</li> <li>Loose installation of intake manifold and throttle body</li> <li>Cracks of intake manifold gasket and throttle body gasket</li> <li>Disconnections of vacuum hoses</li> </ol> </li> </ul>	tem?	Repair the air suc- tion and leaks.	Go to step <b>3</b> .
<ul> <li>CHECK ELECTRIC THROTTLE.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Remove the electric throttle.</li> <li>3)Check the electric throttle.</li> </ul>	Are there foreign particles in electric throttle?	Remove the for- eign particles from electric throttle.	Perform the diag- nosis of DTC P2102.

# **BT:DTC P0512 — STARTER REQUEST CIRCUIT -**

# • DTC DETECTING CONDITION:

- Immediately at fault recognition
- RESALE • GENERAL DESCRIPTION < Ref. to GD(STi)-178, DTC P0512 - STARTER REQUEST CIRCUIT -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

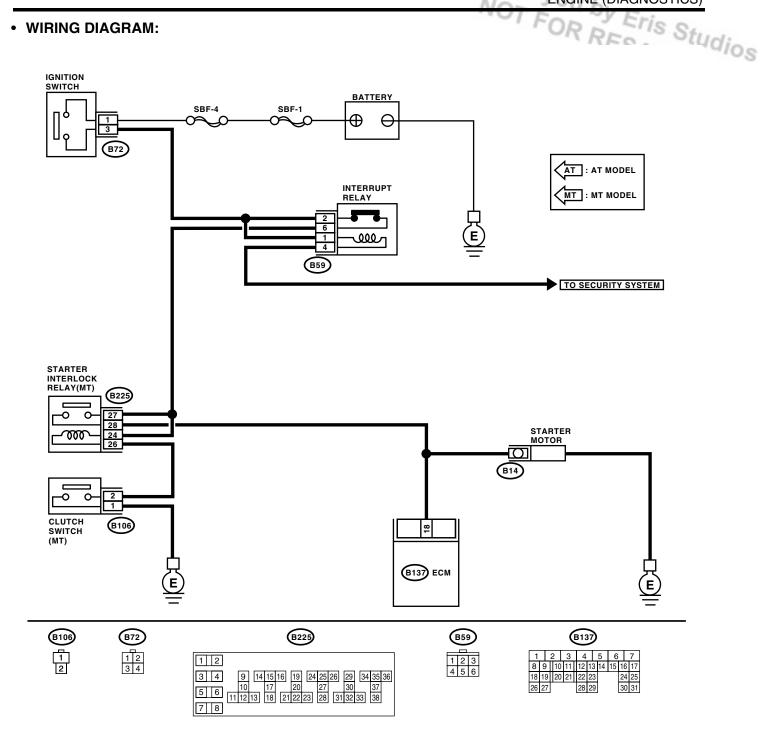
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- TROUBLE SYMPTOM:
  - · Failure of engine to start

# CAUTION:

# Bro DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

WIRING DIAGRAM: •



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# Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) No- Youh

ENGINE (DIAGNOSTICS)

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Step	Check	Yes	Pro Nos Sti	Id.
1 CHECK OPERATION OF STARTER MOTOR	Does the starter motor oper- ate when ignition switch is turned to ON?	Repair the battery short circuit in starter motor cir- cuit. After repair, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	Check the starter motor circuit. <ref. to EN(STi)-55, STARTER MOTOR CIR- CUIT, Diagnostics for Engine Start- ing Failure.&gt;</ref. 	<sup>rq</sup> ios

# Bre DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) hi-

ENGINE (DIÀGNOSTICS)

# **BU:DTC P0519 — IDLE CONTROL SYSTEM MALFUNCTION (FAIL-SAFE)** Studios

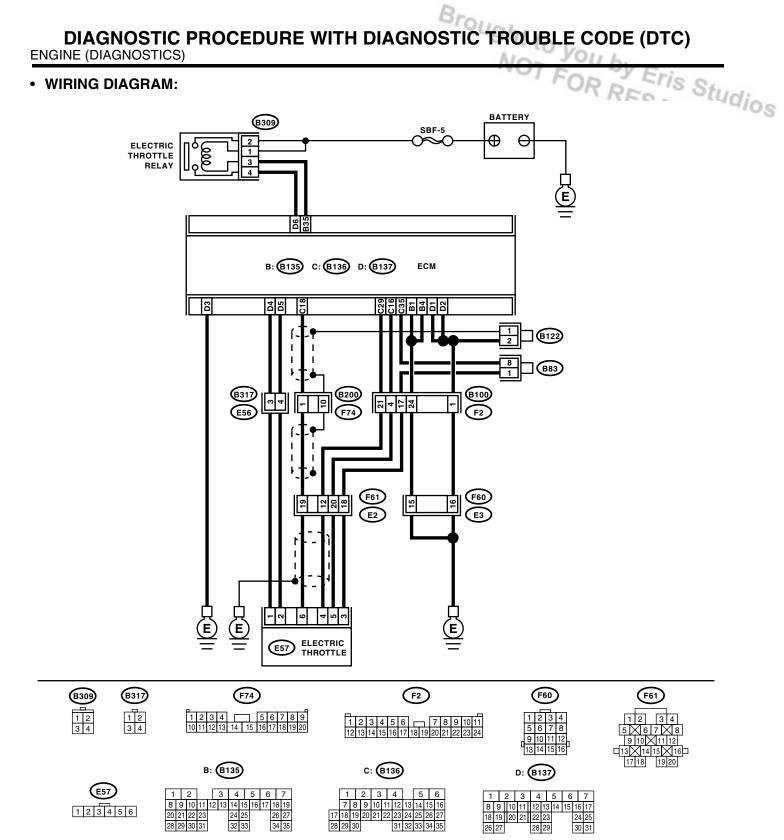
# • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-179, DTC P0519 IDLE CONTROL SYSTEM MAL-FUNCTION (FAIL-SAFE) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

# • TROUBLE SYMPTOM:

- Engine keeps running at higher revolution than specified idling revolution.
- Fuel is cut according to fail-safe function.

### CAUTION:



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DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

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Step	Check	Yes	No St
1 CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt; NOTE: In this case, it is not necessary to inspect DTC P0519.</ref.>	Go to step 2.
<ul> <li>2 CHECK AIR INTAKE SYSTEM.         <ol> <li>1)Turn the ignition switch to ON.</li> <li>2)Start the engine, and idle it.</li> <li>3)Check the following items.</li> <li>Loose installation of intake manifold and throttle body</li> <li>Cracks of intake manifold gasket and throttle body gasket</li> <li>Disconnections of vacuum hoses</li> </ol> </li> </ul>	tem?	Repair the air suc- tion and leaks.	Go to step 3.
<ul> <li>CHECK ELECTRIC THROTTLE.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Remove the electric throttle.</li> <li>3)Check the electric throttle.</li> </ul>	Are there foreign particles in electric throttle?	Remove the for- eign particles from electric throttle.	Perform the diag- nosis of DTC P2102.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

# BV:DTC P0604 — INTERNAL CONTROL MODULE RANDOM ACCESS MEMORY (RAM) ERROR —

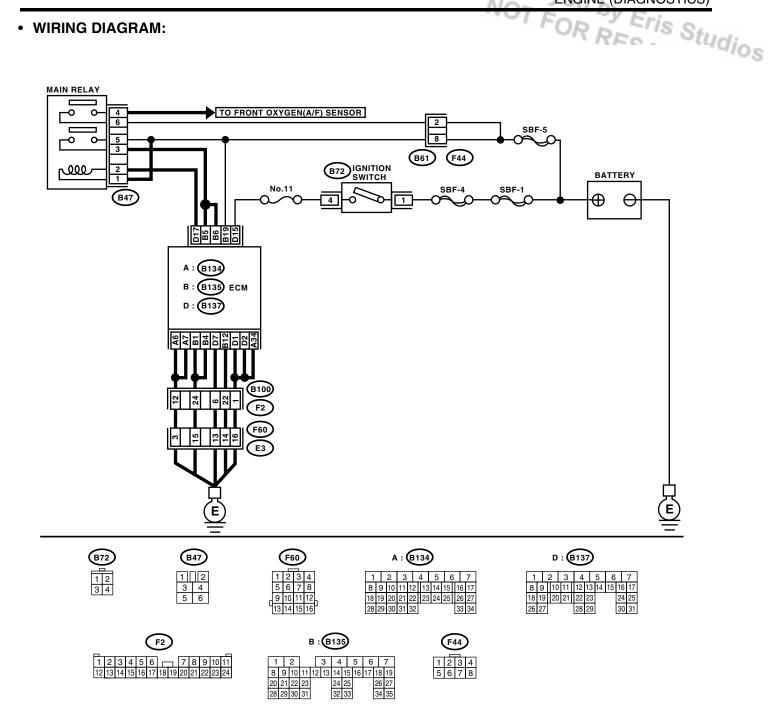
# • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-181, DTC P0604 INTERNAL CONTROL MODULE
- RANDOM ACCESS MEMORY (RAM) ERROR —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Engine does not start.
  - Engine stalls.

#### CAUTION:

Bro DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

WIRING DIAGRAM: •



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Ste	p	Check	Yes	No
1 CHECK ANY OTHE	ER DTC ON DISPLAY.	Does the Subaru Select Moni-	Replace the ECM.	A temporary poor
			<ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	contact.

# DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

# BW:DTC P0605 — INTERNAL CONTROL MODULE READ ONLY MEMORY (ROM) ERROR —

NOTE:

For the diagnostic procedure, refer to DTC P0607. <Ref. to EN(STi)-249, DTC P0607 — CONTROL MOD-ULE PERFORMANCE —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

# Bro DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) Al-

# ENGINE (DIÀGNOSTICS) Eris Studios

R RESALE

# **BX:DTC P0607 — CONTROL MODULE PERFORMANCE -**

# DTC DETECTING CONDITION:

Immediately at fault recognition

• GENERAL DESCRIPTION < Ref. to GD(STi)-183, DTC P0605 - INTERNAL CONTROL MODULE READ ONLY MEMORY (ROM) ERROR -, Diagnostic Trouble Code (DTC) Detecting Criteria.> and <Ref. to GD(STi)-184, DTC P0607 - CONTROL MODULE PERFORMANCE -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

- TROUBLE SYMPTOM:
  - Erroneous idling
  - Poor driving performance

#### CAUTION:

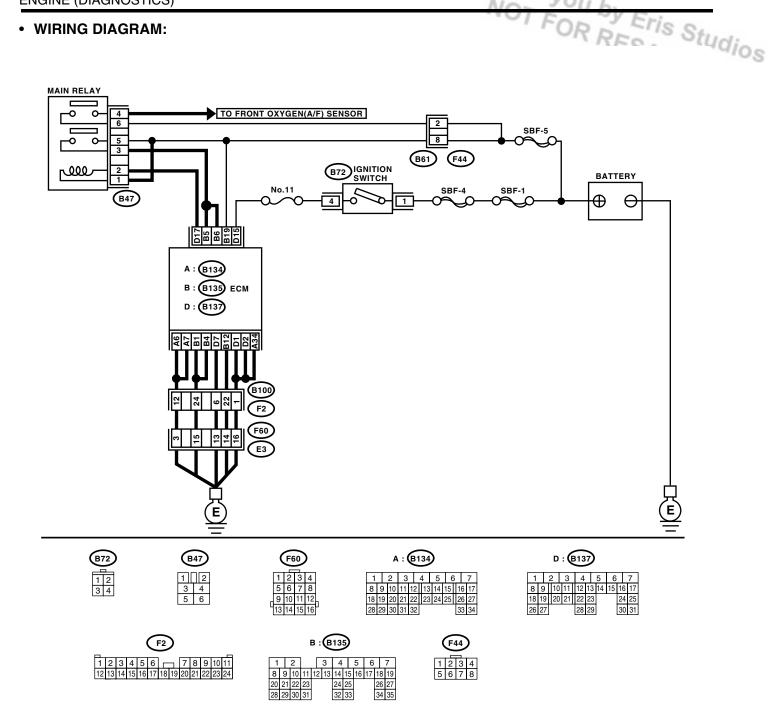
Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** 

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ENGINE (DIAGNOSTICS)

• WIRING DIAGRAM:



EN-01816

	Step	Check	Yes	No
1	CHECK INPUT VOLTAGE OF ECM 1)Turn the ignition switch to ON. 2)Measure the voltage between ECM connec- tor and 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 circuit or ground short of power supply circuit.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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No

Step	Check	Yes	No
<ul> <li>CHECK INPUT VOLTAGE OF ECM         <ol> <li>Start the engine.</li> <li>Measure the voltage between ECM conr tor and ground.</li> <li>Connector &amp; terminal</li></ol></li></ul>	Is the voltage 13 — 15 V?	Go to step <b>3</b> .	Repair the open circuit or ground short of power supply circuit.
<ul> <li>CHECK GROUND HARNESS OF ECM Measure the voltage between ECM conne and ground.</li> <li>Connector &amp; terminal (B137) No. 1 (+) — Chassis ground (- (B137) No. 2 (+) — Chassis ground (-</li> </ul>	-):	Repair poor con- tact of ECM con- nector. If poor contact occur, replace the ECM.	Retighten the engine ground ter- minal.

# BY:DTC P0638 — THROTTLE ACTUATOR CONTROL RANGE/PERFORMANCE (BANK 1) —

NOTE:

For the diagnostic procedure, refer to DTC P2101. <Ref. to EN(STi)-325, DTC P2101 — THROTTLE ACTU-ATOR CONTROL MOTOR CIRCUIT RANGE/PERFORMANCE —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

# BZ:DTC P0691 — COOLING FAN 1 CONTROL CIRCUIT LOW -

# • DTC DETECTING CONDITION:

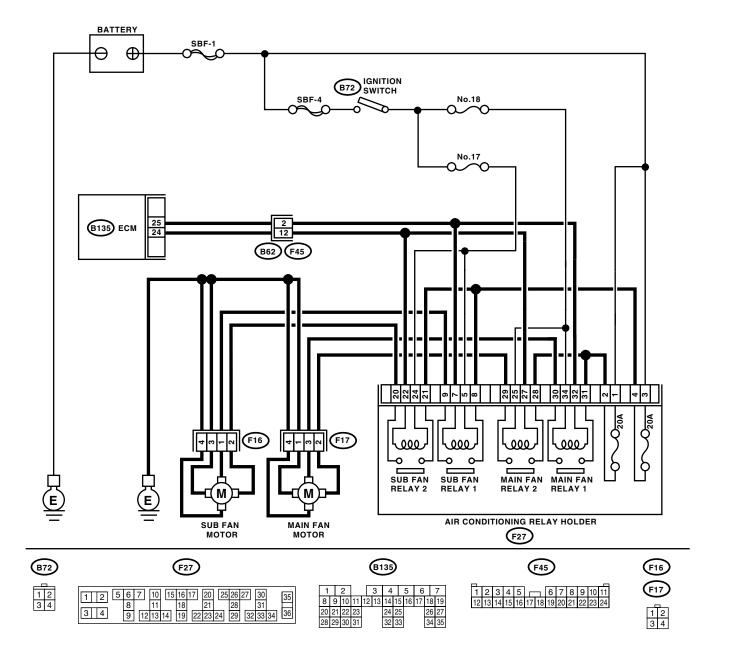
- Two consecutive driving cycles with fault
- ESALE • GENERAL DESCRIPTION < Ref. to GD(STi)-190, DTC P0691 - COOLING FAN 1 CONTROL CIR-CUIT LOW -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

# • TROUBLE SYMPTOM:

- Radiator fan does not operate properly.
- Overheating

## **CAUTION:**

• WIRING DIAGRAM:



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Step	Check	Yes	REO NO Studi
<ul> <li>CHECK OUTPUT SIGNAL FROM ECM.         <ol> <li>Turn the ignition switch to OFF.</li> <li>Connect the test mode connector.</li> <li>Turn the ignition switch to ON.</li> <li>While operating the radiator fan relay, measure voltage between ECM terminal and ground.</li> <li>NOTE:</li> <li>Radiator fan relay operation can be executed using Subaru Select Monitor. For procedure, refer to "Compulsory Valve Operation Check Mode". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""></ref.></li> </ol> </li> <li>Connector &amp; terminal (B135) No. 25 (+) — Chassis ground (-):</li> </ul>		Repair poor con- tact in ECM con- nector.	Go to step 2.
(B135) No. 24 (+) — Chassis ground (-):		O a ta atau <b>0</b>	Danain marga
<ul> <li>CHECK GROUND SHORT CIRCUIT IN RADI- ATOR FAN RELAY CONTROL CIRCUIT.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connectors from ECM.</li> <li>3)Measure the resistance of harness between ECM connector and chassis ground.</li> <li>Connector &amp; terminal</li> <li>(B135) No. 25 — Chassis ground:</li> <li>(B135) No. 24 — Chassis ground:</li> </ul>	Is the resistance more than 1 MΩ?	Go to step 3.	Repair ground short circuit in radi- ator fan relay con- trol circuit.
<ul> <li>CHECK POWER SUPPLY FOR RELAY.</li> <li>1)Remove the main fan relay 1 and main fan relay 2 from A/C relay holder.</li> <li>2)Turn the ignition switch to ON.</li> <li>3)Measure the voltage between fuse and relay box (F/B) connector and chassis ground.</li> <li>Connector &amp; terminal         <ul> <li>(F27) No. 27 (+) — Chassis ground (-):</li> <li>(F27) No. 32 (+) — Chassis ground (-):</li> </ul> </li> </ul>	Is the voltage more than 10 V?	Go to step 4.	Repair open circuit in harness between ignition switch and fuse and relay box (F/ B) connector.
<ul> <li>CHECK MAIN FAN RELAY.         <ol> <li>Turn the ignition switch to OFF.</li> <li>Measure the resistance between main fan relay terminals.</li> <li>Terminals</li> <li>No. 32 — No. 34: (Main fan relay 1)</li> <li>No. 25 — No. 27: (Main fan relay 2)</li> </ol> </li> </ul>	Is the resistance 87 — 107 $\Omega$ ?	Go to step 5.	Replace the main fan relay.
<ul> <li>5 CHECK OPEN CIRCUIT IN MAIN FAN RE- LAY CONTROL CIRCUIT. Measure the resistance of harness between ECM and fan relay connector. Connector &amp; terminal (B135) No. 25 — (F27) No. 32: (B135) No. 24 — (F27) No. 27:</li> </ul>	Is the resistance less than 1 $\Omega$ ?	Go to step <b>6</b> .	Repair harness and connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and fan relay connector • Poor contact in coupling connector
6 CHECK POOR CONTACT. Check poor contact in ECM or fan relay con- nector.	Is there poor contact in ECM or fan relay connector?	Repair poor con- tact in ECM or fan relay connector.	Contact your SOA Service Center.

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# CA:DTC P0692 - COOLING FAN 1 CONTROL CIRCUIT HIGH - RESALE

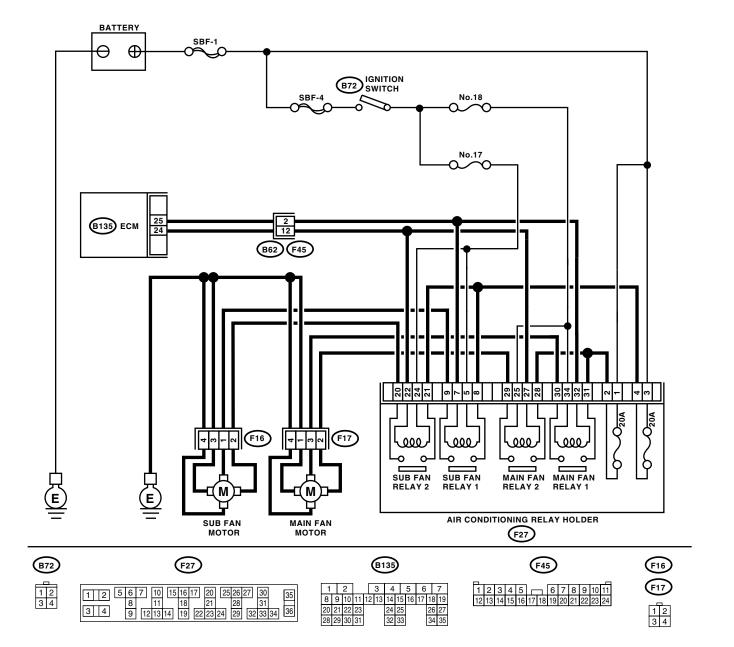
- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION <Ref. to GD(STi)-191, DTC P0692 COOLING FAN 1 CONTROL CIR-</li>
- TROUBLE SYMPTOM:
  - Radiator fan does not operate properly.
  - Overheating

#### **CAUTION:**

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

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• WIRING DIAGRAM:



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	Step	Check	Yes	Pro No Sti	Id.
1	Step CHECK OUTPUT SIGNAL FROM ECM. 1)Turn the ignition switch to OFF. 2)Connect the test mode connector. 3)Turn the ignition switch to ON. 4)While operating the radiator fan relay, mea- sure the voltage between ECM and chassis ground. NOTE: Radiator fan relay operation can be executed using the Subaru Select Monitor. For proce- dure, refer to "Compulsory Valve Operation Check Mode". <ref. compulso-<br="" en(sti)-43,="" to="">ry Valve Operation Check Mode.&gt; Connector &amp; terminal (B135) No. 25 (+) — Chassis ground (-): (B135) No. 24 (+) — Chassis ground (-):</ref.>	Does the voltage change 0 — 10 V?	Yes Even if malfunc- tion indicator light lights up, the cir- cuit has returned to a normal condi- tion at this time. In this case, repair the poor contact in ECM connector.	No Go to step 2.	Idios
2	CHECK SHORT CIRCUIT IN RADIATOR FAN RELAY CONTROL CIRCUIT. 1)Turn the ignition switch to OFF. 2)Remove the fan relay 1, fan relay 2 and fan mode relay. 3)Disconnect the test mode connector. 4)Turn the ignition switch to ON. 5)Measure the voltage between ECM and chassis ground. <i>Connector &amp; terminal</i> (B135) No. 25 (+) — Chassis ground (-): (B135) No. 24 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Repair the battery short circuit in radi- ator fan relay con- trol circuit. After repair, replace the ECM. <ref. to<br="">FU(STi)-41, Engine Control Module (ECM).&gt;</ref.>	Go to step 3.	
3	<ul> <li>CHECK MAIN FAN RELAY.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Remove the main fan relay.</li> <li>3)Measure the resistance between main fan relay terminals.</li> <li>Terminals</li> <li>No. 30 — No. 31: (Main fan relay 1)</li> <li>No. 28 — No. 29: (Main fan relay 2)</li> </ul>	Is the resistance less than 1 Ω?	Replace the main fan relay and ECM. <ref. to<br="">FU(STi)-41, Engine Control Module (ECM).&gt;</ref.>	Go to step 4.	
4	<ul> <li>CHECK SUB FAN RELAY.</li> <li>1)Remove the sub fan relay.</li> <li>2)Measure the resistance between sub fan relay terminals.</li> <li>Terminals</li> <li>No. 8 — No. 9: (Sub fan relay 1)</li> <li>No. 20 — No. 21: (Sub fan relay 2)</li> </ul>	Is the resistance less than 1 Ω?	Replace the sub fan relay and ECM. <ref. to<br="">FU(STi)-41, Engine Control Module (ECM).&gt;</ref.>	Go to step <b>5</b> .	
5	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact in ECM connector.	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	

#### **CB:DTC P0851 — NEUTRAL SWITCH INPUT CIRCUIT LOW**

#### DTC DETECTING CONDITION:

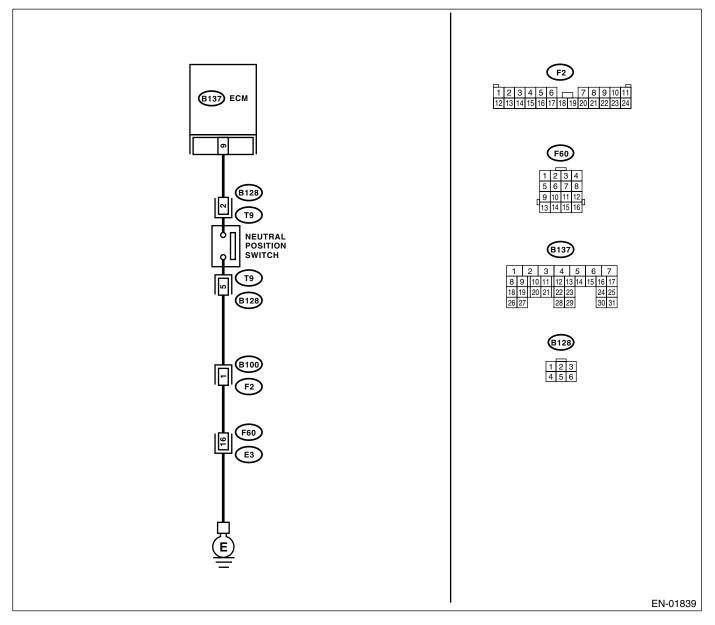
- Two consecutive driving cycles with fault
- SALE • GENERAL DESCRIPTION < Ref. to GD(STi)-192, DTC P0851 — NEUTRAL SWITCH INPUT CIRCUIT LOW ----, Diagnostic Trouble Code (DTC) Detecting Criteria.>

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- TROUBLE SYMPTOM:
  - Erroneous idling

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



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Step	Check	Yes	No Stu	d.
CHECK INPUT SIGNAL FOR ECM.           1)Turn the ignition switch to ON.           2)Place the shift lever in neutral.           3)Measure the voltage between ECM and	Is the voltage more than 10 V?	Go to step 2.	Go to step 4.	410s
chassis ground. <i>Connector &amp; terminal</i> <i>(B137) No. 9 (+) — Chassis ground (–):</i>			-	
<ul> <li>CHECK INPUT SIGNAL FOR ECM.         <ol> <li>Place the shift lever in a position except for neutral.</li> <li>Measure the voltage between ECM and chassis ground.</li> <li>Connector &amp; terminal</li></ol></li></ul>	Is the voltage less than 1 V?	Go to step 3.	Go to step 4.	
3 CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Contact your SOA Service Center.	
<ul> <li>CHECK NEUTRAL POSITION SWITCH.         <ol> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from transmission harness.</li> <li>3)Place the shift lever in neutral.</li> <li>4)Measure the resistance between transmission harness and connector terminals.</li> <li>Connector &amp; terminal</li></ol></li></ul>	Is the resistance more than 1 MΩ?	Go to step <b>5</b> .	Repair short circuit in transmission harness or replace neutral position switch.	
<ul> <li>5 CHECK NEUTRAL POSITION SWITCH.</li> <li>1)Place the shift lever in a position except for neutral.</li> <li>2)Measure the resistance between transmission harness connector terminals.</li> </ul>	Is the resistance less than 1 Ω?	Go to step <b>6</b> .	Repair short circuit in transmission harness or replace neutral position switch.	
6 CHECK HARNESS BETWEEN ECM AND NEUTRAL POSITION SWITCH CONNEC- TOR. Measure the resistance between ECM and chassis ground. <i>Connector &amp; terminal</i> (B137) No. 9 — Chassis ground:	Is the resistance more than 1 $M\Omega$ ?	Go to step 7.	Repair ground short circuit in har- ness between ECM and trans- mission harness connector.	
<ul> <li>7 CHECK HARNESS BETWEEN ECM AND NEUTRAL POSITION SWITCH CONNEC- TOR.</li> <li>1)Disconnect the connector from ECM.</li> <li>2)Measure the resistance of harness between ECM and transmission harness connector.</li> <li>Connector &amp; terminal (B137) No. 9 — (B128) No. 2:</li> </ul>	Is the resistance less than 1 $\Omega$ ?	Go to step 8.	Repair open circuit in harness between ECM and transmission har- ness connector.	
<ul> <li>8 CHECK HARNESS BETWEEN ECM AND NEUTRAL POSITION SWITCH CONNEC- TOR. Measure the resistance of harness between transmission harness connector and engine ground. Connector &amp; terminal (B128) No. 2 — Engine ground:</li> </ul>	Is the resistance less than 5 $\Omega$ ?	Go to step <b>9</b> .	Repair open circuit between transmis- sion harness con- nector and engine ground terminal.	
9 CHECK POOR CONTACT. Check poor contact in transmission harness connector.	Is there poor contact in trans- mission harness connector?	Repair poor con- tact in transmis- sion harness connector.	Contact your SOA Service Center.	

#### CC:DTC P0852 — NEUTRAL SWITCH INPUT CIRCUIT HIGH

#### DTC DETECTING CONDITION:

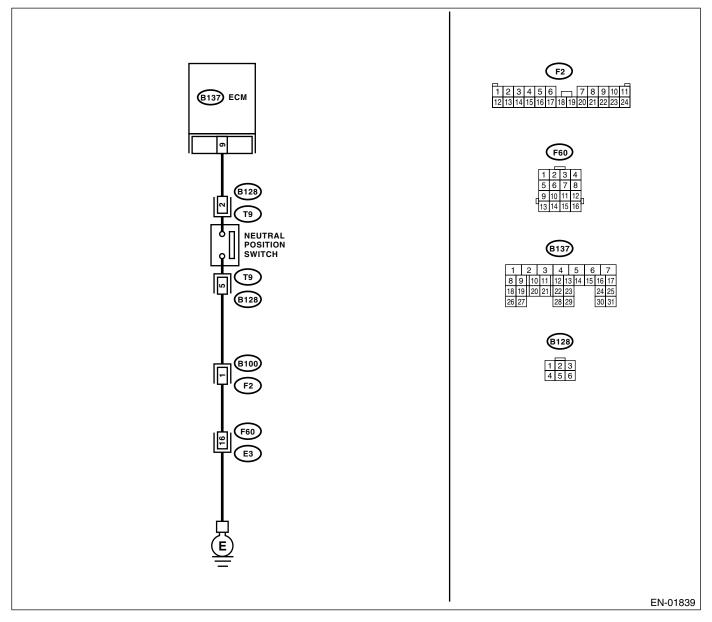
- Two consecutive driving cycles with fault
- SALE • GENERAL DESCRIPTION < Ref. to GD(STi)-193, DTC P0852 — NEUTRAL SWITCH INPUT CIRCUIT HIGH ----, Diagnostic Trouble Code (DTC) Detecting Criteria.>

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- TROUBLE SYMPTOM:
  - Erroneous idling

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



TEAL YER				
Step	Check	Yes	No Sti	Id:
1       CHECK INPUT SIGNAL FOR ECM.         1)Turn the ignition switch to ON.         2)Set the shift lever to except neutral position.         3)Measure the voltage between ECM and chassis ground.         Connector & terminal         (B137) No. 9 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 2.	Go to step 4.	1910 <sub>S</sub>
<ul> <li>CHECK INPUT SIGNAL FOR ECM.</li> <li>1)Set the shift lever to neutral position.</li> <li>2)Measure the voltage between ECM and chassis ground.</li> <li>Connector &amp; terminal</li> <li>(B137) No. 9 (+) — Chassis ground (-):</li> </ul>	Is the voltage more than 10 V?	Go to step 3.	Go to step 4.	
3 CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact in ECM connector.	Contact your SOA Service Center.	
<ul> <li>CHECK INPUT SIGNAL FOR ECM.</li> <li>1)Disconnect ECM connector from ECM.</li> <li>2)Measure the voltage between ECM and chassis ground.</li> <li>Connector &amp; terminal</li> <li>(B137) No. 9 (+) — Chassis ground (-):</li> </ul>	Is the voltage more than 10 V?	Repair the battery short circuit in har- ness between ECM and trans- mission connector.	Go to step <b>5</b> .	
<ul> <li>5 CHECK HARNESS BETWEEN ECM AND TRANSMISSION HARNESS CONNECTOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connectors from ECM and transmission harness connector (T9).</li> <li>3)Measure the resistance of harness between ECM and neutral switch connector.</li> <li>Connector &amp; terminal (B137) No. 9 — (B128) No. 2:</li> </ul>	Is the resistance less than 1 Ω?	Go to step 6.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between ECM and trans- mission harness • Poor contact in transmission har- ness connector • Poor contact in ECM connector	
6 CHECK NEUTRAL POSITION SWITCH GROUND LINE. Measure the resistance of harness between transmission harness connector and engine ground. Connector & terminal (B128) No. 5 — Engine ground:	Is the resistance less than 5 $\Omega$ ?	Go to step 7.	Repair the open circuit in harness of neutral position switch ground line.	
<ul> <li>7 CHECK NEUTRAL POSITION SWITCH.</li> <li>1)Set the shift lever to except neutral position.</li> <li>2)Measure the resistance between transmission harness connector receptacle's terminals.</li> <li><i>Terminals</i></li> <li><i>No. 2 — No. 5:</i></li> </ul>	Is the resistance less than 1 $\Omega$ ?	Go to step <b>8</b> .	Replace the neu- tral position switch.	
8 CHECK POOR CONTACT. Check poor contact in the transmission har- ness connector.	Is there poor contact in the transmission harness connector?	Repair poor con- tact in transmis- sion harness connector.	Contact your SOA Service Center.	

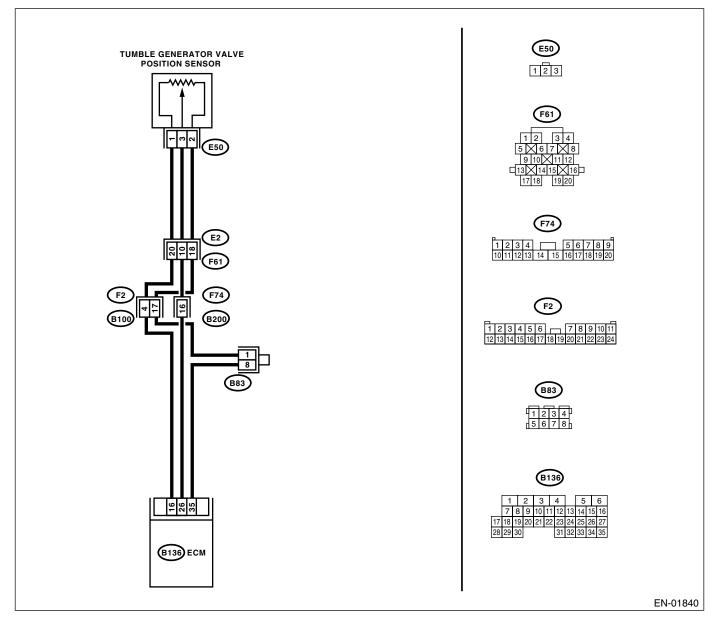
### CD: DTC P1086 — TUMBLE GENERATED VALVE POSITION SENSOR 2 CIR-CUIT LOW —

#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-194, DTC P1086 TUMBLE GENERATED VALVE PO-
- SITION SENSOR 2 CIRCUIT LOW —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
  - Engine stalls.
  - Poor driving performance

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



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	Step		Yes	REO NO Sti	Id:
1	Step CHECK CURRENT DATA. 1)Start the engine. 2)Read the data of throttle position sensor sig- nal using Subaru Select Monitor or OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>			No Even if malfunc- tion indicator light lights up, the cir- cuit has returned to a normal condi- tion at this time. A temporary poor contact of the con- nector may be the cause. NOTE: In this case, repair the following: • Poor contact in throttle position sensor connector • Poor contact in ECM connector	Idios
2	CHECK INPUT SIGNAL FOR ECM. Measure the voltage between ECM connector and chassis ground while tumble generator valve is fully closed. Connector & terminal (B136) No. 16 (+) — Chassis ground (–):	Is the voltage more than 4.5 V?	Go to step 4.	Poor contact in coupling connector Go to step 3.	
3	CHECK INPUT SIGNAL FOR ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 16 (+) — Chassis ground (-):	Shake the ECM harness and connector, while monitoring value of voltage meter. Does the voltage change?	Repair the poor contact in ECM connector.	Contact your SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	
4	CHECK INPUT SIGNAL FOR ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 26 (+) — Chassis ground (–):	Is the voltage less than 0.1 V?	Go to step <b>6</b> .	Go to step <b>5</b> .	
5	CHECK INPUT SIGNAL FOR ECM. (USING SUBARU SELECT MONITOR) Measure the voltage between ECM connector and chassis ground.	Shake the ECM harness and connector, while monitoring value of Subaru Select Moni- tor. Does the voltage change?	Repair the poor contact in ECM connector.	Go to step 6.	

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	Step	Check	Yes	Pro No Sti	Int.
6	CHECK HARNESS BETWEEN ECM AND TUMBLE GENERATOR VALVE POSITION SENSOR CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connectors from tumble gen- erator valve position sensor. 3)Turn the ignition switch to ON. 4)Measure the voltage between tumble gener- ator valve position sensor connector and engine ground. Connector & terminal (E50) No. 1 (+) — Engine ground (-):	Is the voltage more than 4.5 V?	Go to step 7.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between tumble generator valve position sen- sor and ECM con- nector • Poor contact in tumble generator valve position sen- sor connector • Poor contact in ECM connector • Poor contact in ECM connector • Poor contact in coupling connector	
7	CHECK HARNESS BETWEEN ECM AND TUMBLE GENERATOR VALVE POSITION SENSOR CONNECTOR. 1)Turn the ignition switch to OFF. 2)Measure the resistance of harness between ECM connector and tumble generator valve position sensor connector. Connector & terminal (B136) No. 26 — (E50) No. 3:	Is the resistance less than 1 Ω?	Go to step 8.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between tumble generator valve position sen- sor and ECM con- nector • Poor contact in ECM connector • Poor contact in tumble generator valve position sen- sor connector • Poor contact in tumble generator valve position sen- sor connector • Poor contact in coupling connector	
8	CHECK HARNESS BETWEEN ECM AND TUMBLE GENERATOR VALVE POSITION SENSOR CONNECTOR. Measure the resistance of harness between tumble generator valve position sensor con- nector and engine ground. Connector & terminal (E50) No. 3 — Engine ground:	Is the resistance more than 1 $M\Omega$ ?	Go to step <b>9.</b>	Repair the ground short circuit in har- ness between tumble generator valve position sen- sor and ECM con- nector.	
9	CHECK POOR CONTACT. Check poor contact in tumble generator valve position sensor connector.	Is there poor contact in tumble generator valve position sen- sor connector?	Repair the poor contact in tumble generator valve position sensor connector.	Replace the tum- ble generator valve assembly. <ref. fu(sti)-<br="" to="">34, Tumble Gener- ator Valve Assem- bly.&gt;</ref.>	

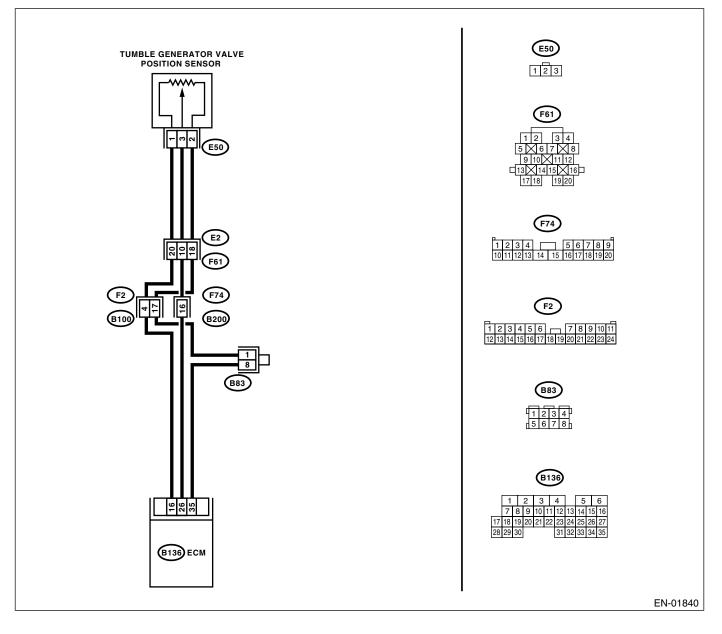
ENGINE (DIÀGNOSTICS)

### CE:DTC P1087 — TUMBLE GENERATED VALVE POSITION SENSOR 2 CIRCUIT HIGH —

- DTC DETECTING CONDITION:
  - Immediately at fault recognition
  - GENERAL DESCRIPTION < Ref. to GD(STi)-196, DTC P1087 TUMBLE GENERATED VALVE PO-
  - SITION SENSOR 2 CIRCUIT HIGH —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
  - Engine stalls.
  - Poor driving performance

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



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ENGINE (DIAGNOSTICS)

	Step	Check	Yes	No St	lel.
2	Step CHECK CURRENT DATA. 1)Start the engine. 2)Read the data of throttle position sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.  CHECK HARNESS BETWEEN TUMBLE GENERATOR VALVE POSITION SENSOR AND ECM CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from throttle position sensor. 3)Measure the resistance of harness between throttle position sensor connector and engine ground. Connector &amp; terminal</ref.>	Check         Is the voltage more than 4.9 V?         Is the resistance less than 5 Ω?		Even if malfunc- tion indicator light lights up, the cir- cuit has returned to a normal condi- tion at this time. A temporary poor contact of the con- nector may be the cause. NOTE: In this case, repair the following: • Poor contact in tumble generator valve position sen- sor connector • Poor contact in ECM connector • Poor contact in coupling connector Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between tumble generator	Idios
	Connector & terminal (E50) No. 2 — Engine ground:			valve position sen- sor and ECM con- nector • Poor contact in coupling connector • Poor contact in joint connector	
3	CHECK HARNESS BETWEEN THROTTLE POSITION SENSOR AND ECM CONNEC- TOR. 1)Turn the ignition switch to ON. 2)Measure the voltage between throttle posi- tion sensor connector and engine ground. <i>Connector &amp; terminal</i> (E50) No. 3 (+) — Engine ground (–):	Is the voltage more than 4.9 V?	short circuit in har- ness between tumble generator	Replace the tum- ble generator valve assembly. <ref. fu(sti)-<br="" to="">34, Tumble Gener- ator Valve Assem- bly.&gt;</ref.>	

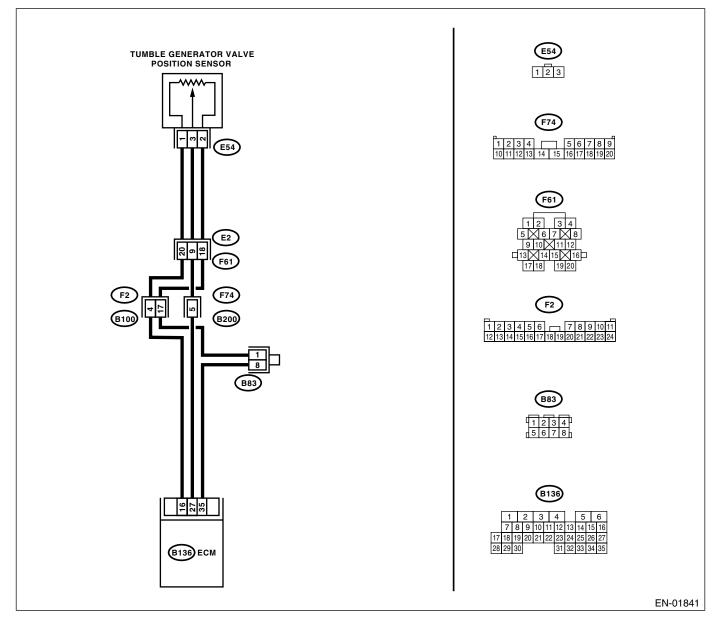
ENGINE (DIÀGNOSTICS)

# CF: DTC P1088 — TUMBLE GENERATED VALVE POSITION SENSOR 1 CIR-

- DTC DETECTING CONDITION:
  - Immediately at fault recognition
  - GENERAL DESCRIPTION < Ref. to GD(STi)-198, DTC P1088 TUMBLE GENERATED VALVE PO-</li>
  - SITION SENSOR 1 CIRCUIT LOW —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
  - Engine stalls.
  - · Poor driving performance

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



No

YOUL

ENGINE (DIAGNOSTICS)

Step	Check	Yes	No Stud	
<ol> <li>CHECK CURRENT DATA.         <ol> <li>Start the engine.</li> <li>Read the data of tumble generator valve position sensor signal using Subaru Select Monitor or OBD-II general scan tool.</li> <li>NOTE:                 <ul> <li>Subaru Select Monitor</li> <li>For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE".</li> <li>Ref. to EN(STi)-28, Subaru Select Monitor.&gt;</li> <li>OBD-II general scan tool</li> <li>For detailed operation procedures, refer to the OBD-II general scan tool</li> <li>Subaru Select Nonitor scan tool</li> <li>For detailed operation procedures, refer to the OBD-II general scan tool</li> <li>Subaru Select Nonitor scan tool</li> <li>Subaru Select Nonitor scan tool</li> <li>Subaru Select Nonitor.&gt;</li> <li>OBD-II general scan tool</li> <li>Subaru Select Nonitor scan tool</li> <li>Subaru Select Nonitor scan tool</li> <li>Subaru Select Nonitor.&gt;</li> <li>Subaru Select Nonitor.&gt;</li> </ul> </li> </ol></li> </ol>	Is the voltage less than 0.1 V?	Go to step 2.	Even if malfunc- tion indicator light lights up, the cir- cuit has returned to a normal condi- tion at this time. A temporary poor contact of the con- nector may be the cause. NOTE: In this case, repair the following: • Poor contact in tumble generator valve position sen- sor connector • Poor contact in ECM connector • Poor contact in coupling connector	S
2 CHECK INPUT SIGNAL FOR ECM. Measure the voltage between ECM connector and chassis ground while throttle valve is fully closed. Connector & terminal (B136) No. 16 (+) — Chassis ground (-):	Is the voltage more than 4.5 V?	Go to step 4.	Go to step 3.	
Measure the voltage between ECM connector and chassis ground. <i>Connector &amp; terminal</i> <i>(B136) No. 16 (+) — Chassis ground (–):</i>	Shake the ECM harness and connector, while monitoring value of voltage meter. Does the voltage change?	Repair the poor contact in ECM connector.	Contact your SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	
4 CHECK INPUT SIGNAL FOR ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 27 (+) — Chassis ground (-):	Is the voltage less than 0.1 V?	Go to step <b>6</b> .	Go to step <b>5</b> .	
SUBARU SELECT MONITOR) Measure the voltage between ECM connector	Shake the ECM harness and connector, while monitoring value of Subaru Select Moni- tor. Does the voltage change?	Repair the poor contact in ECM connector.	Go to step 6.	

	Step	Check	Yes	No St	lal.
TUMBLE SENSON 1)Turn th 2)Discorn tion sens 3)Turn th 4)Measu tion sens <i>Conne</i>	HARNESS BETWEEN ECM AND E GENERATOR VALVE POSITION R CONNECTOR. the ignition switch to OFF. nnect the connectors from throttle posi-	Is the voltage more than 4.5 V?		Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between tumble generator valve position sen- sor and ECM con- nector • Poor contact in throttle position sensor connector • Poor contact in ECM connector • Poor contact in coupling connector • Poor contact in coupling connector	
TUMBLE SENSOF 1)Turn th 2)Measu ECM con connecto <i>Conne</i>	R CONNECTOR. the ignition switch to OFF. ure the resistance of harness between onnector and throttle position sensor	Is the resistance less than 1 $\Omega$ ?	Go to step 8.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between tumble generator valve position sen- sor and ECM con- nector • Poor contact in ECM connector • Poor contact in tumble generator valve position sen- sor connector • Poor contact in tumble generator valve position sen- sor connector • Poor contact in coupling connector	
THROT TOR. Measure tumble g nector at <i>Conne</i>	A HARNESS BETWEEN ECM AND TLE POSITION SENSOR CONNEC- e the resistance of harness between generator valve position sensor con- and engine ground. ector & terminal b) No. 3 — Engine ground:	Is the resistance more than 1 MΩ?	Go to step 9.	Repair the ground short circuit in har- ness between tumble generator valve position sen- sor and ECM con- nector.	
Check p	<b>POOR CONTACT.</b> boor contact in tumble generator valve sensor connector.	Is there poor contact in tumble generator valve position sen- sor connector?	Repair the poor contact in tumble generator valve position sensor connector.	Replace the tum- ble generator valve assembly. <ref. fu(sti)-<br="" to="">34, Tumble Gener- ator Valve Assem- bly.&gt;</ref.>	

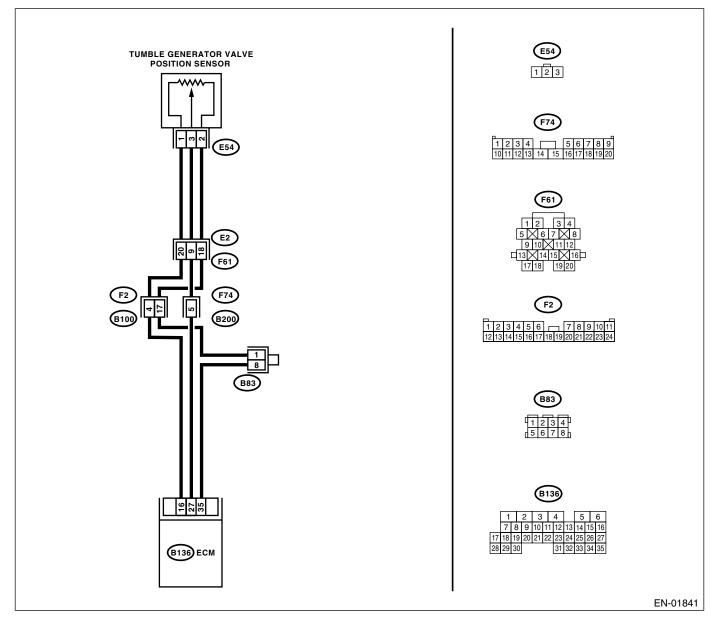
### CG:DTC P1089 — TUMBLE GENERATED VALVE POSITION SENSOR 1 CIRCUIT HIGH —

#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-200, DTC P1089 TUMBLE GENERATED VALVE PO-SITION SENSOR 1 CIRCUIT HIGH —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
  - Engine stalls.
  - Poor driving performance

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



Fop y Etis o				
Step	Check	Yes	No Studio	
1       CHECK CURRENT DATA.         1)Start the engine.       2)Read the data of tumble generator valve position sensor signal using Subaru Select Monitor or OBD-II general scan tool.         NOTE:       •Subaru Select Monitor         For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to="">         •OBD-II general scan tool         For detailed operation procedures, refer to the OBD-II general scan tool         For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Is the voltage more than 4.9 V?		Even if malfunc- tion indicator light lights up, the cir- cuit has returned to a normal condi- tion at this time. A temporary poor contact of the con- nector may be the cause. NOTE: In this case, repair the following: • Poor contact in tumble generator valve position sen- sor connector • Poor contact in ECM connector • Poor contact in coupling connector	
<ul> <li>CHECK HARNESS BETWEEN TUMBLE GENERATOR VALVE POSITION SENSOR AND ECM CONNECTOR.         <ol> <li>Turn the ignition switch to OFF.</li> <li>Disconnect the connector from throttle position sensor.</li> <li>Measure the resistance of harness between tumble generator valve position sensor con- nector and engine ground.</li> <li>Connector &amp; terminal (E54) No. 2 — Engine ground:</li> </ol> </li> </ul>		Go to step 3.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between tumble generator valve position sen- sor and ECM con- nector • Poor contact in coupling connector • Poor contact in joint connector	
<ul> <li>CHECK HARNESS BETWEEN TUMBLE GENERATOR VALVE POSITION SENSOR AND ECM CONNECTOR.         <ol> <li>Turn the ignition switch to ON.</li> <li>Measure the voltage between throttle position sensor connector and engine ground.</li> <li>Connector &amp; terminal (E54) No. 3 (+) — Engine ground (-):</li> </ol> </li> </ul>	Is the voltage more than 4.9 V?	short circuit in har- ness between tumble generator	Replace the tum- ble generator valve assembly. <ref. fu(sti)-<br="" to="">34, Tumble Gener- ator Valve Assem- bly.&gt;</ref.>	

#### CH:DTC P1090 — TUMBLE GENERATED VALVE SYSTEM 1 (VALVE OPEN) -

#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-202, DTC P1090 TUMBLE GENERATED VALVE SYS-TEM 1 (VALVE OPEN) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

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#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt;</ref.>	Go to step 2.
2	CHECK TUMBLE GENERATOR VALVE RH. 1)Remove the tumble generator valve assem- bly. 2)Check the tumble generator valve body.	Does the tumble generator valve move smoothly? (No dirt or foreign materials clogged)	Replace the tum- ble generator valve assembly. <ref. fu(sti)-<br="" to="">34, Tumble Gener- ator Valve Assem- bly.&gt;</ref.>	Clean the tumble generator valve.

#### CI: DTC P1091 — TUMBLE GENERATED VALVE SYSTEM 1 (VALVE CLOSE) —

#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(STi)-203, DTC P1091 TUMBLE GENERATED VALVE SYS-TEM 1 (VALVE CLOSE) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)" <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt;</ref.>	Go to step 2.
2	CHECK TUMBLE GENERATOR VALVE RH. 1)Remove the tumble generator valve assem- bly. 2)Check the tumble generator valve body.	Does the tumble generator valve move smoothly? (No dirt or foreign materials clogged)	Replace the tum- ble generator valve assembly. <ref. fu(sti)-<br="" to="">34, Tumble Gener- ator Valve Assem- bly.&gt;</ref.>	Clean the tumble generator valve.

ENGINE (DIÀGNOSTICS)

# CJ:DTC P1092 — TUMBLE GENERATED VALVE SYSTEM 2 (VALVE OPEN) —

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-204, DTC P1092 TUMBLE GENERATED VALVE SYS-TEM 2 (VALVE OPEN) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt;</ref.>	Go to step 2.
2	CHECK TUMBLE GENERATOR VALVE RH. 1)Remove the tumble generator valve assem- bly. 2)Check the tumble generator valve body.	Does the tumble generator valve move smoothly? (No dirt or foreign materials clogged)	Replace the tum- ble generator valve assembly. <ref. fu(sti)-<br="" to="">34, Tumble Gener- ator Valve Assem- bly.&gt;</ref.>	Clean the tumble generator valve.

#### CK:DTC P1093 — TUMBLE GENERATED VALVE SYSTEM 2 (VALVE CLOSE) —

#### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-205, DTC P1093 TUMBLE GENERATED VALVE SYS-TEM 2 (VALVE CLOSE) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt;</ref.>	Go to step 2.
2	CHECK TUMBLE GENERATOR VALVE RH. 1)Remove the tumble generator valve assem- bly. 2)Check the tumble generator valve body.	Does the tumble generator valve move smoothly? (No dirt or foreign materials clogged)	Replace the tum- ble generator valve assembly. <ref. fu(sti)-<br="" to="">34, Tumble Gener- ator Valve Assem- bly.&gt;</ref.>	Clean the tumble generator valve.

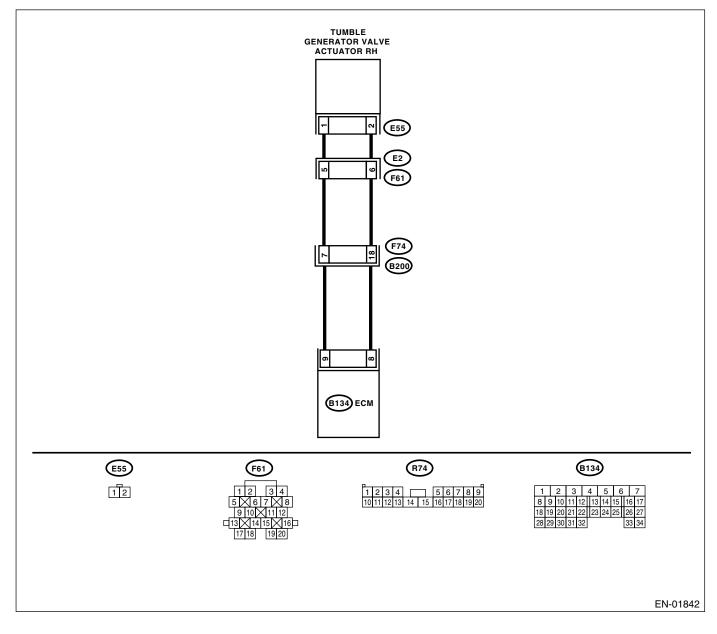
#### CL:DTC P1094 — TUMBLE GENERATED VALVE SIGNAL 1 CIRCUIT MALFUNC-AL E

#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-206, DTC P1094 TUMBLE GENERATED VALVE SIG-</li>
- NAL 1 CIRCUIT MALFUNCTION (OPEN) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



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	Step	Check	Yes	PEO NO Sti	Id
1	CHECK HARNESS BETWEEN ECM AND TUMBLE GENERATOR VALVE ACTUATOR CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from tumble gen- erator valve and ECM connector. 3)Measure the resistance between tumble generator valve actuator and ECM connector. Connector & terminal (E55) No. 1 — (B134) No. 9: (E55) No. 2 — (B134) No. 8:		Go to step 2.	Repair the open circuit between ECM and tumble generator valve connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and tumble generator valve actuator connec- tor. • Poor contact in coupling connec- tor.	
2	CHECK POOR CONTACT. Check poor contact in tumble generator valve actuator connector.	Is there poor contact in tumble generator valve actuator con- nector?	Repair the poor contact in tumble generator valve actuator connec- tor.	Replace the tum- ble generator valve assembly. <ref. fu(sti)-<br="" to="">34, Tumble Gener- ator Valve Assem- bly.&gt;</ref.>	

### CM:DTC P1095 — TUMBLE GENERATED VALVE SIGNAL 1 CIRCUIT MAL-FUNCTION (SHORT) —

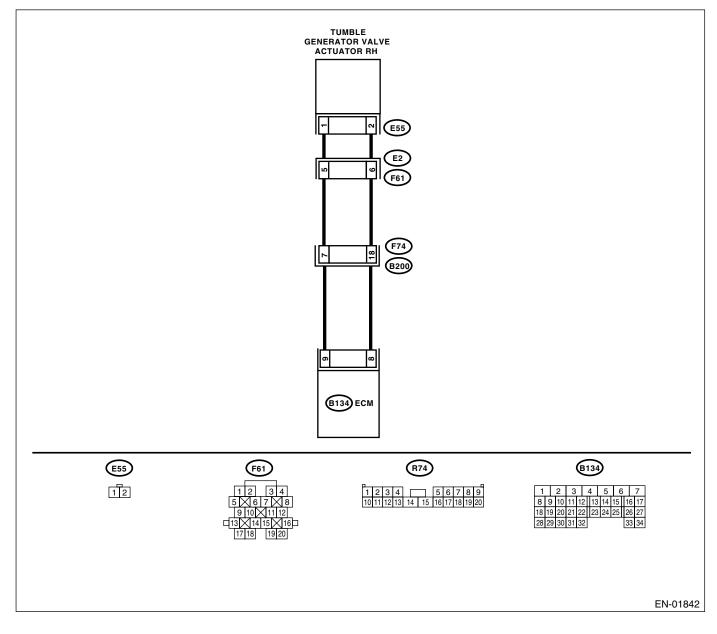
#### • DTC DETECTING CONDITIÓN:

• Immediately at fault recognition

- GENERAL DESCRIPTION < Ref. to GD(STi)-208, DTC P1095 TUMBLE GENERATED VALVE SIG-
- NAL 1 CIRCUIT MALFUNCTION (SHORT) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



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Step	Check	Yes	No St	Lel.
<ol> <li>CHECK HARNESS BETWEEN ECM AND TUMBLE GENERATOR VALVE ACTUATOR CONNECTOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from tumble gen- erator valve connector.</li> <li>3)Measure the voltage between tumble gener- ator valve actuator and chassis ground.</li> <li>Connector &amp; terminal (E55) No. 1 (+) — Chassis ground (-): (E55) No. 2 (+) — Chassis ground (-):</li> </ol>		Replace the tum- ble generator valve assembly. <ref. fu(sti)-<br="" to="">34, Tumble Gener- ator Valve Assem- bly.&gt;</ref.>	Repair the battery short circuit between ECM and tumble generator valve actuator.	101

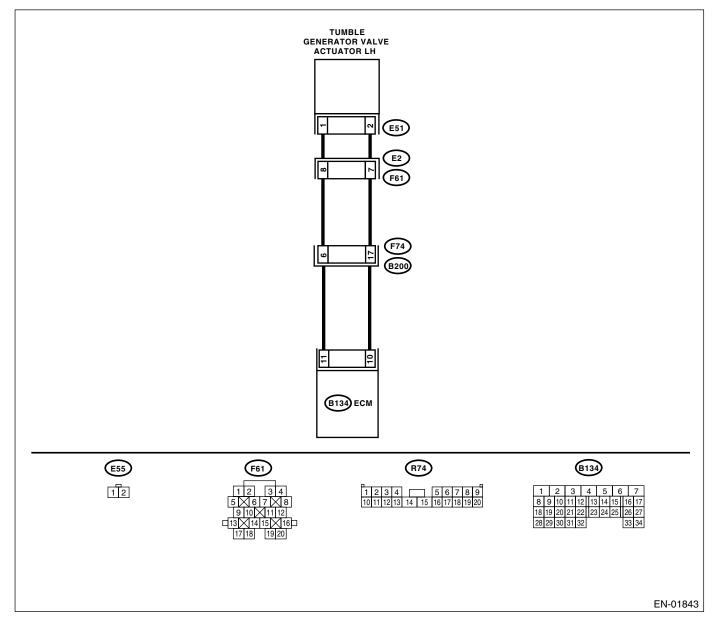
### CN:DTC P1096 — TUMBLE GENERATED VALVE SIGNAL 2 CIRCUIT MALFUNC-TION (OPEN) —

#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-210, DTC P1096 TUMBLE GENERATED VALVE SIG-
- NAL 2 CIRCUIT MALFUNCTION (OPEN) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



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	Step	Check	Yes	Pro No Sti	Id.
1	CHECK HARNESS BETWEEN ECM AND TUMBLE GENERATOR VALVE ACTUATOR CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from tumble gen- erator valve and ECM connector. 3)Measure the resistance between tumble generator valve actuator and ECM connector. Connector & terminal (E51) No. 1 — (B134) No. 11: (E51) No. 2 — (B134) No. 10:	Is the resistance less than 1 $\Omega$ ?	Go to step 2.	Repair the open circuit between ECM and tumble generator valve connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and tumble generator valve actuator connec- tor. • Poor contact in coupling connec- tor.	'dio
2	CHECK POOR CONTACT. Check poor contact in tumble generator valve actuator connector.	Is there poor contact in tumble generator valve actuator con- nector?	Repair the poor contact in tumble generator valve actuator connec- tor.	Replace the tum- ble generator valve assembly. <ref. fu(sti)-<br="" to="">34, Tumble Gener- ator Valve Assem- bly.&gt;</ref.>	

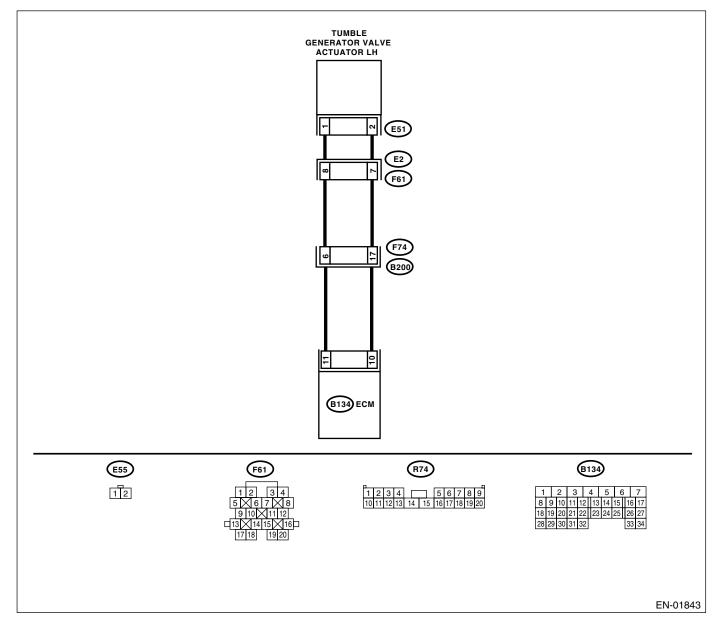
### CO:DTC P1097 — TUMBLE GENERATED VALVE SIGNAL 2 CIRCUIT MAL-FUNCTION (SHORT) —

#### • DTC DETECTING CONDITIÓN:

- · Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-212, DTC P1097 TUMBLE GENERATED VALVE SIG-
- NAL 2 CIRCUIT MALFUNCTION (SHORT) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



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Step	Check	Yes	No St	I.d.
<ol> <li>CHECK HARNESS BETWEEN ECM AND TUMBLE GENERATOR VALVE ACTUATOR CONNECTOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from tumble gen- erator valve connector.</li> <li>3)Measure the voltage between tumble gener- ator valve actuator and chassis ground.</li> <li>Connector &amp; terminal (E51) No. 1 (+) — Chassis ground (-): (E51) No. 2 (+) — Chassis ground (-):</li> </ol>				-GI

### CP:DTC P1110 — ATMOSPHERIC PRESSURE SENSOR CIRCUIT MALFUNC-TION (LOW INPUT) —

#### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(STi)-214, DTC P1110 ATMOSPHERIC PRESSURE SEN-SOR CIRCUIT MALFUNCTION (LOW INPUT) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

Step	Check	Yes	No
1 CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Moni- tor or OBD-II general scan tool indicate DTC P1110?	•	

#### CQ:DTC P1111 — ATMOSPHERIC PRESSURE SENSOR CIRCUIT MALFUNC-TION (HIGH INPUT) —

- DTC DETECTING CONDITION:
  - Immediately at fault recognition
  - GENERAL DESCRIPTION <Ref. to GD(STi)-215, DTC P1111 ATMOSPHERIC PRESSURE SEN-SOR CIRCUIT MALFUNCTION (HIGH INPUT) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.			contact.

ENGINE (DIÀGNOSTICS)

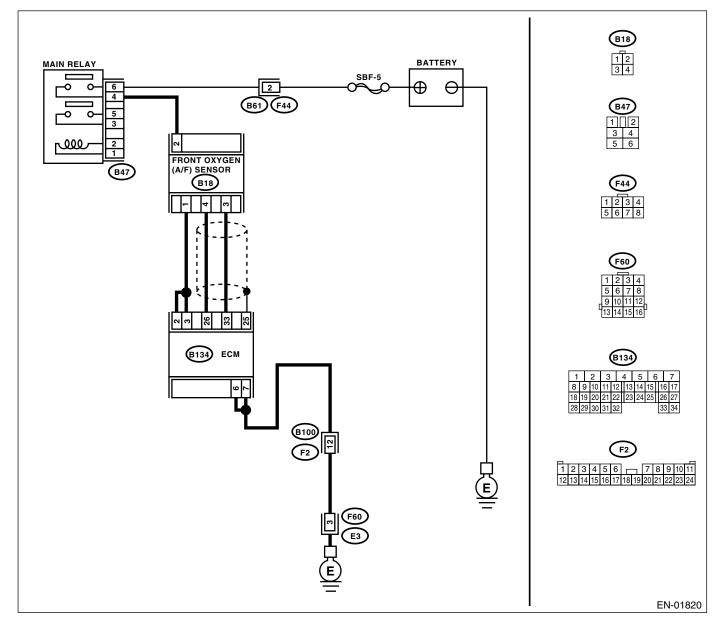
# CR: DTC P1152 — O<sub>2</sub> SENSOR CIRCUIT RANGE/PERFORMANCE (LOW)

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION < Ref. to GD(STi)-216, DTC P1152 O<sub>2</sub> SENSOR CIRCUIT RANGE/PER-
- FORMANCE (LOW) (BANK1 SENSOR1) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



#### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) No- You h

ENGINE (DIAGNOSTICS)

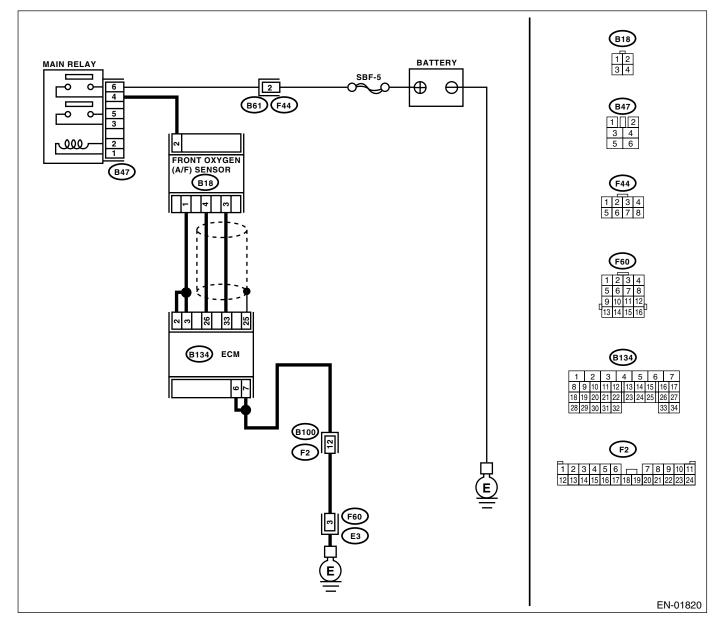
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	Step	Check	Yes	PEONO Studi	
1	CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC- TOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connectors from ECM and front oxygen (A/F) sensor connector. 3)Measure the resistance of harness between ECM and front oxygen (A/F) sensor connector. <i>Connector &amp; terminal</i> (B134) No. 33 — (B18) No. 3: (B134) No. 26 — (B18) No. 4:		Go to step <b>2</b> .	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between ECM and front oxygen (A/F) sen- sor connector • Poor contact in front oxygen (A/F) sensor connector • Poor contact in ECM connector	15
2	CHECK POOR CONTACT. Check poor contact in front oxygen (A/F) sen- sor connector.	Is there poor contact in front oxygen (A/F) sensor connec- tor?	Repair the poor contact in front oxygen (A/F) sen- sor connector.	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(STi)-37, Front Oxygen (A/F) Sen- sor.&gt;</ref.>	

### CS: DTC P1153 — O<sub>2</sub> SENSOR CIRCUIT RANGE/PERFORMANCE (HIGH) (BANK1 SENSOR1) —

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault
  - GENERAL DESCRIPTION < Ref. to GD(STi)-219, DTC P1153 O2 SENSOR CIRCUIT RANGE/PER-
  - FORMANCE (HIGH) (BANK1 SENSOR1) —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



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ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	PE No Sti	Id:
1	CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC- TOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Measure the resistance of harness between ECM connector and chassis ground. Connector & terminal (B134) No. 26 — Chassis ground:	Is the resistance more than 1 MΩ?	Repair the ground short circuit in har- ness between ECM and front oxygen (A/F) sen- sor connector.	Go to step 2.	Idios
2	CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC- TOR. Measure the resistance of harness between ECM connector and chassis ground. Connector & terminal (B134) No. 33 — Chassis ground:	Is the resistance more than 1 MΩ?	Repair the ground short circuit in har- ness between ECM and front oxygen (A/F) sen- sor connector.	Go to step <b>3</b> .	
3	CHECK OUTPUT SIGNAL FOR ECM. 1)Connect the connector to ECM. 2)Turn the ignition switch to ON. 3)Measure the voltage between ECM connec- tor and chassis ground. Connector & terminal (B134) No. 26 (+) — Chassis ground (–):	Is the voltage more than 4.5 V?	Go to step 4.	Go to step <b>5</b> .	
4	CHECK OUTPUT SIGNAL FOR ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 26 (+) — Chassis ground (–):	Is the voltage more than 10 V?	Repair the battery short circuit in har- ness between ECM and front oxygen (A/F) sen- sor connector. After repair, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	Repair the poor contact in ECM connector.	
5	CHECK OUTPUT SIGNAL FOR ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 33 (+) — Chassis ground (–):	Is the voltage more than 4.95 V?	Go to step 6.	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(STi)-37, Front Oxygen (A/F) Sen- sor.&gt;</ref.>	
6	CHECK OUTPUT SIGNAL FOR ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 33 (+) — Chassis ground (–):	Is the voltage more than 10 V?	Repair the battery short circuit in har- ness between ECM and front oxygen (A/F) sen- sor connector. After repair, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	Repair the poor contact in ECM connector.	

#### CT:DTC P1160 — RETURN SPRING FAILURE —

NOTE:

For the diagnostic procedure, refer to DTC P2101. <Ref. to EN(STi)-325, DTC P2101 — THROTTLE ACTU-ATOR CONTROL MOTOR CIRCUIT RANGE/PERFORMANCE —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

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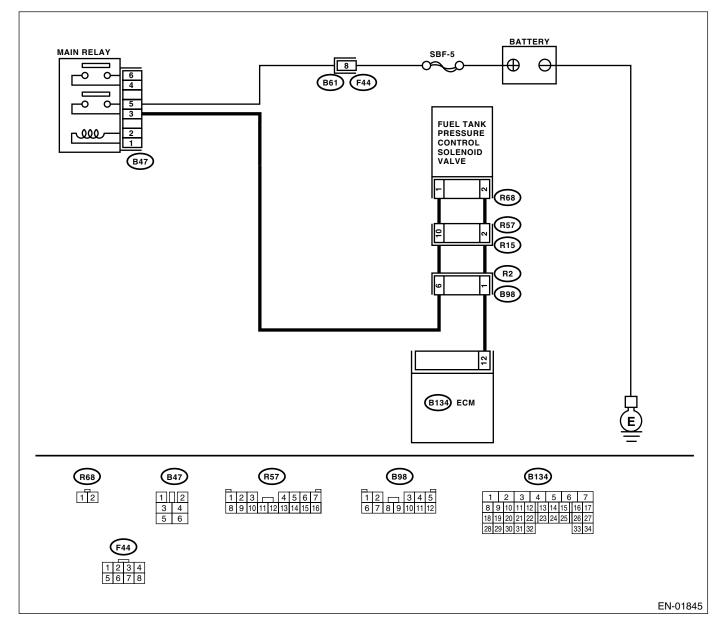
ENGINE (DIÀGNOSTICS)

#### CU:DTC P1400 — FUEL TANK PRESSURE CONTROL SOLENOID VALVE CIR-AL E

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault
  - GENERAL DESCRIPTION < Ref. to GD(STi)-224, DTC P1400 FUEL TANK PRESSURE CONTROL</li>
  - SOLENOID VALVE CIRCUIT LOW -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



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ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	PEO Nos Still	Id:
1	CHECK OUTPUT SIGNAL FROM ECM. 1)Turn ignition switch to ON. 2)Measure the voltage between ECM and chassis ground. Connector & terminal (B134) No. 12 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step <b>2</b> .	Go to step 3.	410S
2	CHECK FOR POOR CONTACT. Check for poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Contact with SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	
3	CHECK HARNESS BETWEEN FUEL TANK PRESSURE CONTROL SOLENOID VALVE AND ECM CONNECTOR. 1)Turn ignition switch to OFF. 2)Disconnect the connectors from fuel tank pressure control solenoid valve and ECM. 3)Measure the resistance of harness between fuel tank pressure control solenoid valve con- nector and chassis ground. Connector & terminal (R68) No. 2 — Chassis ground:	Is the resistance more than 1 $M\Omega$ ?	Go to step 4.	Repair short circuit to ground in har- ness between ECM and fuel tank pressure control solenoid valve connector.	
4	CHECK HARNESS BETWEEN FUEL TANK PRESSURE CONTROL SOLENOID VALVE AND ECM CONNECTOR. Measure the resistance of harness between ECM and fuel tank pressure control solenoid valve connector. Connector & terminal (B134) No. 12 — (R68) No. 2:	Is the resistance less than 1 Ω?	Go to step <b>5</b> .	Repair harness and connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and fuel tank pressure control solenoid valve connector • Poor contact in coupling connector	
5	CHECK FUEL TANK PRESSURE CONTROL SOLENOID VALVE. Measure the resistance between fuel tank pressure control solenoid valve terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance $10 - 100 \Omega$ ?	Go to step <b>6</b> .	Replace the fuel tank pressure con- trol solenoid valve. <ref. ec(sti)-<br="" to="">6, Purge Control Solenoid Valve.&gt;</ref.>	

## Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

			VI FOR	"Y Frie	1
	Step	Check	Yes	PE No Sti	Id:
6	CHECK POWER SUPPLY TO FUEL TANK PRESSURE CONTROL SOLENOID VALVE. 1)Turn ignition switch to ON. 2)Measure the voltage between fuel tank pres- sure control solenoid valve and chassis ground. Connector & terminal (R68) No. 1 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 7.	Repair harness and connector. NOTE: In this case, repair the following: • Open circuit in harness between main relay and fuel	<sup>Id</sup> ios
				tank pressure con- trol solenoid valve connector • Poor contact in coupling connector • Poor contact in main relay con- nector	
7	CHECK FOR POOR CONTACT. Check for poor contact in fuel tank pressure control solenoid valve connector.	Is there poor contact in fuel tank pressure control solenoid valve connector?	Repair poor con- tact in fuel tank pressure control solenoid valve connector.	Contact with SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	

### DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

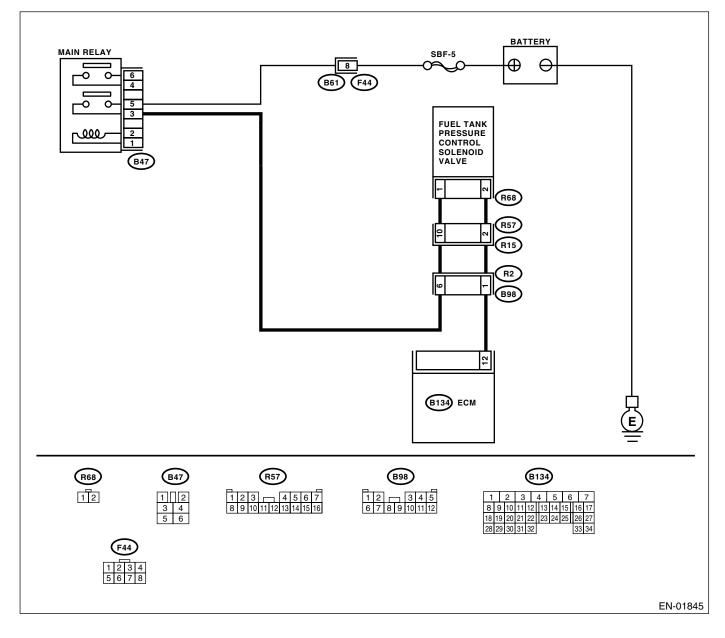
### CV:DTC P1420 — FUEL TANK PRESSURE CONTROL SOL. VALVE CIRCUIT HIGH —

### • DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION < Ref. to GD(STi)-226, DTC P1420 FUEL TANK PRESSURE CONTROL SOL. VALVE CIRCUIT HIGH —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



## Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

		For	Y Eris	
Step	Check	Yes	REO NO Studi	
<ol> <li>CHECK INPUT SIGNAL FOR ECM.         <ol> <li>Turn ignition switch to OFF.</li> <li>Connect the test mode connector at the lower portion of instrument panel (on the driver's side).</li> <li>Turn ignition switch to ON.</li> <li>While operating the fuel tank pressure control solenoid valve, measure voltage between ECM and chassis ground.</li> <li>NOTE:                  <ul></ul></li></ol></li></ol>	:	Go to step 2.	The malfunction indicator light may light up, however, the circuit is returned to the normal status at the moment. In this case, repair poor contact in ECM connector.	S
(B134) No. 12 (+) — Chassis ground (-): 2 CHECK INPUT SIGNAL FOR ECM. 1)Turn ignition switch to ON. 2)Measure the voltage between ECM and chassis ground. Connector & terminal (B134) No. 12 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 4.	Go to step 3.	
3 CHECK FOR POOR CONTACT. Check for poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	
<ul> <li>CHECK HARNESS BETWEEN FUEL TANK PRESSURE CONTROL SOLENOID VALVE AND ECM CONNECTOR.         <ol> <li>Turn ignition switch to OFF.</li> <li>Disconnect the connector from fuel tank pressure control solenoid valve.</li> <li>Turn ignition switch to ON.</li> <li>Measure the voltage between ECM and chassis ground.</li> </ol> </li> <li>Connector &amp; terminal (B134) No. 12 (+) — Chassis ground (-):</li> </ul>	Is the voltage more than 10 V?	Repair short circuit to battery in har- ness between ECM and fuel tank pressure control solenoid valve connector. After repair, replace the ECM. <ref. to<br="">FU(STi)-41, Engine Control Module (ECM).&gt;</ref.>		
<ul> <li>5 CHECK FUEL TANK PRESSURE CONTROL SOLENOID VALVE.         <ol> <li>Turn ignition switch to OFF.</li> <li>Measure the resistance between fuel tank pressure control solenoid valve terminals.</li> </ol> </li> <li>Terminals         <ol> <li>No. 1 — No. 2:</li> </ol> </li> </ul>	Is the resistance less than 1 Ω?	Replace the fuel tank pressure con- trol solenoid valve <ref. ec(sti)-<br="" to="">12, Pressure Con- trol Solenoid Valve.&gt; and the ECM <ref. to<br="">FU(STi)-41, Engine Control Module (ECM).&gt;.</ref.></ref.>	Go to step 6.	
6 CHECK FOR POOR CONTACT. Check for poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	

### Bre **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** ENGINE (DIAGNOSTICS)

# CW:DTC P1443 — VENT CONTROL SOLENOID VALVE FUNCTION PROBLEM

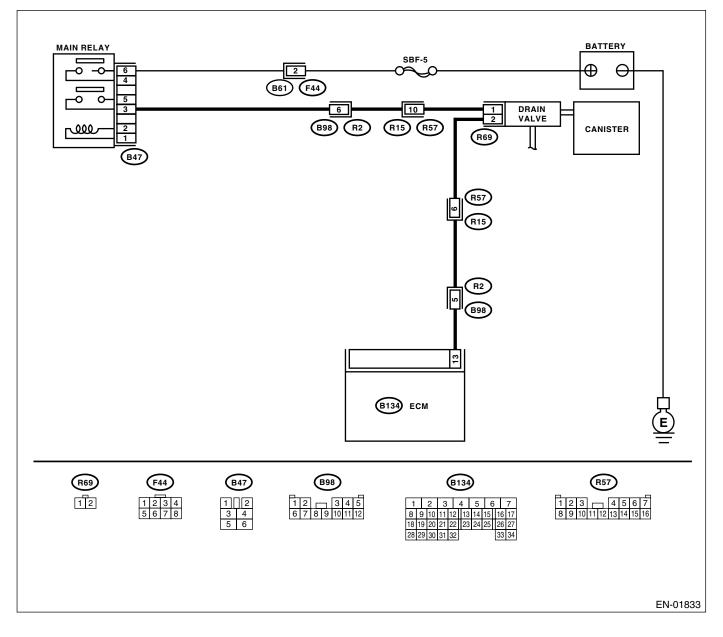
- DTC DETECTING CONDITION:
  - Immediately at fault recognition
  - GENERAL DESCRIPTION <Ref. to GD(STi)-228, DTC P1443 VENT CONTROL SOLENOID</li> VALVE FUNCTION PROBLEM —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

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- TROUBLE SYMPTOM:
  - Improper fuel supply

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



## Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

			VI For	y Fini-	•
	Step	Check	Yes	No Sti	Id.
1	CHECK FOR OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(STi)-66, List of Diagnostic Trou- ble Code (DTC).&gt;</ref.>	Go to step 2.	Idios
2	CHECK VENT LINE HOSES. Check the following items. •Clogging of vent hoses between canister and drain valve •Clogging of vent hose between drain valve and air filter •Clogging of drain filter	Is there a fault in vent line?	Repair or replace faulty parts.	Go to step 3.	
3	CHECK DRAIN VALVE OPERATION. 1)Turn ignition switch to OFF. 2)Connect the test mode connector at the lower portion of instrument panel (on the driver's side). 3)Turn ignition switch to ON. 4)Operate the drain valve. NOTE: Drain valve operation can also be executed us- ing Subaru Select Monitor. For the procedure, refer to "Compulsory Valve Operation Check Mode". <ref. compulsory="" en(sti)-43,="" to="" valve<br="">Operation Check Mode.&gt;</ref.>		Contact with SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	Replace the drain valve. <ref. to<br="">EC(STi)-18, Drain Valve.&gt;</ref.>	

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** ENGINE (DIAGNOSTICS)

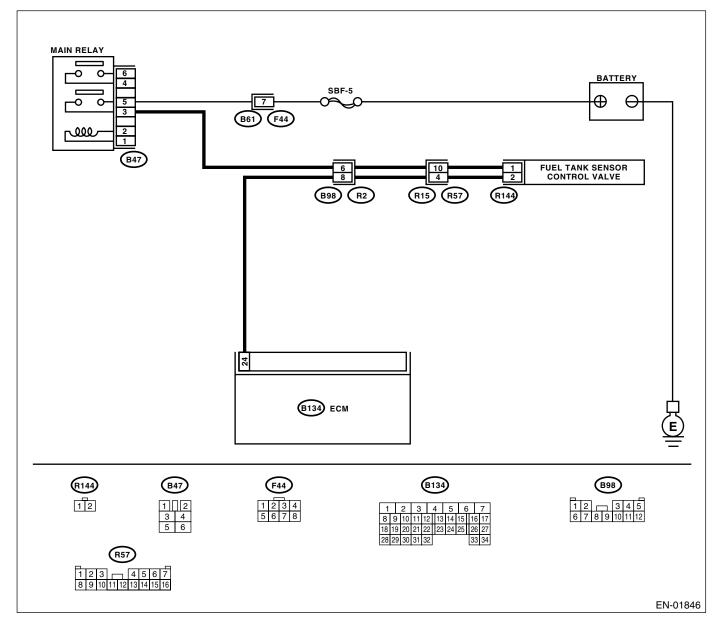
### Studios CX:DTC P1446 — FUEL TANK SENSOR CONTROL VALVE CIRCUIT LOW -

### DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION <Ref. to GD(STi)-229, DTC P1446 FUEL TANK SENSOR CONTROL</li>

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



## Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	RES No Studi
1	CHECK OUTPUT SIGNAL FROM ECM. 1)Turn ignition switch to ON. 2)Measure the voltage between ECM and chassis ground. Connector & terminal (B134) No. 24 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step <b>2</b> .	Go to step 3.
2	CHECK FOR POOR CONTACT. Check for poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	The malfunction indicator light may light up, however, the circuit is returned to the normal status at the moment. (However, the possibility of poor contact still remains.)j NOTE: In this case, repair the following: • Poor contact in fuel tank sensor control valve con- nector • Poor contact in ECM connector • Poor contact in coupling connector
3	CHECK HARNESS BETWEEN FUEL TANK SENSOR CONTROL VALVE AND ECM CON- NECTOR. 1)Turn ignition switch to OFF. 2)Disconnect the connectors from fuel tank sensor control valve and ECM. 3)Measure the resistance of harness between fuel tank sensor control valve connector and chassis ground. Connector & terminal (R144) No. 2 — Chassis ground:	Is the resistance more than 1 MΩ?	Go to step 4.	Repair short circuit to ground in har- ness between ECM and fuel tank sensor control valve connector.
4	CHECK HARNESS BETWEEN FUEL TANK SENSOR CONTROL VALVE AND ECM CON- NECTOR. Measure the resistance of harness between ECM and fuel tank sensor control valve con- nector. Connector & terminal (B134) No. 24 — (R144) No. 2:	Is the resistance less than 1 Ω?	Go to step <b>5</b> .	Repair harness and connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and fuel tank sensor control valve connector • Poor contact in coupling connector
5	CHECK FUEL TANK SENSOR CONTROL VALVE. Measure the resistance between fuel tank sen- sor control valve terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i>		Go to step <b>6</b> .	Replace the fuel tank sensor con- trol valve. <ref. to<br="">EC(STi)-18, Drain Valve.&gt;</ref.>

## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) No- You h

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	Step	Check	Yes	REONO Stu	d:
6	CHECK POWER SUPPLY TO FUEL TANK SENSOR CONTROL VALVE.	Is the voltage more than 10 V?	Go to step 7.	Repair harness and connector.	ulos
	1)Turn ignition switch to ON. 2)Measure the voltage between fuel tank sen- sor control valve and chassis ground. <i>Connector &amp; terminal</i> <i>(R144) No. 1 (+) — Chassis ground (–):</i>			NOTE: In this case, repair the following: • Open circuit in harness between main relay and fuel tank sensor con- trol valve • Poor contact in coupling connector • Poor contact in main relay con- nector	
7	CHECK FOR POOR CONTACT. Check for poor contact in fuel tank sensor con- trol valve connector.	Is there poor contact in fuel tank sensor control valve con- nector?	Repair poor con- tact in fuel tank sensor control valve connector.	Contact with SOA Service Center. NOTE: Inspection by DTM is required, be- cause probable cause is deteriora- tion of multiple parts.	

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

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ENGINE (DIÀGNOSTICS)

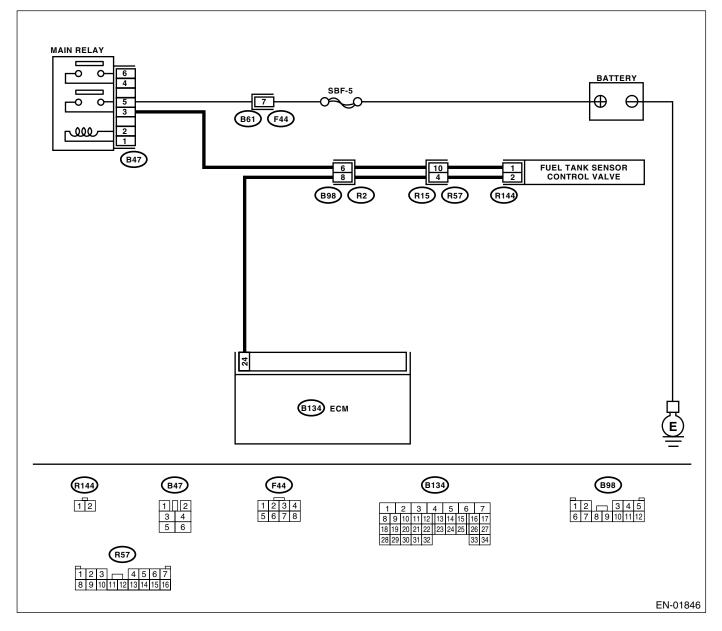
### Studios CY:DTC P1447 — FUEL TANK SENSOR CONTROL VALVE CIRCUIT HIGH -

### DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION <Ref. to GD(STi)-231, DTC P1447 FUEL TANK SENSOR CONTROL</li>

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL

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	Step	Check	Yes	No St	Id:
1	CHECK OUTPUT SIGNAL FROM ECM. 1)Turn ignition switch to ON. 2)Measure the voltage between ECM and chassis ground. Connector & terminal (B134) No. 24 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step <b>3</b> .	Go to step 2.	Idios
2	CHECK FOR POOR CONTACT. Check for poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	
3	CHECK HARNESS BETWEEN FUEL TANK SENSOR CONTROL VALVE AND ECM CON- NECTOR. 1)Turn ignition switch to OFF. 2)Disconnect the connector from fuel tank sen- sor control valve. 3)Turn ignition switch to ON. 4)Measure the voltage between ECM and chassis ground. Connector & terminal (B134) No. 24 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Repair short circuit to battery in har- ness between ECM and fuel tank sensor control valve connector. After repair, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	Go to step 4.	
4	<ul> <li>CHECK FUEL TANK SENSOR CONTROL VALVE.</li> <li>1)Turn ignition switch to OFF.</li> <li>2)Measure the resistance between fuel tank sensor control valve terminals.</li> <li><i>Terminals</i></li> <li><i>No. 1 — No. 2:</i></li> </ul>	Is the resistance less than 1 $\Omega$ ?	Replace the fuel tank sensor con- trol valve <ref. to<br="">EC(STi)-11, Fuel Tank Sensor Con- trol Valve.&gt; and the ECM <ref. to<br="">FU(STi)-41, Engine Control Module (ECM).&gt;.</ref.></ref.>	Go to step <b>5</b> .	
5	CHECK FOR POOR CONTACT. Check for poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	

### Bro DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

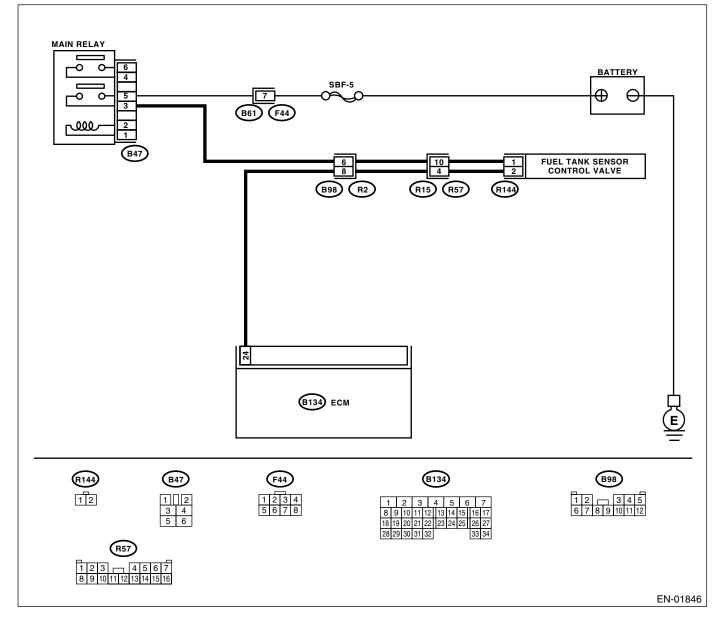
ENGINE (DIÀGNOSTICS)

## CZ:DTC P1448 — FUEL TANK SENSOR CONTROL VALVE RANGE/PERFOR-E

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault
  - GENERAL DESCRIPTION <Ref. to GD(STi)-233, DTC P1448 FUEL TANK SENSOR CONTROL</li>
  - VALVE RANGE PERFORMANCE -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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	Step	Check	Yes	Pro No Sti	10
1	CHECK FOR OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using the "List of Diag- nostic Trouble Codes (DTC)". <ref. en(sti)-<br="" to="">66, List of Diag- nostic Trouble Code (DTC).&gt;</ref.>	Go to step 2.	10
2	CHECK FUEL FILLER CAP. 1)Turn ignition switch to OFF. 2)Open the fuel flap.	Is the fuel filler cap tightened securely?	Go to step <b>3.</b>	Tighten fuel filler cap securely.	
3	<ul> <li>CHECK EVAPORATIVE EMISSION LINE.</li> <li>NOTE:</li> <li>Check the following items.</li> <li>Disconnection, leakage and clogging of hoses between fuel tank pressure sensor and fuel tank.</li> <li>Disconnection, leakage and clogging of hoses and pipes between fuel filler pipe and fuel tank.</li> </ul>		Repair the hoses and pipes.	Replace the fuel tank pressure sen- sor.	

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

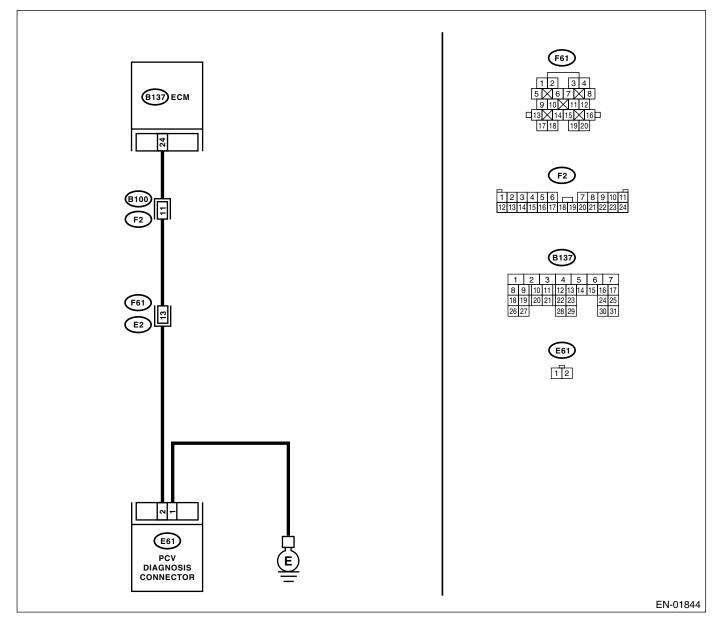
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# DA:DTC P1491 — POSITIVE CRANKCASE VENTILATION (BLOW-BY) FUNC-

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault
  - GENERAL DESCRIPTION < Ref. to GD(STi)-236, DTC P1491 POSITIVE CRANKCASE VENTILA-</li>
  - TION (BLOW-BY) FUNCTION PROBLEM -, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) No- You h

-			For	Y Friend	1
	Step	Check	Yes	Pro No Sti	Id.
1	CHECK BLOW-BY HOSE. Check the blow-by hose.	Is there disconnection or crack in blow-by hose?	Replace or repair blow-by hose.	Go to step 2.	'UI(
2	<ul> <li>INSPECT HARNESS BETWEEN PCV DIAG- NOSIS CONNECTOR AND ECM CONNEC- TOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from PCV diagno- sis connector and ECM.</li> <li>3)Measure the resistance of harness between PCV diagnosis connector and ECM connector.</li> <li>Connector &amp; terminal (B137) No. 24 — (E61) No. 2:</li> </ul>	Is the resistance less than 1 Ω?	Go to step 3.	Repair open circuit in harness between PCV diagnosis connec- tor and ECM.	
3	INSPECT HARNESS BETWEEN PCV DIAG- NOSIS CONNECTOR AND ECM CONNEC- TOR. Measure the resistance of harness between PCV diagnosis connector and chassis ground. <i>Connector &amp; terminal</i> (B137) No. 24 — Chassis ground:	Is the resistance more than 1 $M\Omega$ ?	Go to step 4.	Repair short circuit to chassis ground in harness between PCV diagnosis connec- tor and ECM.	
4	INSPECT PCV DIAGNOSIS CONNECTOR GROUND CIRCUIT. Measure the resistance between PCV diagno- sis connector and engine ground. Connector & terminal (B61) No. 1 — Engine ground:	Is the resistance less than 5 $\Omega$ ?	Go to step 5.	Repair PCV diag- nosis connector ground circuit.	
5	INSPECT PCV DIAGNOSIS CONNECTOR. Measure the resistance between PCV diagno- sis connector and terminal. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance less than 1 $\Omega$ ?	Repair poor con- tact in ECM and PCV diagnosis connector.	Replace PCV diagnosis connec- tor.	

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** No

ENGINE (DIÀGNOSTICS) Eris Studios

### DB:DTC P1518 — STARTER SWITCH CIRCUIT LOW INPUT

### DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- OR RESALE • GENERAL DESCRIPTION < Ref. to GD(STi)-238, DTC P1518 — STARTER SWITCH CIRCUIT LOW INPUT —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Failure of engine to start

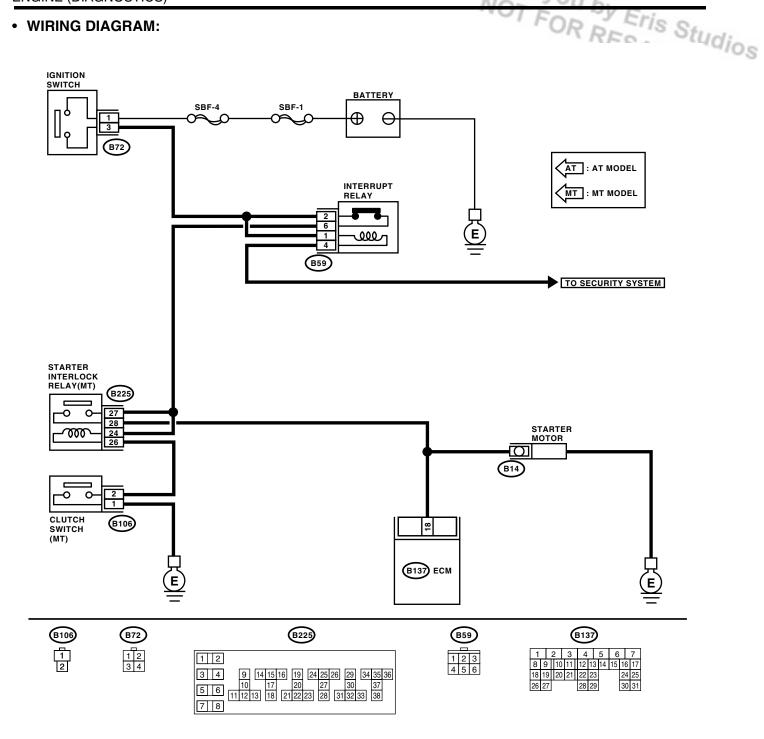
### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) Ar.

ENGINE (DIAGNOSTICS)

### • WIRING DIAGRAM:



EN-01815

## Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

	Equipart Francisco Petrin			J. Print	
	Step	Check	Yes	No Sti	I.d.
1	CHECK OPERATION OF STARTER MOTOR.	Does the starter motor oper- ate when ignition switch is turned to START?	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open or ground short circuit in har- ness between ECM and starter motor connector • Poor contact in ECM connector	CUIT, Diagnostics for Engine Start-	1910

### DC:DTC P1560 — BACK-UP VOLTAGE CIRCUIT MALFUNCTION

### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-239, DTC P1560 BACK-UP VOLTAGE CIRCUIT MAL-FUNCTION -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

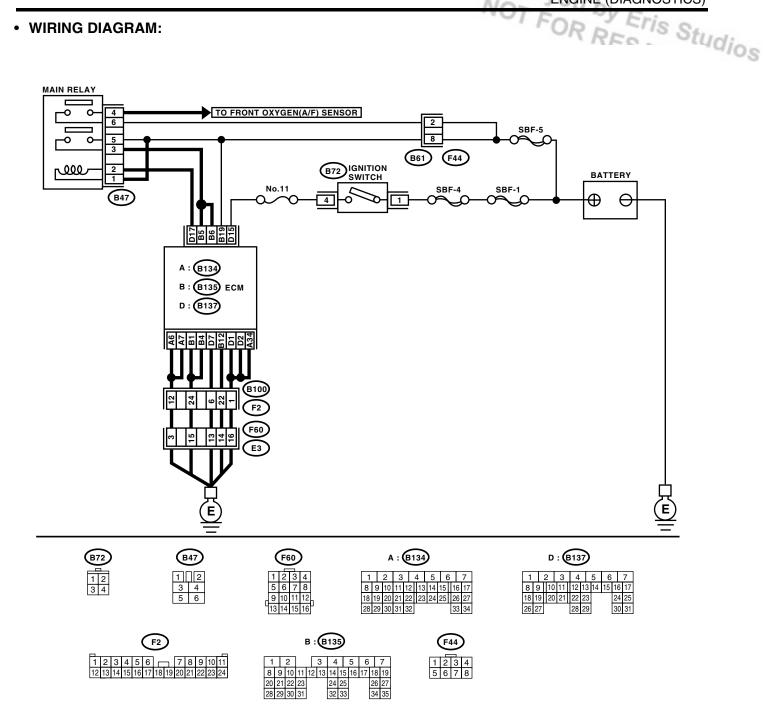
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### **CAUTION:**

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.

Bro DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

WIRING DIAGRAM: •



EN-01816

REG

## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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	Step	Check	Yes	PE No Sti	Id.
1	CHECK INPUT SIGNAL FOR ECM. 1)Turn the ignition switch to OFF. 2)Measure the voltage between ECM and chassis ground. Connector & terminal (B135) No. 19 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Repair the poor contact in ECM connector.	Go to step 2.	Idios
2	CHECK HARNESS BETWEEN ECM AND MAIN FUSE BOX CONNECTOR. 1)Disconnect the connector from ECM. 2)Measure the resistance of harness between ECM and chassis ground. <i>Connector &amp; terminal</i> (B135) No. 19 — Chassis ground:	Is the resistance less than 10 $\Omega$ ?	Repair the ground short circuit in har- ness between ECM connector and battery termi- nal.	Go to step <b>3</b> .	
3	CHECK FUSE SBF-5.	Is the fuse blown?	Replace the fuse.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between ECM and battery • Poor contact in ECM connector • Poor contact in battery terminal	

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

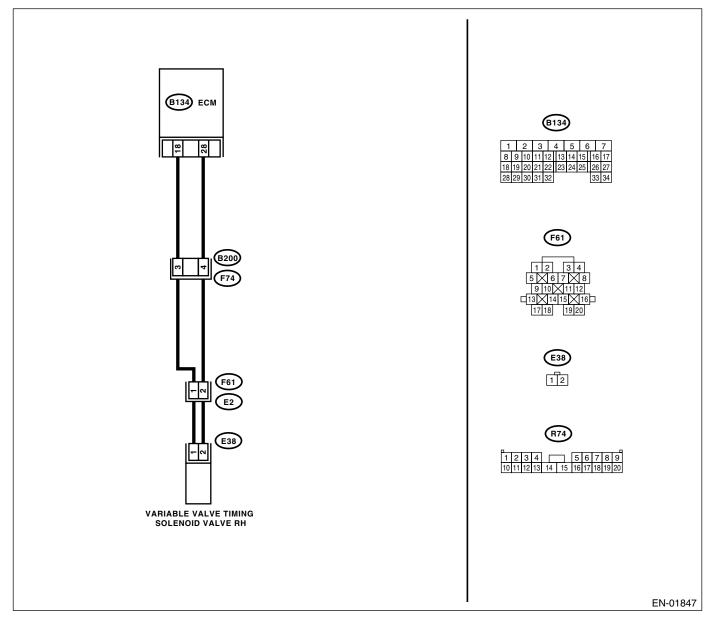
11-

# DD:DTC P2088 — OCV SOLENOID VALVE SIGNAL A CIRCUIT OPEN (BANK 1)

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault
  - GENERAL DESCRIPTION < Ref. to GD(STi)-240, DTC P2088 OCV SOLENOID VALVE SIGNAL A</li>
  - CIRCUIT OPEN (BANK 1) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) No- You h

<u> </u>	Step	Check	Yes	Nos Stud	1
1	CHECK HARNESS BETWEEN ECM AND VARIABLE VALVE TIMING SOLENOID VALVE. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM and variable valve timing solenoid valve. 3)Measure the resistance between ECM and variable valve timing solenoid valve. Connector & terminal (B134) No. 18 — (E38) No. 1: (B134) No. 28 — (E38) No. 2:	Is the resistance less than 1 $\Omega$ ?	Go to step 2.	Repair the open circuit in harness between ECM and variable valve tim- ing solenoid valve connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and variable valve timing sole- noid valve connec- tor • Poor contact in coupling connec- tor.	ios
2	CHECK HARNESS BETWEEN ECM AND VARIABLE VALVE TIMING SOLENOID VALVE. Measure the resistance between ECM and variable valve timing solenoid valve. <i>Connector &amp; terminal</i> (E38) No. 1 — Engine ground: (E38) No. 2 — Engine ground:	Is the resistance more than 1 $M\Omega$ ?	Go to step 3.	Repair the short circuit between ECM and variable valve timing sole- noid valve connec- tor.	
3	CHECK VARIABLE VALVE TIMING SOLE- NOID VALVE. 1)Remove the variable valve timing solenoid valve. 2)Measure the resistance between variable valve timing solenoid valve terminal. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance 6 — 12 Ω?	Repair the poor contact in ECM and variable valve timing solenoid valve.	Replace the vari- able valve timing solenoid valve. <ref. me(sti)-<br="" to="">57, Camshaft.&gt;</ref.>	

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

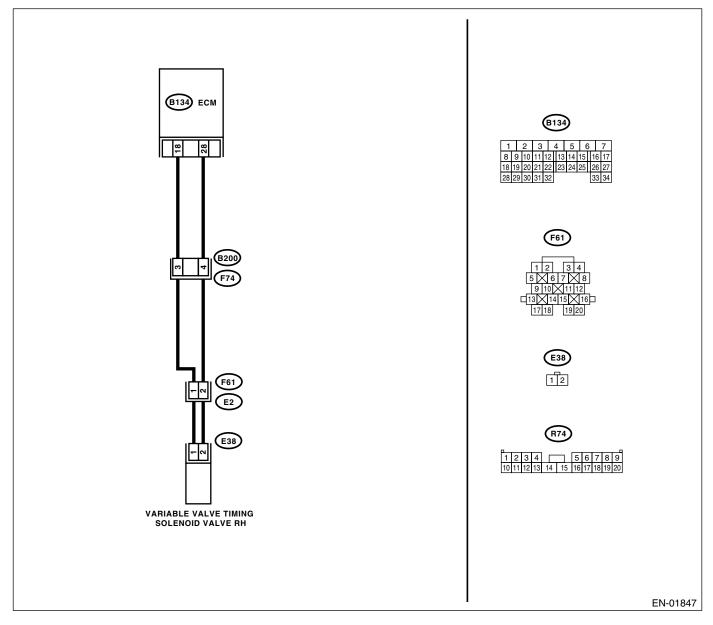
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# DE:DTC P2089 — OCV SOLENOID VALVE SIGNAL A CIRCUIT SHORT (BANK 1)

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault
  - GENERAL DESCRIPTION < Ref. to GD(STi)-242, DTC P2089 OCV SOLENOID VALVE SIGNAL A</li>
  - CIRCUIT SHORT (BANK 1) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) No- You h

	Step	Check	Yes	Do No Star
1	CHECK HARNESS BETWEEN ECM AND VARIABLE VALVE TIMING SOLENOID VALVE. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM and variable valve timing solenoid valve. 3)Measure the resistance between ECM and variable valve timing solenoid valve. Connector & terminal (B134) No. 18 — (E38) No. 1: (B134) No. 28 — (E38) No. 2:	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit in harness between ECM and variable valve tim- ing solenoid valve connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and variable valve timing sole- noid valve connec- tor • Poor contact in coupling connec- tor.
2	CHECK HARNESS BETWEEN ECM AND VARIABLE VALVE TIMING SOLENOID VALVE. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM and variable valve timing solenoid valve. 3)Measure the resistance between ECM and variable valve timing solenoid valve. Connector & terminal (E38) No. 1 — Engine ground: (E38) No. 2 — Engine ground:	Is the resistance more than 1 $M\Omega$ ?	Go to step 3.	Repair the short circuit between ECM and variable valve timing sole- noid valve connec- tor.
3	<ul> <li>CHECK VARIABLE VALVE TIMING SOLE- NOID VALVE.</li> <li>1)Remove the variable valve timing solenoid valve.</li> <li>2)Measure the resistance between variable valve timing solenoid valve terminal.</li> <li><i>Terminals</i> No. 1 — No. 2:</li> </ul>	Is the resistance 6 — 12 $\Omega$ ?	Repair the poor contact in ECM and variable valve timing solenoid valve.	Replace the vari- able valve timing solenoid valve. <ref. me(sti)-<br="" to="">57, Camshaft.&gt;</ref.>

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

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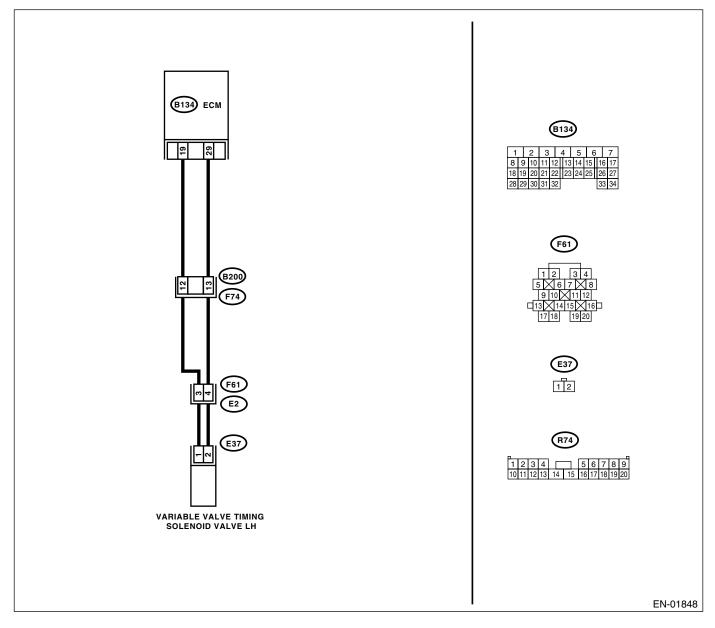
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# DF:DTC P2092 — OCV SOLENOID VALVE SIGNAL A CIRCUIT OPEN (BANK 2)

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault
  - GENERAL DESCRIPTION < Ref. to GD(STi)-244, DTC P2092 OCV SOLENOID VALVE SIGNAL A</li> CIRCUIT OPEN (BANK 2) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) No- You h

<u> </u>	Step	Check	Yes	Nos Stud	
1	CHECK HARNESS BETWEEN ECM AND VARIABLE VALVE TIMING SOLENOID VALVE. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM and variable valve timing solenoid valve. 3)Measure the resistance between ECM and variable valve timing solenoid valve. Connector & terminal (B134) No. 19 — (E37) No. 1: (B134) No. 29 — (E37) No. 2:	Is the resistance less than 1 $\Omega$ ?	Go to step 2.	Repair the open circuit in harness between ECM and variable valve tim- ing solenoid valve connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and variable valve timing sole- noid valve connec- tor • Poor contact in coupling connec- tor.	ios
2	CHECK HARNESS BETWEEN ECM AND VARIABLE VALVE TIMING SOLENOID VALVE. Measure the resistance between ECM and variable valve timing solenoid valve. <i>Connector &amp; terminal</i> (E37) No. 1 — Engine ground: (E37) No. 2 — Engine ground:	Is the resistance more than 1 MΩ?	Go to step <b>3</b> .	Repair the short circuit between ECM and variable valve timing sole- noid valve connec- tor.	
3	CHECK VARIABLE VALVE TIMING SOLE- NOID VALVE. 1)Remove the variable valve timing solenoid valve. 2)Measure the resistance between variable valve timing solenoid valve terminal. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance 6 — 12 $\Omega$ ?	Repair the poor contact in ECM and variable valve timing solenoid valve.	Replace the vari- able valve timing solenoid valve. <ref. me(sti)-<br="" to="">57, Camshaft.&gt;</ref.>	

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

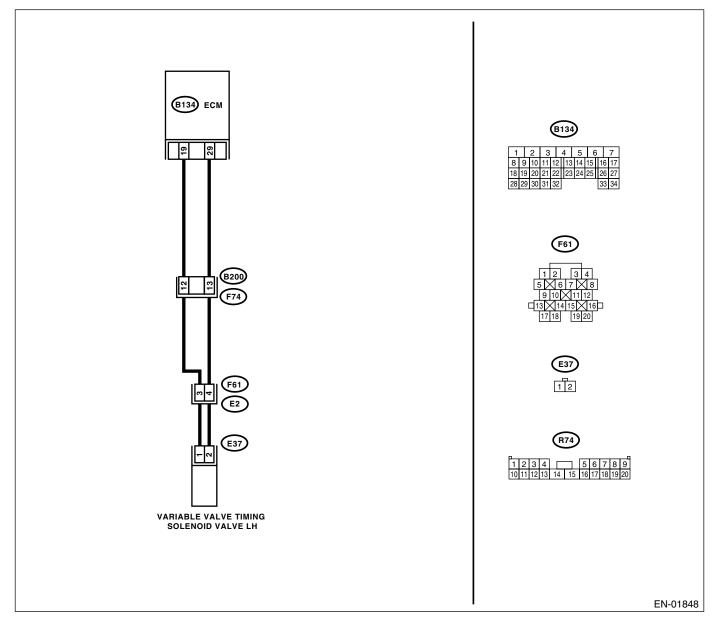
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# DG:DTC P2093 — OCV SOLENOID VALVE SIGNAL A CIRCUIT SHORT (BANK 2)

- DTC DETECTING CONDITION:
  - Two consecutive driving cycles with fault
  - GENERAL DESCRIPTION < Ref. to GD(STi)-246, DTC P2093 OCV SOLENOID VALVE SIGNAL A</li> CIRCUIT SHORT (BANK 2) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling

#### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



### DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) No- Youh

	Step	Check	Yes	No Stu	
1	CHECK HARNESS BETWEEN ECM AND VARIABLE VALVE TIMING SOLENOID VALVE. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM and variable valve timing solenoid valve. 3)Measure the resistance between ECM and variable valve timing solenoid valve. Connector & terminal (B134) No. 19 — (E37) No. 1: (B134) No. 29 — (E37) No. 2:	Is the resistance less than 1 $\Omega$ ?	Go to step 2.	Repair the open circuit in harness between ECM and variable valve tim- ing solenoid valve connector. NOTE: In this case, repair the following: • Open circuit in harness between ECM and variable valve timing sole- noid valve connec- tor • Poor contact in coupling connec- tor.	dios
2	CHECK HARNESS BETWEEN ECM AND VARIABLE VALVE TIMING SOLENOID VALVE. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM and variable valve timing solenoid valve. 3)Measure the resistance between ECM and variable valve timing solenoid valve. Connector & terminal (E37) No. 1 — Engine ground: (E37) No. 2 — Engine ground:	Is the resistance more than 1 $M\Omega$ ?	Go to step 3.	Repair the short circuit between ECM and variable valve timing sole- noid valve connec- tor.	
3	<ul> <li>CHECK VARIABLE VALVE TIMING SOLE- NOID VALVE.</li> <li>1)Remove the variable valve timing solenoid valve.</li> <li>2)Measure the resistance between variable valve timing solenoid valve terminal.</li> <li><i>Terminals</i> No. 1 - No. 2:</li> </ul>	Is the resistance 6 — 12 $\Omega$ ?	Repair the poor contact in ECM and variable valve timing solenoid valve.	Replace the vari- able valve timing solenoid valve. <ref. me(sti)-<br="" to="">57, Camshaft.&gt;</ref.>	

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** A + -

ENGINE (DIÀGNOSTICS)

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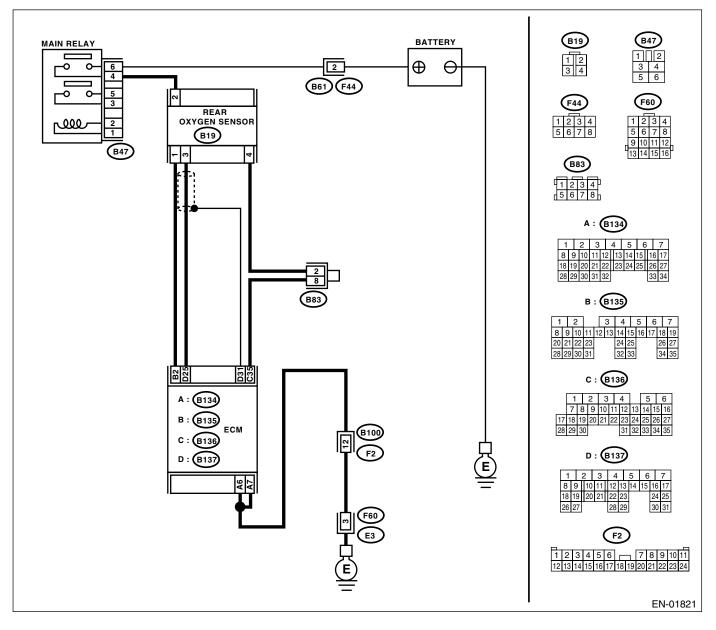
# DH:DTC P2096 — POST CATALYST FUEL TRIM SYSTEM TOO LEAN BANK 1 —

Two consecutive driving cycles with fault

 GENERAL DESCRIPTION <Ref. to GD(STi)-248, DTC P2096 — POST CATALYST FUEL TRIM SYS-</li> TEM TOO LEAN BANK 1 ----, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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	Step	Check	Yes	RE No Sti	Id:
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Using the List of Diagnostic Trou- ble Code (DTC), check the appro- priate DTC. <ref. to EN(STi)-66, List of Diagnostic Trouble Code (DTC).&gt;</ref. 	Go to step 2.	UIOS
2	CHECK REAR OXYGEN SENSOR DATA. 1)Warm-up the engine until engine coolant temperature is above 70°C (158°F), and keep the engine speed at 2,000 rpm to 3,000 rpm for 2 minutes. 2)Read the data of rear oxygen sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DIS- PLAY FOR ENGINE". <ref. en(sti)-28,<br="" to="">Subaru Select Monitor.&gt; •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Does the value fluctuate?	Go to step <b>6</b> .	Go to step 3.	
3	CHECK REAR OXYGEN SENSOR DATA. Read the data of rear oxygen sensor signal using Subaru Select Monitor or OBD-II general scan tool.	Is the voltage 0.2 — 0.4 V?	Go to step <b>4</b> .	Replace the rear oxygen sensor. <ref. fu(sti)-<br="" to="">39, Rear Oxygen Sensor.&gt;</ref.>	
4	<ul> <li>CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connectors from ECM and rear oxygen sensor.</li> <li>3)Measure the resistance of harness between ECM and rear oxygen sensor connector.</li> <li>Connector &amp; terminal (B137) No. 25 — (B19) No. 3:</li> </ul>	Is the resistance more than 3 Ω?	Repair the open circuit in harness between ECM and rear oxygen sen- sor connector.	Go to step 5.	
5	CHECK HARNESS BETWEEN REAR OXY- GEN SENSOR AND ECM CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from rear oxygen sensor. 3)Turn the ignition switch to ON. 4)Measure the voltage between rear oxygen sensor harness connector and engine ground or chassis ground. Connector & terminal (B19) No. 3 (+) — Engine ground (-):	Is the voltage more than 0.2 V?	Replace the rear oxygen sensor. <ref. fu(sti)-<br="" to="">39, Rear Oxygen Sensor.&gt;</ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between rear oxygen sen- sor and ECM con- nector • Poor contact in rear oxygen sen- sor connector • Poor contact in ECM connector	

## Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	PEO'Nos Studi
6	CHECK EXHAUST SYSTEM. Check the exhaust system parts. NOTE: Check the following items. •Loose installation of portions •Damage (crack, hole etc.) of parts	Is there a fault in exhaust sys- tem?	Repair or replace the faulty parts.	Go to step 7.
	•Looseness and ill fitting of parts between front oxygen (A/F) sensor and rear oxygen sensor			
7	CHECK AIR INTAKE SYSTEM.	Are there holes, loose bolts or disconnection of hose on air intake system?	Repair the air intake system.	Go to step 8.
8	<ul> <li>CHECK FUEL PRESSURE.</li> <li>Warning:</li> <li>•Place "NO FIRE" signs near the working area.</li> <li>•Be careful not to spill fuel on the floor.</li> <li>1)Release the fuel pressure. <ul> <li>(1) Disconnect the connector from fuel pump relay.</li> <li>(2) Start the engine and run it until it stalls.</li> <li>(3) After the engine stalls, crank it for 5 more seconds.</li> <li>(4) Turn the ignition switch to OFF.</li> </ul> </li> <li>2)Connect the connector to fuel pump relay.</li> <li>3)Disconnect the fuel delivery hose from fuel filter, and connect fuel pressure gauge.</li> <li>4)Install the fuel filler cap.</li> <li>5)Start the engine and idle while gear position is neutral.</li> <li>6)Measure the fuel pressure while disconnecting pressure regulator vacuum hose from intake manifold.</li> </ul> <li>Warning: Before removing the fuel pressure gauge, release fuel pressure.</li> <li>NOTE: If the fuel pressure does not increase, squeeze fuel return hose 2 to 3 times, then measure fuel pressure again.</li>	Is the measured value 284 — 314 kPa (2.9 — 3.2 kg/cm <sup>2</sup> , 41 — 46 psi)?	Go to step 9.	Repair the follow- ing items. Fuel pressure too high: • Clogged fuel return line or bent hose Fuel pressure too low: • Improper fuel pump discharge • Clogged fuel supply line
9	<ul> <li>CHECK FUEL PRESSURE.</li> <li>After connecting the pressure regulator vacuum hose, measure fuel pressure.</li> <li>Warning: Before removing the fuel pressure gauge, release fuel pressure.</li> <li>NOTE:</li> <li>If the fuel pressure does not increase, squeeze fuel return hose 2 to 3 times, then measure fuel pressure again.</li> <li>If out of specification as measured at this step, check or replace the pressure regulator and pressure regulator vacuum hose.</li> </ul>	Is the measured value 206 — 235 kPa (2.1 — 2.4 kg/cm <sup>2</sup> , 30 — 34 psi)?	Go to step <b>10</b> .	Repair the follow- ing items. Fuel pressure too high: • Faulty pres- sure regulator • Clogged fuel return line or bent hose Fuel pressure too low: • Faulty pres- sure regulator • Improper fuel pump discharge • Clogged fuel supply line

### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) Nor You h

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	Step	Check	Yes	No Sti	lel:
10	CHECK ENGINE COOLANT TEMPERATURE SENSOR. 1)Start the engine and warm-up completely. 2)Read the data of engine coolant temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Is the temperature more than 60°C (140°F)?	Go to step 11.	Replace the engine coolant temperature sen- sor. <ref. to<br="">FU(STi)-26, Engine Coolant Temperature Sen- sor.&gt;</ref.>	19105
11	CHECK MASS AIR FLOW AND INTAKE AIR TEMPERATURE. 1)Start the engine and warm-up engine until coolant temperature is greater than 60°C (140°F). 2)Place the shift lever in neutral position. 3)Turn the A/C switch to OFF. 4)Turn all accessory switches to OFF. 5)Read the data of mass air flow and intake air temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool For detailed operation procedure, refer to the OBD-II general scan tool</ref.>	Is the measured value within the followings? Ignition ON: 73.3 — 106.6 kPa (550 — 800 mmHg, 21.65 — 31.50 inHg) Idling: 24.0 — 41.3 kPa (180 — 310 mmHg, 7.09 — 12.20 inHg)	Go to step 12.	Replace the mass air flow and intake air temperature sensor. <ref. to<br="">FU(STi)-30, Mass Air Flow and Intake Air Temper- ature Sensor.&gt;</ref.>	
12	<ul> <li>CHECK MASS AIR FLOW AND INTAKE AIR TEMPERATURE SENSOR.</li> <li>1)Start the engine and warm-up engine until coolant temperature is greater than 60°C (140°F).</li> <li>2)Place the shift lever in neutral position.</li> <li>3)Turn the A/C switch to OFF.</li> <li>4)Turn all accessory switches to OFF.</li> <li>5)Open the front hood.</li> <li>6)Measure the ambient temperature.</li> <li>7)Read the data of mass air flow and intake air temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool.</li> <li>NOTE:</li> <li>Subaru Select Monitor</li> <li>For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE".</li> <li>OBD-II general scan tool</li> <li>For detailed operation procedure, refer to the OBD-II General Scan Tool Instruction Manual.</li> </ul>	Subtract ambient temperature from intake air temperature. Is the obtained value –10°C — 50°C (14°F — 122°F)?	cause probable cause is deteriora-	FU(STi)-30, Mass Air Flow and	

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)** A + -

ENGINE (DIÀGNOSTICS)

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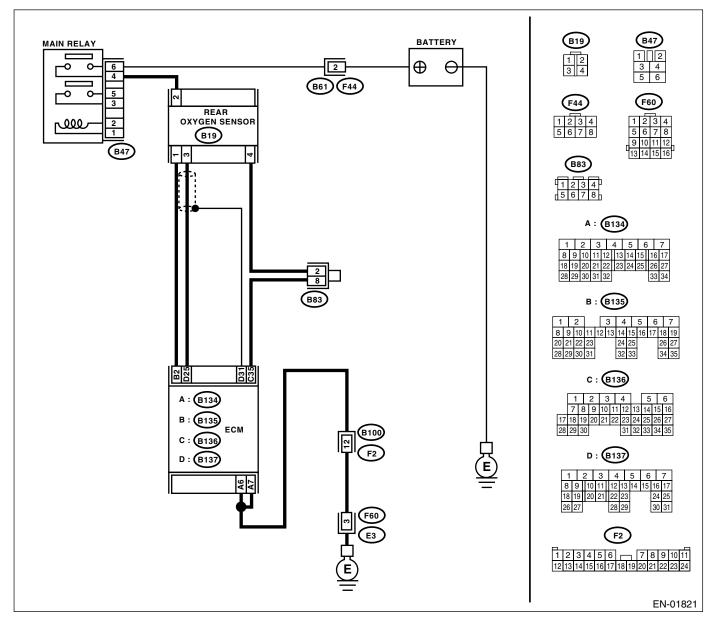
# DI: DTC P2097 — POST CATALYST FUEL TRIM SYSTEM TOO RICH BANK 1 —

Two consecutive driving cycles with fault

• GENERAL DESCRIPTION < Ref. to GD(STi)-250, DTC P2097 - POST CATALYST FUEL TRIM SYS-TEM TOO RICH BANK 1 ----, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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	Step	Check	Yes	RE No Sti	Id:
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Using the List of Diagnostic Trou- ble Code (DTC), check the appro- priate DTC. <ref. to EN(STi)-66, List of Diagnostic Trouble Code (DTC).&gt;</ref. 	Go to step 2.	UIOS
2	CHECK REAR OXYGEN SENSOR DATA. 1)Warm-up the engine until engine coolant temperature is above 70°C (158°F), and keep the engine speed at 2,000 rpm to 3,000 rpm for 2 minutes. 2)Read the data of rear oxygen sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DIS- PLAY FOR ENGINE". <ref. en(sti)-28,<br="" to="">Subaru Select Monitor.&gt; •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Does the value fluctuate?	Go to step <b>6</b> .	Go to step 3.	
3	CHECK REAR OXYGEN SENSOR DATA. Read the data of rear oxygen sensor signal using Subaru Select Monitor or OBD-II general scan tool.	Is the voltage 0.2 — 0.4 V?	Go to step <b>4</b> .	Replace the rear oxygen sensor. <ref. fu(sti)-<br="" to="">39, Rear Oxygen Sensor.&gt;</ref.>	
4	<ul> <li>CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connectors from ECM and rear oxygen sensor.</li> <li>3)Measure the resistance of harness between ECM and rear oxygen sensor connector.</li> <li>Connector &amp; terminal (B137) No. 25 — (B19) No. 3:</li> </ul>	Is the resistance more than 3 Ω?	Repair the open circuit in harness between ECM and rear oxygen sen- sor connector.	Go to step 5.	
5	CHECK HARNESS BETWEEN REAR OXY- GEN SENSOR AND ECM CONNECTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from rear oxygen sensor. 3)Turn the ignition switch to ON. 4)Measure the voltage between rear oxygen sensor harness connector and engine ground or chassis ground. Connector & terminal (B19) No. 3 (+) — Engine ground (-):	Is the voltage more than 0.2 V?	Replace the rear oxygen sensor. <ref. fu(sti)-<br="" to="">39, Rear Oxygen Sensor.&gt;</ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following: • Open circuit in harness between rear oxygen sen- sor and ECM con- nector • Poor contact in rear oxygen sen- sor connector • Poor contact in ECM connector	

## Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	No St	Id.
6	CHECK EXHAUST SYSTEM. Check the exhaust system parts. NOTE: Check the following items. •Loose installation of portions •Damage (crack, hole etc.) of parts •Looseness and ill fitting of parts between front	Is there a fault in exhaust sys- tem?	Repair or replace the faulty parts.	Go to step 7.	<sup>Idios</sup>
7	oxygen (A/F) sensor and rear oxygen sensor CHECK AIR INTAKE SYSTEM.	Are there holes, loose bolts or disconnection of hose on air intake system?	Repair the air intake system.	Go to step 8.	
8	<ul> <li>CHECK FUEL PRESSURE.</li> <li>Warning: <ul> <li>Place "NO FIRE" signs near the working area.</li> <li>Be careful not to spill fuel on the floor.</li> </ul> </li> <li>1)Release the fuel pressure. <ul> <li>(1) Disconnect the connector from fuel pump relay.</li> <li>(2) Start the engine and run it until it stalls.</li> <li>(3) After the engine stalls, crank it for 5 more seconds.</li> <li>(4) Turn the ignition switch to OFF.</li> </ul> </li> <li>2)Connect the connector to fuel pump relay.</li> <li>3)Disconnect the fuel delivery hose from fuel filter, and connect fuel pressure gauge.</li> <li>4)Install the fuel filler cap.</li> <li>5)Start the engine and idle while gear position is neutral.</li> <li>6)Measure the fuel pressure while disconnecting pressure regulator vacuum hose from intake manifold.</li> </ul> <li>Warning: <ul> <li>Before removing the fuel pressure gauge, release fuel pressure.</li> <li>NOTE:</li> <li>If the fuel pressure does not increase, squeeze fuel return hose 2 to 3 times, then measure fuel pressure again.</li> </ul> </li>	Is the measured value 284 — 314 kPa (2.9 — 3.2 kg/cm <sup>2</sup> , 41 — 46 psi)?	Go to step 9.	Repair the follow- ing items. Fuel pressure too high: • Clogged fuel return line or bent hose Fuel pressure too low: • Improper fuel pump discharge • Clogged fuel supply line	
9	<ul> <li>CHECK FUEL PRESSURE.</li> <li>After connecting the pressure regulator vacuum hose, measure fuel pressure.</li> <li>Warning: Before removing the fuel pressure gauge, release fuel pressure.</li> <li>NOTE:</li> <li>If the fuel pressure does not increase, squeeze fuel return hose 2 to 3 times, then measure fuel pressure again.</li> <li>If out of specification as measured at this step, check or replace the pressure regulator and pressure regulator vacuum hose.</li> </ul>	Is the measured value 206 — 235 kPa (2.1 — 2.4 kg/cm <sup>2</sup> , 30 — 34 psi)?	Go to step <b>10</b> .	Repair the follow- ing items. Fuel pressure too high: • Faulty pres- sure regulator • Clogged fuel return line or bent hose Fuel pressure too low: • Faulty pres- sure regulator • Improper fuel pump discharge • Clogged fuel supply line	

## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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	Step	Check	Yes	Pro Nos Sti	Id.
10	CHECK ENGINE COOLANT TEMPERATURE SENSOR. 1)Start the engine and warm-up completely. 2)Read the data of engine coolant temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Is the temperature more than 60°C (140°F)?	Go to step 11.	Replace the engine coolant temperature sen- sor. <ref. to<br="">FU(STi)-26, Engine Coolant Temperature Sen- sor.&gt;</ref.>	14105
11	CHECK MASS AIR FLOW AND INTAKE AIR TEMPERATURE. 1)Start the engine and warm-up engine until coolant temperature is greater than 60°C (140°F). 2)Place the shift lever in neutral position. 3)Turn the A/C switch to OFF. 4)Turn all accessory switches to OFF. 5)Read the data of mass air flow and intake air temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: •Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(sti)-28,="" monitor.="" select="" subaru="" to=""> •OBD-II general scan tool For detailed operation procedure, refer to the OBD-II general scan tool</ref.>			Replace the mass air flow and intake air temperature sensor. <ref. to<br="">FU(STi)-30, Mass Air Flow and Intake Air Temper- ature Sensor.&gt;</ref.>	
12	<ul> <li>CHECK MASS AIR FLOW AND INTAKE AIR TEMPERATURE SENSOR.</li> <li>1) Start the engine and warm-up engine until coolant temperature is greater than 60°C (140°F).</li> <li>2) Place the shift lever in neutral position.</li> <li>3) Turn the A/C switch to OFF.</li> <li>4) Turn all accessory switches to OFF.</li> <li>5) Open the front hood.</li> <li>6) Measure the ambient temperature.</li> <li>7) Read the data of mass air flow and intake air temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool.</li> <li>NOTE:</li> <li>•Subaru Select Monitor</li> <li>For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE".</li> <li>&lt; Ref. to EN(STi)-28, Subaru Select Monitor.&gt;</li> <li>•OBD-II general scan tool</li> <li>For detailed operation procedure, refer to the OBD-II General Scan Tool Instruction Manual.</li> </ul>		Inspection by DTM is required, be- cause probable cause is deteriora-	FU(STi)-30, Mass Air Flow and	

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

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## DJ:DTC P2101 — THROTTLE ACTUATOR CONTROL MOTOR CIRCUIT RANGE/ F

### • DTC DETECTING CONDITION:

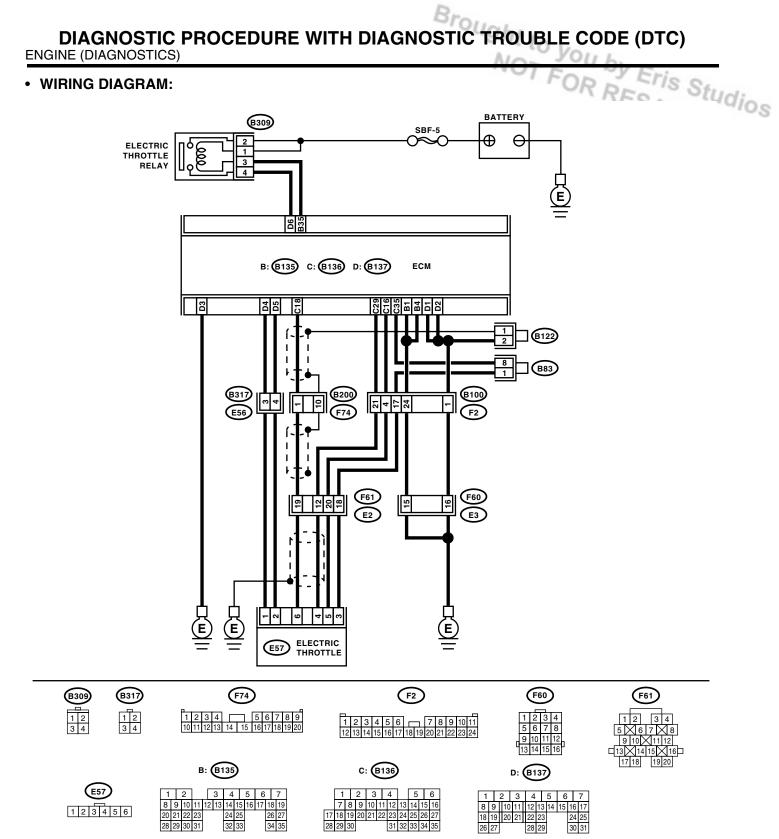
Immediately at fault recognition

 GENERAL DESCRIPTION <Ref. to GD(STi)-187, DTC P0638 — THROTTLE ACTUATOR CONTROL</li> RANGE/PERFORMANCE (BANK 1) -, Diagnostic Trouble Code (DTC) Detecting Criteria.>, <Ref. to GD(STi)-222, DTC P1160 — RETURN SPRING FAILURE —, Diagnostic Trouble Code (DTC) Detecting Criteria.> and <Ref. to GD(STi)-252, DTC P2101 — THROTTLE ACTUATOR CONTROL MOTOR CIR-CUIT RANGE/PERFORMANCE —, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### **TROUBLE SYMPTOM:**

- · Erroneous idling
- Poor driving performance
- Engine stalls.

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EN-01825

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	Step	Check	Yes	PE Nos Still	Id:
1	CHECK ELECTRIC THROTTLE RELAY. 1)Turn the ignition switch to OFF.	Is the resistance less than 1 $\Omega$ ?	Go to step 2.	Replace the elec- tric throttle relay.	0/0s
	2)Remove the electric throttle relay.	22:		and another letay.	
	3)Connect the battery to electric throttle relay				
	terminal No. 1 and No. 3.				
	4)Measure the resistance between electric				
	throttle relay terminals.				
	Terminals				
	No. 2 — No. 4:				
2	CHECK POWER SUPPLY TO ELECTRIC	Is the voltage more than 5 V?	Go to step 3.	Repair the open	
	THROTTLE RELAY.			power supply cir-	
	Measure the voltage between electric throttle			cuit or ground	
	relay connector and engine ground.			short.	
	Connector & terminal				
	(B309) No. 1 (+) — Engine ground (–):				
	(B309) No. 2 (+) — Engine ground (–):				
3	CHECK HARNESS BETWEEN ECM AND	Is the voltage less than 5 V?	Go to step 4.	Repair short of the	
	ELECTRIC THROTTLE.			power supply cir-	
	1)Disconnect the connector from ECM.			cuit between ECM and electric throt-	
	<ul><li>2)Turn the ignition switch to ON.</li><li>3)Measure the voltage between electric throttle</li></ul>			tle.	
	relay connector and engine ground.			ue.	
	Connector & terminal				
	(B309) No. 3 (+) — Engine ground (–):				
4	CHECK HARNESS BETWEEN ECM AND	Is the resistance more than 1	Go to step 5.	Repair the ground	
-	ELECTRIC THROTTLE.	ΜΩ?		short of harness	
	1)Turn the ignition switch to OFF.			between ECM and	
	2)Measure the resistance between electric			electric throttle	
	throttle relay connector and chassis ground.			relay.	
	Connector & terminal				
	(B309) No. 3 — Engine ground:				
	(B309) No. 4 — Engine ground:				
5	CHECK HARNESS BETWEEN ECM AND	Is the resistance less than 1	Go to step 6.	Repair the open	
	ELECTRIC THROTTLE RELAY.	Ω?		circuit of harness	
	1)Turn the ignition switch to OFF.			between ECM and	
	2)Measure the resistance between electric			electric throttle	
	throttle connector and electric throttle relay			relay.	
	connector. Connector & terminal				
	(B135) No. 35 — (B309) No. 3:				
	(B137) No. 6 — (B309) No. 4:				
6	CHECK OUTPUT VOLTAGE OF SENSOR.	Is the voltage more than 0.4 V?	Go to step 7.	Go to step 9.	
Ē	1)Connect all the connectors.				
	2)Turn the ignition switch to ON.				
	3)Measure the voltage between ECM connec-				
	tor terminals.				
	Connector & terminal				
	(B136) No. 18 (+) — (B136) No. 35 (–):				
	4)Shake the ECM harness and connector,				
	engine harness connectors (B136, F61), elec-				
	tric throttle connector harness while monitoring				
	value of voltage meter.				
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## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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l	Step	Check	Yes	PE No Stud	d:
7	CHECK OUTPUT VOLTAGE OF SENSOR. 1)Connect all the connectors. 2)Turn the ignition switch to ON. 3)Measure the voltage between ECM connec- tor terminals. Connector & terminal (B136) No. 29 (+) — (B136) No. 35 (–): 1)Chalm the ECM have and account of the	Is the voltage more than 0.8 V?	Go to step 8.	Go to step 9.	dios
	4)Shake the ECM harness and connector, engine harness connectors, electric throttle connector harness while monitoring value of voltage meter.				
8	CHECK POOR CONTACT. Check poor contact between ECM connector and electric throttle connector.	Is there poor contact between ECM connector and electric throttle connector?	Repair the poor contact.	Go to step 13.	
9	<ul> <li>ELECTRIC THROTTLE.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from ECM.</li> <li>3)Disconnect the connector from electric throttle.</li> <li>4)Measure the resistance between ECM connector and electric throttle connector.</li> <li>Connector &amp; terminal</li> <li>(B136) No. 16 — (E57) No. 5:</li> </ul>	Is the resistance less than 1 Ω?	Go to step 10.	Repair the open harness connec- tor.	
10	CHECK THE HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. Measure the resistance between ECM connec- tor and chassis ground. Connector & terminal (B136) No. 16 — Chassis ground: (B136) No. 18 — Chassis ground: (B136) No. 29 — Chassis ground:	Is the resistance more than 1 MΩ?	Go to step 11.	Repair the ground short of harness.	
11	<ul> <li>CHECK POWER SUPPLY TO SENSOR.</li> <li>1)Connect the ECM connector.</li> <li>2)Turn the ignition switch to ON.</li> <li>3)Measure the resistance between electric throttle connector and engine ground.</li> <li>Connector &amp; terminal         <ul> <li>(E57) No.5 (+) — Engine ground (-):</li> <li>4)Shake the ECM harness and connector, engine harness connectors, while monitoring value of voltage meter.</li> </ul> </li> </ul>	Is the voltage 4.5 — 5.5 V?	Go to step 12.	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	
12	CHECK SHORT OF ECM.	Is the resistance more than 10 $\Omega$ ?	Go to step 13.	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM.	
13	<ul> <li>CHECK OUTPUT VOLTAGE OF SENSOR.</li> <li>1)Connect all the connectors.</li> <li>2)Turn the ignition switch to ON.</li> <li>3)Read the data of main throttle sensor signal, using the Subaru Select Monitor.</li> <li>4)Shake the ECM harness and connector, engine harness connectors, electric throttle connector harness while monitoring value of voltage meter.</li> </ul>	Is the voltage 4.63 V?	Go to step 14.	Go to step <b>16</b> .	

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	Step	Check	Yes	Pro No St	lel.
14	CHECK OUTPUT VOLTAGE OF SENSOR. 1)Read the data of sub throttle sensor signal, using the Subaru Select Monitor. 2)Shake the ECM harness and connector, engine harness connectors, electric throttle connector harness while monitoring value of voltage meter.	Is the voltage 4.73 V?	Go to step 15.	Go to step 16.	<sup>rqio</sup> s
15	CHECK POOR CONTACT IN CONNECTORS. Check poor contact in connectors between ECM and electric throttle?	Is there poor contact in con- nectors between ECM and electric throttle?	Repair the poor contact in connectors.	Go to step 21.	
16	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Disconnect the connector from electric throt- tle. 4)Measure the resistance between ECM con- nector and electric throttle connector. Connector & terminal (B136) No. 35 – (E57) No. 3: (B136) No. 18 – (E57) No. 6: (B136) No. 29 – (E57) No. 4:	Is the resistance less than 1 $\Omega$ ?	Go to step 17.	Repair the open harness connec- tor.	
17	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. 1)Connect the ECM connector. 2)Measure the resistance between electric throttle connector and engine ground. Connector & terminal (E57) No. 3 — Engine ground:	Is the resistance less than 5 $\Omega$ ?	Go to step 18.	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM.	
18	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. 1)Turn the ignition switch to ON. 2)Measure the voltage between electric throttle connector and engine ground. <i>Connector &amp; terminal</i> <i>(E57) No. 5 (+) — Engine ground (–):</i> 3)Shake the ECM harness and connector, engine harness connectors, while monitoring value of voltage meter.	Is the voltage more than 10 V?	Go to step <b>19</b> .	Repair the battery short of harness between ECM connector and electric throttle connector.	
19	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. 1)Measure the voltage between electric throttle connector and engine ground. <i>Connector &amp; terminal</i> (E57) No. 6 (+) — Engine ground (-): (E57) No. 4 (+) — Engine ground (-): 2)Shake the ECM harness and connector, engine harness connectors, while monitoring value of voltage meter.	Is the voltage less than 10 V?	Go to step 20.	Repair the short of harness between ECM connector and electric throt- tle connector.	
20	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. 1)Turn the ignition switch to OFF. 2)Remove the ECM. 3)Measure the voltage between ECM connec- tors. Connector & terminal (B136) No. 18 — (B136) No. 35: (B136) No. 29 — (B136) No. 35:	Is the resistance more than 1 $M\Omega$ ?	Go to step 21.	Repair the short of sensor power sup- ply.	

## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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	Step	Check	Yes	REC'No' Stud	4.
21	<ul> <li>CHECK OUTPUT VOLTAGE OF SENSOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Connect all the connectors except electric throttle replay.</li> <li>3)Turn the ignition switch to ON.</li> <li>4)Read the data of main throttle sensor signals, using Subaru Select Monitor.</li> </ul>	Is the voltage 0.81 — 0.87 V?	Go to step 22.	Repair the poor contact in electric throttle connector. If problem per- sists, replace the electric throttle.	1105
22	CHECK OUTPUT VOLTAGE OF SENSOR. Read the data of sub throttle sensor signals, using Subaru Select Monitor.	Is the voltage 1.64 — 1.70 V?	Go to step 23.	Repair the poor contact in electric throttle connector. If problem per- sists, replace the electric throttle.	
23	<ul> <li>ELECTRIC THROTTLE MOTOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from ECM.</li> <li>3)Disconnect the connectors from electric throttle.</li> <li>4)Measure the resistance between ECM connector and electric throttle connector.</li> <li><i>Connector &amp; terminal</i></li> <li>(B137) No. 5 — (E57) No. 2:</li> <li>(B137) No. 4 — (E57) No. 1:</li> </ul>	Is the resistance less than 1 Ω?	Go to step 24.	Repair the open harness connec- tor.	
24	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE MOTOR. 1)Connect the connectors to ECM. 2)Turn the ignition switch to ON. 3)Measure the voltage between electric throttle connector and engine ground. <i>Connector &amp; terminal</i> (E57) No. 2 (+) — Engine ground (-): (E57) No. 1 (+) — Engine ground (-):	Is the voltage less than 5 V?	Go to step 25.	Repair the short of harness to power supply circuit between ECM and electric throttle.	
25	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE MOTOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Measure the resistance between electric throttle connector and engine ground. <i>Connector &amp; terminal</i> (E57) No. 2 — Engine ground: (E57) No. 1 — Engine ground:	Is the resistance more than 1 $M\Omega$ ?	Go to step 26.	Repair the short of harness.	
26	CHECK ELECTRIC THROTTLE MOTOR HARNESS. Measure the resistance between electric throt- tle connector terminals. Connector & terminal (E57) No. 2 — (E57) No. 1:	Is the resistance more than 1 $M\Omega$ ?	Go to step 27.	Repair the short of harness.	
27	CHECK ELECTRIC THROTTLE GROUND CIRCUIT. Measure the resistance between ECM connec- tor and engine ground. Connector & terminal (B137) No. 3 — Engine ground:	Is the resistance less than 10 $\Omega$ ?	Go to step 28.	Repair the open circuit harness.	
28	CHECK ELECTRIC THROTTLE.	Is the resistance less than 5 $\Omega$ ?	Go to step 29.	Replace the elec- tric throttle.	

	Step	Check	Yes	No St
-	CHECK ELECTRIC THROTTLE. Open and close the throttle valve to its full width with finger.	Does it return to specified posi- tion (3 mm (0.12 in) open from fully closed position.) when fin- ger is released?	contact in ECM	Replace the elec- tric throttle.

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ENGINE (DIAGNOSTICS)

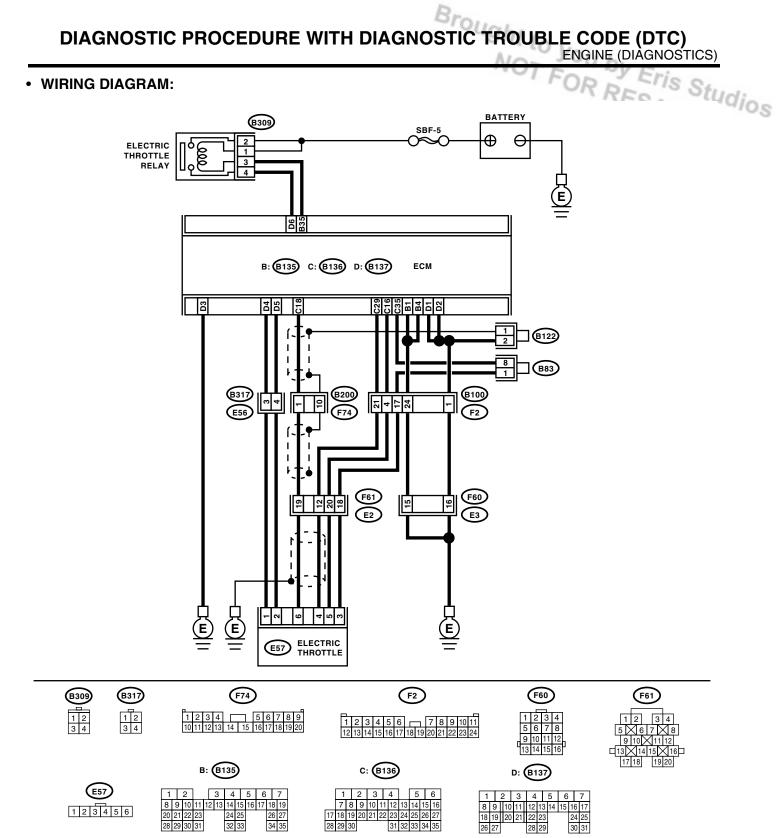
### DK:DTC P2102 — THROTTLE ACTUATOR CONTROL MOTOR CIRCUIT LOW <sup>u</sup>dios

### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-254, DTC P2102 THROTTLE ACTUATOR CONTROL MOTOR CIRCUIT LOW -, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### • TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance
- Engine stalls.



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### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) Non You h

	Cton	Check	Yes	No	
Ļ	Step	Check		KEO YUUA	lin
1	<ul> <li>CHECK ELECTRIC THROTTLE RELAY.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Remove the electric throttle relay.</li> <li>3)Connect the battery to electric throttle relay terminal No. 1 and No. 3.</li> <li>4)Measure the resistance between electric throttle terminals.</li> <li>Connector &amp; terminal</li> <li>(B309) No. 2 — (B309) No. 4:</li> </ul>	Is the resistance less than 1 Ω?	Go to step 2.	Replace the elec- tric throttle relay.	''0S
2	CHECK POWER TO ELECTRIC THROTTLE RELAY Measure the voltage between electric throttle relay connector and engine ground. <i>Connector &amp; terminal</i> (B309) No. 1 (+) — Engine ground (–): (B309) No. 2 (+) — Engine ground (–):	Is the voltage more than 5 V?	Go to step <b>3</b> .	Repair the open power supply cir- cuit or ground short.	
3	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. 1)Disconnect the connector from ECM. 2)Turn the ignition switch to ON. 3)Measure the voltage between electric throttle relay connector and engine ground. <i>Connector &amp; terminal</i> (B309) No. 3 (+) — Engine ground (–):	Is the voltage less than 5 V?	Go to step <b>4</b> .	Repair the short of power supply cir- cuit between ECM and electric throt- tle.	
4	<ol> <li>Turn the ignition switch to OFF.</li> <li>Measure the resistance between electric throttle relay connector and chassis ground.</li> <li>Connector &amp; terminal (B309) No. 3 — Engine ground: (B309) No. 4 — Engine ground:</li> </ol>	Is the resistance more than 1 MΩ?	Go to step <b>5</b> .	Repair the ground short of harness between ECM and electric throttle relay.	
5	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE RELAY. Measure the resistance between ECM connec- tor and electric throttle relay connector. Connector & terminal (B135) No. 35 — (B309) No. 3: (B137) No. 6 — (B309) No. 4:	Is the resistance less than 1 $\Omega$ ?	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM.	Repair the open harness between ECM and electric throttle relay.	

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

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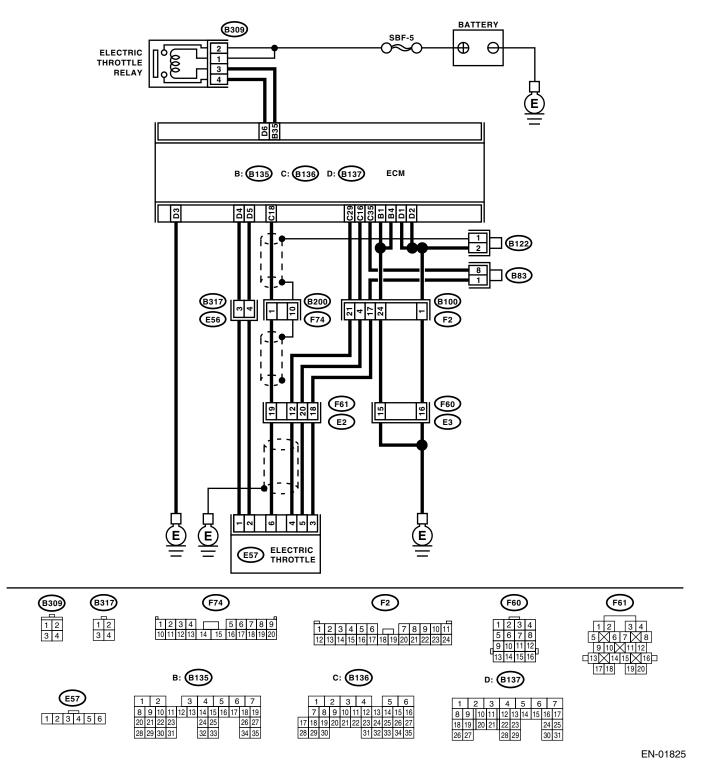
ENGINE (DIÀGNOSTICS)

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# DL:DTC P2103 — THROTTLE ACTUATOR CONTROL MOTOR CIRCUIT HIGH —

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-256, DTC P2103 THROTTLE ACTUATOR CONTROL</li>
- WIRING DIAGRAM:



## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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ENGINE (DIAGNOSTICS)

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	Step	Check	Yes	RE No Sti	Int:
1	<ul> <li>CHECK ELECTRIC THROTTLE RELAY.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Remove the electric throttle relay.</li> <li>3)Measure the resistance between electric throttle relay terminals.</li> <li>Terminals</li> <li>No. 2 — No. 4:</li> </ul>	Is the resistance more than 1 $M\Omega$ ?	Go to step 2.	Replace the elec- tric throttle relay.	I <sup>UIOS</sup>
2	CHECK SHORT OF ELECTRIC THROTTLE RELAY POWER SUPPLY CIRCUIT. 1)Turn the ignition switch to ON. 2)Measure the voltage between electric throttle relay connector and engine ground. Connector & terminal (B309) No. 4 (+) — Engine ground (–):	Is the voltage more than 5 V?	Go to step 3.	Repair the short of power supply to harness between ECM and electric throttle relay.	
3	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE RELAY. 1)Turn the ignition switch to OFF. 2)Disconnect the connectors from ECM. 3)Measure the resistance between ECM con- nector and engine ground. <i>Connector &amp; terminal</i> (B135) No. 35 — Engine ground:	Is the resistance more than 1 $M\Omega$ ?	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM.	Repair the ground short of harness between ECM and electric throttle relay.	

## DM:DTC P2109 — THROTTLE/PEDAL POSITION SENSOR A MINIMUM STOP PERFORMANCE —

NOTE:

For the diagnostic procedure, refer to DTC P2101. <Ref. to EN(STi)-325, DTC P2101 — THROTTLE ACTU-ATOR CONTROL MOTOR CIRCUIT RANGE/PERFORMANCE —, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

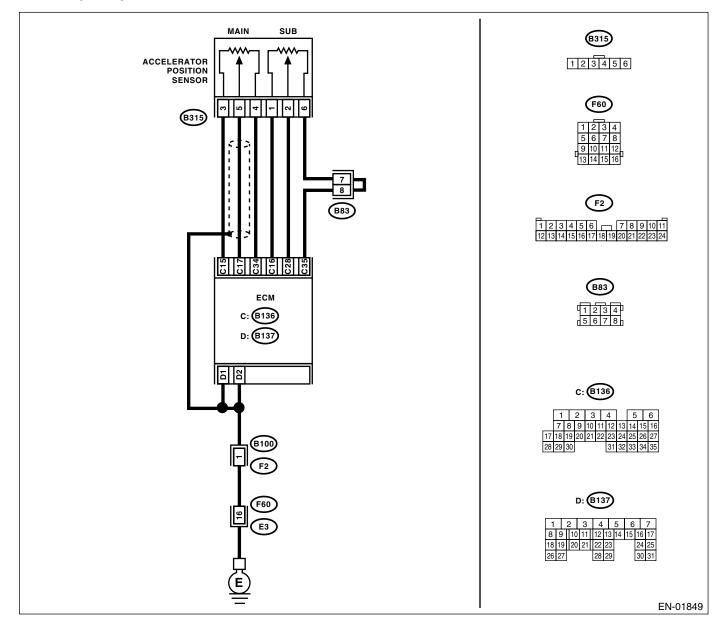
ENGINE (DIÀGNOSTICS)

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## DN:DTC P2122 — THROTTLE/PEDAL POSITION SENSOR/SWITCH "D" CIRCUIT F

### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-260, DTC P2122 THROTTLE/PEDAL POSITION SEN-</li> SOR/SWITCH "D" CIRCUIT LOW INPUT -, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
  - Poor driving performance
- WIRING DIAGRAM:



## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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Step	Check	Yes	Pro Nos Sti	lel.
<ol> <li>CHECK OUTPUT VOLTAGE OF ACCELERA- TOR POSITION SENSOR.         <ol> <li>Turn the ignition switch to ON.</li> <li>Measure the voltage between ECM connector terminals.</li> <li>Connector &amp; terminal (B136) No. 17 (+) — (B136) No. 34 (-):</li> <li>Shake the ECM harness and connector, accelerator position sensor.</li> </ol> </li> </ol>	Is the voltage more than 0.4 V?	Go to step 2.	Go to step 3.	<sup>rq</sup> ios
2 CHECK POOR CONTACT IN CONNECTORS. Check poor contact in connectors between ECM and accelerator position sensor.	Is there poor contact in con- nectors between ECM and accelerator position sensor?	Repair the poor contact in connec- tors.	Connector has returned to its nor- mal condition at this time. A tempo- rary poor contact of the connector may be the cause.	
<ul> <li>3 CHECK HARNESS BETWEEN ECM AND AC- CELERATOR POSITION SENSOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from ECM.</li> <li>3)Disconnect the connector from accelerator position sensor.</li> <li>4)Measure the resistance between ECM con- nector and accelerator position sensor.</li> <li>Connector &amp; terminal (B136) No. 17 — (B315) No. 5: (B136) No. 15 — (B315) No. 3:</li> </ul>	Is the resistance less than 1 Ω?	Go to step 4.	Repair the open harness connec- tor.	
	ΜΩ?	Go to step <b>5</b> .	Repair the open harness connec- tor.	
<ul> <li>5 CHECK ACCELERATOR POSITION SEN- SOR POWER SUPPLY         <ol> <li>Connect the ECM connector.</li> <li>Turn the ignition switch to ON.</li> <li>Measure the voltage between accelerator position sensor connector and engine ground.</li> <li>Connector &amp; terminal</li></ol></li></ul>	Is the voltage 4.5 — 5.5 V?	Go to step <b>6</b> .	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	
6 CHECK ACCELERATOR POSITION SEN- SOR. Measure the resistance of accelerator position sensor. <i>Terminals</i> <i>No. 3 — No. 4:</i>	Is the resistance 1.2 — 4.8 kΩ?	Go to step 7.	Replace the accel- erator position sensor.	
<ul> <li>CHECK ACCELERATOR POSITION SEN- SOR.</li> <li>Measure the resistance of accelerator position sensor when accelerator pedal is released.</li> <li><i>Terminals</i> No. 5 – No. 4:</li> </ul>	Is the resistance 0.2 — 1.0 kΩ?	Go to step <b>8</b> .	Replace the accel- erator position sensor.	

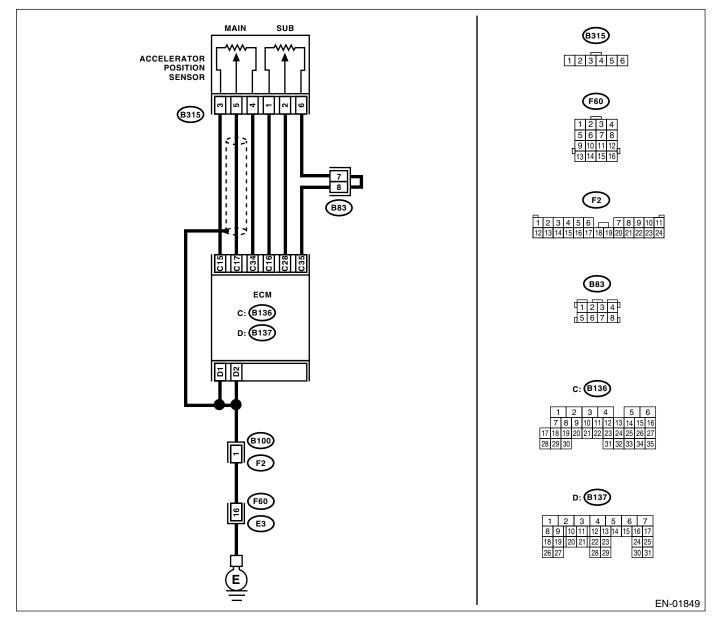
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	Step	Check	Yes	No St	lel:
8	CHECK ACCELERATOR POSITION SEN- SOR. Measure the resistance of accelerator position sensor when acceleration pedal is being depressed. <i>Terminals</i> <i>No. 5 — No. 4:</i>	ls the resistance 0.5 — 2.5 kΩ?	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM.	Replace the accelerator position sensor.	<sup>ru</sup> los

## DO:DTC P2123 — THROTTLE/PEDAL POSITION SENSOR/SWITCH "D" CIR-CUIT HIGH INPUT —

### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-262, DTC P2123 THROTTLE/PEDAL POSITION SEN-SOR/SWITCH "D" CIRCUIT HIGH INPUT —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
  - Poor driving performance

### WIRING DIAGRAM:



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	Step	Check	Yes	Pro No St	I.d.
1	CHECK OUTPUT VOLTAGE OF ACCELERA- TOR POSITION SENSOR. 1)Turn the ignition switch to ON. 2)Read the data of main accelerator position sensor signals, using Subaru Select Monitor. 3)Shake the ECM harness and connector, engine harness connector, accelerator position sensor connector harness while monitoring value of voltage meter.			Go to step 3.	<sup>rq</sup> ios
2	CHECK POOR CONTACT IN CONNECTORS. Check poor contact in connectors between ECM and accelerator position sensor.	Is there any poor contact in connectors between ECM and accelerator position sensor?	Repair the poor contact in connec- tors.	Connector has returned to its nor- mal condition at this time. A tempo- rary poor contact in the connector might have been the cause.	
3	CHECK HARNESS BETWEEN ECM AND AC- CELERATOR POSITION SENSOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Disconnect the connector from accelerator position sensor. 4)Measure the resistance between ECM con- nector and accelerator position sensor. Connector & terminal (B136) No. 34 — (B315) No. 4:	Is the resistance less than 1 $\Omega$ ?	Go to step 4.	Repair the open harness connec- tor.	
4	CHECK HARNESS BETWEEN ECM AND AC- CELERATOR POSITION SENSOR. 1)Connect the ECM connector. 2)Measure the resistance between accelera- tor position sensor and engine ground. <i>Connector &amp; terminal</i> (B315) No. 4 — Engine ground:	Is the resistance less than 5 $\Omega$ ?	Go to step <b>5</b> .	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	
5	CHECK HARNESS BETWEEN ECM AND AC- CELERATOR POSITION SENSOR. 1)Connect the ECM connector. 2)Turn the ignition switch to ON. 3)Measure the voltage between accelerator position sensor connector and engine ground. Connector & terminal (B315) No. 3 (+) — Engine ground (-): 4)Shake the ECM harness and connector, while monitoring value of voltage meter.		Go to step <b>6</b> .	Repair the battery short of harness between ECM connector and accelerator posi- tion sensor.	
6	CHECK POWER SUPPLY TO ACCELERA- TOR POSITION SENSOR. 1)Measure the voltage between accelerator position sensor connector and engine ground. <i>Connector &amp; terminal</i> (B315) No. 5 (+) — Engine ground (–): 2)Shake the ECM harness and connector, while monitoring value of voltage meter.	Is the voltage less than 4.8 V?	Go to step <b>7</b> .	Repair the short of harness between ECM connector and accelerator position sensor connector.	

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	Step	Check	Yes	Pro No St	Id.
7	<ul> <li>CHECK HARNESS BETWEEN ECM AND AC- CELERATOR POSITION SENSOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Connect the accelerator position sensor connector.</li> <li>3)Turn the ignition switch to ON.</li> <li>4)Measure the voltage between ECM connector and chassis ground.</li> <li>Connector &amp; terminal (B136) No. 17 (+) — Chassis ground (-):</li> </ul>	, , , , , , , , , , , , , , , , , , ,	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	Repair the poor contact in electric throttle connector. If problem per- sists, replace the electric throttle.	19105

### Bro **DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)**

ENGINE (DIÀGNOSTICS)

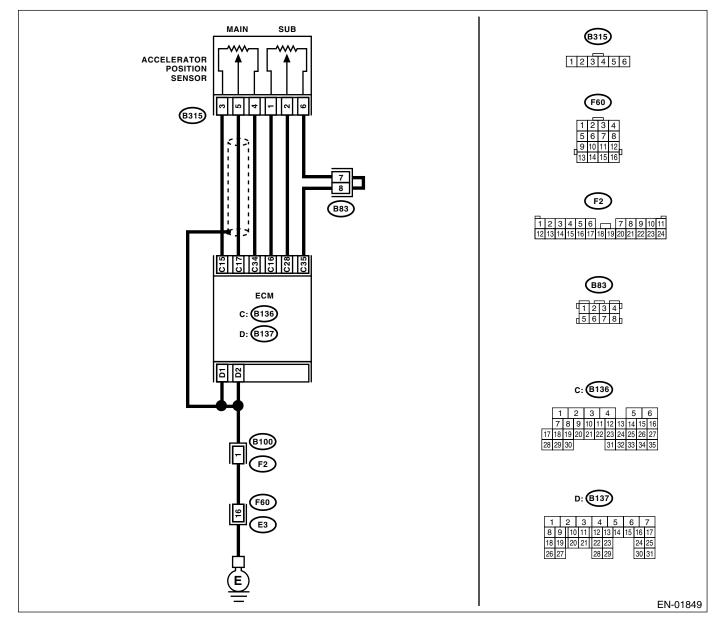
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# DP:DTC P2127 — THROTTLE/PEDAL POSITION SENSOR/SWITCH "E" CIR-

### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-264, DTC P2127 THROTTLE/PEDAL POSITION SEN-</li> SOR/SWITCH "E" CIRCUIT LOW INPUT -, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
  - Poor driving performance

### • WIRING DIAGRAM:



## DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC)

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	Step	Check	Yes	No Sti	Id:
1	CHECK OUTPUT VOLTAGE OF ACCELERA- TOR POSITION SENSOR. 1)Turn the ignition switch to ON. 2)Measure the voltage between ECM connec- tor terminals. Connector & terminal (B136) No. 28 (+) — (B136) No. 35 (-): 3)Shake the ECM harness and connector, accelerator position sensor.			Go to step 3.	<sup>rq</sup> ios
2	CHECK POOR CONTACT IN CONNECTORS. Check poor contact in connectors between ECM and accelerator position sensor.	Is there any poor contact in connectors between ECM and accelerator position sensor?	Repair the poor contact in connec- tors.	Connector has returned to its nor- mal condition at this time. A tempo- rary poor contact in the connector might have been the cause.	
3	<ol> <li>Turn the ignition switch to OFF.</li> <li>Disconnect the connector from ECM.</li> <li>Disconnect the connector from accelerator position sensor.</li> <li>Measure the resistance between ECM connector and accelerator position sensor.</li> <li>Connector &amp; terminal         <ul> <li>(B136) No. 28 — (B315) No. 2:</li> <li>(B136) No. 1 — (B315) No. 1:</li> </ul> </li> </ol>	Ω?	Go to step 4.	Repair the open harness connec- tor.	
4	CHECK HARNESS BETWEEN ECM AND AC- CELERATOR POSITION SENSOR. Measure the resistance between ECM connec- tor and chassis ground. Connector & terminal (B136) No. 28 — Chassis ground: (B136) No. 16 — Chassis ground:	Is the resistance more than 1 $M\Omega$ ?	Go to step <b>5</b> .	Repair the ground short of harness.	
5	CHECK POWER SUPPLY TO ACCELERA- TOR POSITION SENSOR. 1)Connect the ECM connector. 2)Turn the ignition switch to ON. 3)Measure the voltage between accelerator position sensor connector and engine ground. <i>Connector &amp; terminal</i> (B315) No. 1 (+) — Engine ground (-): 4)Shake the ECM harness and connector, while monitoring value of voltage meter.	Is the voltage 4.5 — 5.5 V?	Go to step <b>6</b> .	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	
6	CHECK ACCELERATOR POSITION SEN- SOR. Measure the resistance of accelerator position sensor. <i>Terminals</i> <i>No. 1 — No. 6:</i>	Is the resistance 0.75 — 3.15 kΩ?	Go to step 7.	Replace the accelerator position sensor.	
7	CHECK ACCELERATOR POSITION SEN- SOR. Measure the resistance of accelerator position sensor when accelerator pedal is released. <i>Terminals</i> <i>No. 2 — No. 6:</i>	Is the resistance 0.15 — 0.63 kΩ?	Go to step <b>8</b> .	Replace the accelerator position sensor.	

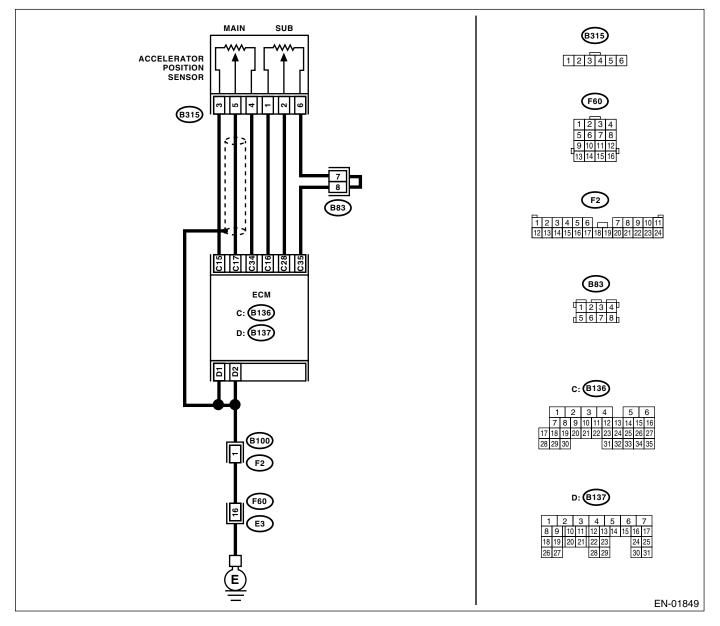
			FOD	Y Eria	-
	Step	Check	Yes	No St	Id:
8		Is the resistance 0.28 — 1.68 kΩ?	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM.	Replace the accelerator position sensor.	'410s

## DQ:DTC P2128 — THROTTLE/PEDAL POSITION SENSOR/SWITCH "E" CIR-CUIT HIGHT INPUT —

### • DTC DETECTING CONDITION:

- · Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-266, DTC P2128 THROTTLE/PEDAL POSITION SEN-SOR/SWITCH "E" CIRCUIT HIGH INPUT —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
  - Poor driving performance

### WIRING DIAGRAM:



			VIEA	y Fri-	-
	Step	Check	Yes	No St	lel:
1	CHECK OUTPUT VOLTAGE OF ACCELERA- TOR POSITION SENSOR. 1)Turn the ignition switch to ON. 2)Read the data of sub accelerator position sensor signals, using Subaru Select Monitor. 3)Shake the ECM harness and connector, engine harness connector, accelerator position sensor connector harness while monitoring value of voltage meter.			Go to step 3.	<sup>IQIOS</sup>
2	CHECK POOR CONTACT IN CONNECTORS. Check poor contact in connectors between ECM and accelerator position sensor.	Is there any poor contact in connectors between ECM and accelerator position sensor?	Repair the poor contact in connec- tors.	Connector has returned to its nor- mal condition at this time. A tempo- rary poor contact in the connector might have been the cause.	
3	CHECK HARNESS BETWEEN ECM AND AC- CELERATOR POSITION SENSOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Disconnect the connector from accelerator position sensor. 4)Measure the resistance between ECM con- nector and accelerator position sensor. Connector & terminal (B136) No. 19 — (B315) No. 6:	Is the resistance less than 1 $\Omega$ ?	Go to step 4.	Repair the open harness connec- tor.	
4	CHECK HARNESS BETWEEN ECM AND AC- CELERATOR POSITION SENSOR. 1)Connect the ECM connector. 2)Measure the resistance between accelera- tor position sensor connector and engine ground. Connector & terminal (B315) No. 6 — Engine ground:	Is the resistance less than 5 $\Omega$ ?	Go to step <b>5</b> .	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM.	
5	CHECK HARNESS BETWEEN ECM AND AC- CELERATOR POSITION SENSOR. 1)Connect the ECM connector. 2)Turn the ignition switch to ON. 3)Measure the voltage between accelerator position sensor connector and engine ground. Connector & terminal (B315) No. 1 (+) — Engine ground (–): 4)Shake the ECM harness and connector, while monitoring value of voltage meter.		Go to step <b>6</b> .	Repair the battery short of harness between ECM connector and accelerator posi- tion sensor con- nector.	
6	CHECK POWER SUPPLY TO ACCELERA- TOR POSITION SENSOR. 1)Measure the voltage between accelerator position sensor connector and engine ground. <i>Connector &amp; terminal</i> (B315) No. 2 (+) — Engine ground (–): 2)Shake the ECM harness and connector, while monitoring value of voltage meter.	Is the voltage less than 4.8 V?	Go to step 7.	Repair the short of harness between ECM connector and accelerator position sensor connector.	

### DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) No- Youh

			VI For	Y Eri-	_
	Step	Check	Yes	No St	Id.
7	<ul> <li>CHECK HARNESS BETWEEN ECM AND AC-CELERATOR POSITION SENSOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Connect the accelerator position sensor connector.</li> <li>3)Turn the ignition switch to ON.</li> <li>4)Measure the voltage between ECM connector and chassis ground.</li> <li>Connector &amp; terminal</li> <li>(B136) No. 16 (+) — Chassis ground (-):</li> </ul>		Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	Repair the poor contact in electric throttle connector. If problem per- sists, replace the electric throttle.	<sup>rq</sup> ios

### Bro DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) Al-

ENGINE (DIÀGNOSTICS)

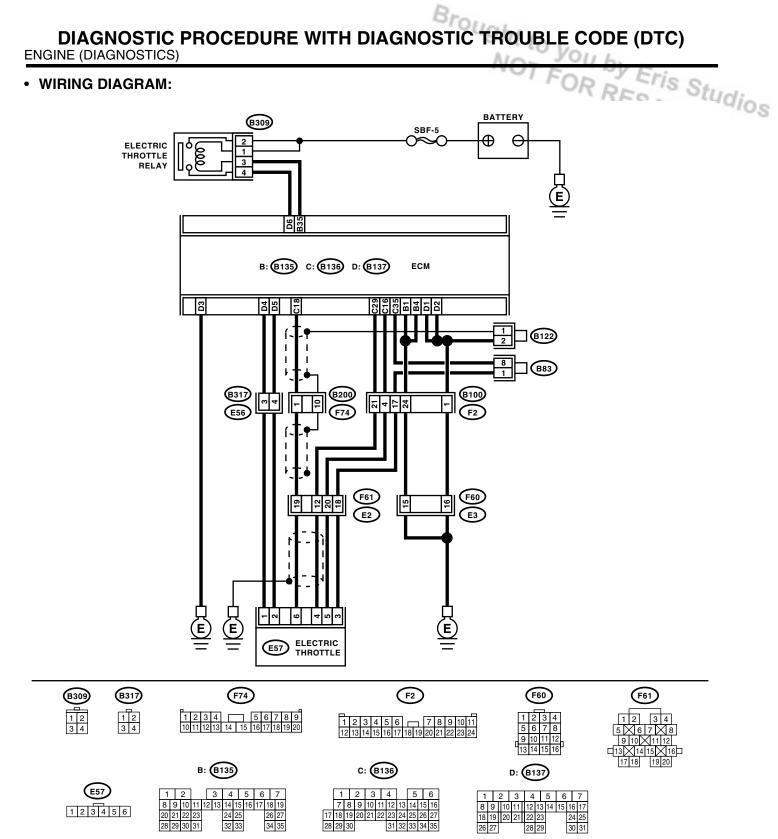
# DR:DTC P2135 — THROTTLE/PEDAL POSITION SENSOR/SWITCH "A"/"B"

### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(STi)-268, DTC P2135 THROTTLE/PEDAL POSITION SEN-</li> SOR/SWITCH "A" / "B" VOLTAGE RATIONALITY —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
  - Poor driving performance

### CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(STi)-42, OPER-ATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(STi)-35, OPERATION, Inspection Mode.>.



EN-01825

		VIED	y Eri-	-
Step	Check	Yes	PEC'No Sti	Id:
1 CHECK OUTPUT VOLTAGE OF ACCELERA- TOR POSITION SENSOR. 1)Turn the ignition switch to ON.	Is the voltage more than 0.4 V?	Go to step 2.	Go to step 4.	'YIOS
2)Measure the voltage between ECM connec- tor terminals.				
Connector & terminal (B136) No. 18 (+) — (B136) No. 35 (–):				
3)Shake the ECM harness and connector, engine harness connectors, electric throttle connector harness while monitoring value of voltage meter.				
2 CHECK OUTPUT VOLTAGE OF ACCELERA-	Is the voltage more than 0.8 V?	Go to step 3.	Go to step 4.	
TOR POSITION SENSOR. 1)Measure the voltage between ECM connec- tor terminals. <i>Connector &amp; terminal</i>				
(B136) No. 29 (+) — (B136) No. 35 (–):				
<ol> <li>Shake the ECM harness and connector, engine harness connectors, electric throttle connector harness while monitoring value of voltage meter.</li> </ol>				
3 CHECK POOR CONTACT IN CONNECTORS.	Is there any poor contact in	Repair the poor	Go to step 14.	
Check poor contact in connectors between ECM and electric throttle.	connectors between ECM and electric throttle?	contact in connec- tors.		
<ul> <li>CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from ECM.</li> <li>3)Disconnect the connector from electric throt-</li> </ul>	Is the resistance less than 1 $\Omega$ ?	Go to step <b>5</b> .	Repair the open harness connec- tor.	
tle. 4)Measure the resistance between ECM con- nector and electric throttle connector. <i>Connector &amp; terminal</i> (B136) No. 16 — (E57) No. 5:				
5 CHECK HARNESS BETWEEN ECM AND	Is the resistance more than 1 $M\Omega$ ?	Go to step 6.	Repair the ground short of harness.	
tor and chassis ground. <i>Connector &amp; terminal</i> <i>(B136) No. 18 — Chassis ground:</i> <i>(B136) No. 29 — Chassis ground:</i> <i>(B136) No. 16 — Chassis ground:</i>				
<ul> <li>6 CHECK POWER SUPPLY TO SENSOR.</li> <li>1)Connect the ECM connector.</li> <li>2)Turn the ignition switch to ON.</li> <li>3)Measure the voltage between electric throttle connector and engine ground.</li> <li>Connector &amp; terminal         <ul> <li>(E57) No. 5 (+) — Engine ground (-):</li> </ul> </li> </ul>	Is the voltage 4.5 — 5.5 V?	Go to step 7.	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM.	
4)Shake the ECM harness and connector, engine harness connectors, while monitoring value of voltage meter.				

### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL

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		VI For	Y Eria	-
Step	Check	Yes	PE No Sti	lel:
<ul> <li>CHECK SHORT OF ECM.         <ol> <li>Turn the ignition switch to OFF.</li> <li>Measure the resistance between electric throttle connector and engine ground.</li> <li>Connector &amp; terminal</li></ol></li></ul>	Is the resistance more than 10 Ω?	Go to step <b>8</b> .	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM. <ref. fu(sti)-<br="" to="">41, Engine Con- trol Module (ECM).&gt;</ref.>	1410s
<ul> <li>CHECK OUTPUT VOLTAGE OF ACCELERA TOR POSITION SENSOR.         <ol> <li>Connect all the connectors.</li> <li>Turn the ignition switch to ON.</li> <li>Read the data of main throttle sensor signals, using Subaru Select Monitors.</li> <li>Shake the ECM harness and connector, engine harness connector, electric throttle con nector harness while monitoring value of volt- age meter.</li> </ol> </li> </ul>	V?	Go to step <b>9</b> .	Go to step 11.	•
<ul> <li>9 CHECK OUTPUT VOLTAGE OF ACCELERA TOR POSITION SENSOR.</li> <li>1)Read the data of sub throttle sensor signals using Subaru Select Monitors.</li> <li>2)Shake the ECM harness and connector, engine harness connector, electric throttle con nector harness while monitoring value of volt- age meter.</li> </ul>	V? I-	Go to step 10.	Go to step 11.	
10 CHECK POOR CONTACT IN CONNECTORS Check poor contact in connectors between ECM and electric throttle.	5. Is there any poor contact in connectors between ECM and electric throttle?	Repair the poor contact in connec- tors.	Connector has returned to a nor- mal condition at this time. A tempo- rary poor contact in the connector might have been the cause.	
<ul> <li>11 CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from ECM.</li> <li>3)Disconnect the connector from electric throt tle.</li> <li>4)Measure the resistance between ECM con- nector and electric throttle connector.</li> <li>Connector &amp; terminal (B136) No. 35 — (E57) No. 3: (B136) No. 18 — (E57) No. 6: (B136) No. 29 — (E57) No. 4:</li> </ul>	Is the resistance less than 1 Ω?	Go to step 12.	Repair the open harness connec- tor.	
12 CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. 1)Connect the ECM connector. 2)Measure the resistance between electric throttle connector and engine ground. <i>Connector &amp; terminal</i> (E57) No. 3 — Engine ground:	Is the resistance less than 5 $\Omega$ ?	Go to step <b>13</b> .	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM.	

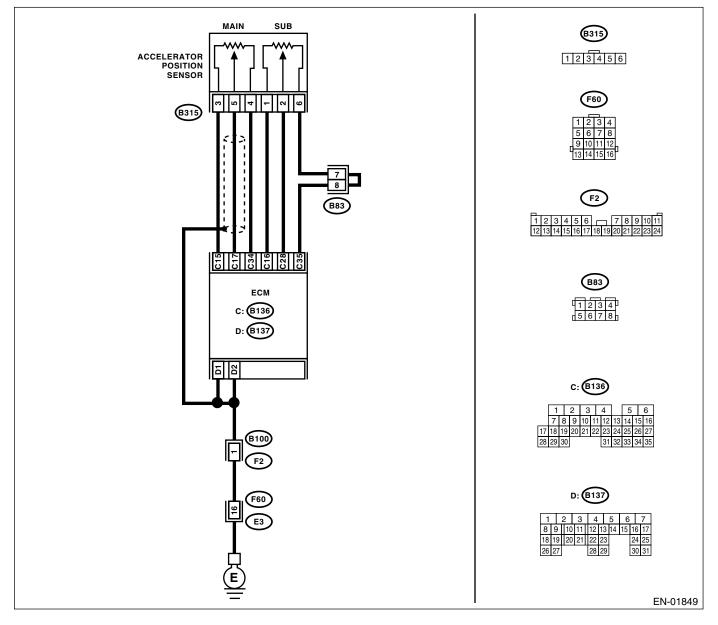
			For	J Eris o	1
	Step	Check	Yes	No St	Id:
13	<ul> <li>CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE.</li> <li>1)Connect the ECM connector.</li> <li>2)Turn the ignition switch to ON.</li> <li>3)Measure the voltage between electric throttle connector and engine ground.</li> <li>Connector &amp; terminal (E57) No. 5 (+) — Engine ground (-):</li> <li>4)Shake the ECM harness and connector, engine harness connectors, while monitoring value of voltage meter.</li> </ul>	Is the voltage more than 10 V?	Go to step 14.	Repair the battery short of harness between ECM connector and electric throttle connector.	IVIOS
14	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. 1)Measure the voltage between electric throttle connector and engine ground. <i>Connector &amp; terminal</i> (E57) No. 6 (+) — Engine ground (-): (E57) No. 4 (+) — Engine ground (-): 2)Shake the ECM harness and connector, engine harness connectors, while monitoring value of voltage meter.	Is the voltage less than 10 V?	Go to step 15.	Repair the short of harness between ECM connector and electric throt- tle connector.	
15	CHECK HARNESS BETWEEN ECM AND ELECTRIC THROTTLE. 1)Turn the ignition switch to OFF. 2)Disconnect the electric throttle connector. 3)Measure the resistance between ECM con- nectors. Connector & terminal (B136) No. 18 (+) — (B136) No. 35 (-): (B136) No. 29 (+) — (B136) No. 35 (-):	Is the resistance more than 1 MΩ?	Go to step <b>16</b> .	Repair the short of power supply sen- sor.	
16	<ul> <li>CHECK ELECTRIC THROTTLE HARNESS.</li> <li>1)Disconnect the connector from ECM.</li> <li>2)Disconnect the connector from electric throttle.</li> <li>3)Measure the resistance between electric throttle connector terminals.</li> <li>Connector &amp; terminal</li> <li>(E57) No. 6 — (E57) No. 4:</li> </ul>	Is the resistance more than 1 $M\Omega$ ?	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM.	Repair the short of harness.	

## DS:DTC P2138 — THROTTLE/PEDAL POSITION SENSOR/SWITCH "D"/"E" VOLTAGE RATIONALITY —

### • DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(STi)-270, DTC P2138 THROTTLE/PEDAL POSITION SEN-SOR/SWITCH "D" / "E" VOLTAGE RATIONALITY —, Diagnostic Trouble Code (DTC) Detecting Criteria.>
- TROUBLE SYMPTOM:
  - Erroneous idling
  - Poor driving performance

### • WIRING DIAGRAM:



			For	y Fringe	•
	Step	Check	Yes	Pro Nos Sti	Id:
1	CHECK OUTPUT VOLTAGE OF ACCELERA- TOR POSITION SENSOR. 1)Turn the ignition switch to ON. 2)Measure the voltage between ECM connec- tor terminals. <i>Connector &amp; terminal</i> (B136) No. 17 (+) — (B136) No. 34 (-):	Is the voltage more than 0.4 V?	Go to step <b>2</b> .	Go to step <b>3</b> .	'''IOS
	(B136) No. 28 (+) — (B136) No. 35 (–): 3)Shake the ECM harness and connector, accelerator position sensor connector and har- ness.				
2	CHECK POOR CONTACT IN CONNECTORS. Check poor contact in connectors between ECM and electric throttle.	Is there any poor contact in connectors between ECM and electric throttle?	Repair the poor contact in connec- tors.	Go to step 9.	
3	CHECK HARNESS BETWEEN ECM AND AC- CELERATOR POSITION SENSOR. 1)Turn the ignition switch to OFF. 2)Disconnect the connector from ECM. 3)Disconnect the connector from accelerator position sensor. 4)Measure the resistance between ECM con- nector and accelerator position sensor connec- tor. Connector & terminal (B136) No. 17 — (B315) No. 5: (B136) No. 15 — (B315) No. 3: (B136) No. 28 — (B315) No. 2: (B136) No. 16 — (B315) No. 1:	Is the resistance less than 1 Ω?	Go to step <b>4</b> .	Repair the open harness connec- tor.	
4	CHECK HARNESS BETWEEN ECM AND AC- CELERATOR POSITION SENSOR. Measure the resistance between ECM connec- tor and chassis ground. Connector & terminal (B136) No. 17 — Chassis ground: (B136) No. 15 — Chassis ground: (B136) No. 28 — Chassis ground: (B136) No. 16 — Chassis ground:	Is the resistance more than 1 MΩ?	Go to step 5.	Repair the ground short of harness.	•
5	CHECK POWER SUPPLY TO ACCELERA- TOR POSITION SENSOR. 1)Connect the ECM connector. 2)Turn the ignition switch to ON. 3)Measure the voltage between accelerator position sensor connector and engine ground. Connector & terminal (B315) No. 3 (+) — Engine ground (-): (B315) No. 1 (+) — Engine ground (-): 4)Shake the ECM harness and connector, while monitoring value of voltage meter.	Is the voltage 4.5 — 5.5 V?	Go to step <b>6</b> .	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM.	
6	CHECK ACCELERATOR POSITION SEN- SOR. Measure the resistance of accelerator position sensor. <i>Terminals</i> <i>No. 3 — No. 4:</i>	Is the resistance $1.2 - 4.8$ k $\Omega$ ?	Go to step <b>7</b> .	Replace the accel- erator position sensor.	

### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL

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Step	Check	Yes	PEO'No' Stu	el.
	Is the resistance 0.75 — 3.15 kΩ?	Go to step 8.	Replace the accel- erator position sensor.	aı
	Is the resistance 0.2 — 0.8 kΩ?	Go to step <b>9</b> .	Replace the accel- erator position sensor.	
	Is the resistance 0.15 — 0.63 kΩ?	Go to step 10.	Replace the accel- erator position sensor.	
	Is the resistance 0.5 — 2.5 kΩ?	Go to step 11.	Replace the accel- erator position sensor.	
	Is the resistance 0.28 — 1.68 kΩ?	Go to step <b>12</b> .	Replace the accel- erator position sensor.	
<ul> <li>12 CHECK OUTPUT VOLTAGE OF ACCELERA- TOR POSITION SENSOR.         <ol> <li>Turn the ignition switch to OFF.</li> <li>Connect all the connectors.</li> <li>Turn the ignition switch to ON.</li> <li>Read the data of main accelerator position sensor signals and sub accelerator position sensor signals, using Subaru Select Monitor.</li> <li>Shake the ECM harness and connector, engine harness connector, accelerator position sensor connector harness while monitoring value of voltage meter.</li> </ol> </li> </ul>	Is the voltage less than 4.8 V?	Go to step 13.	Go to step 14.	
13 CHECK POOR CONTACT IN CONNECTORS. Check poor contact in connectors between	Is there any poor contact in connectors between ECM and electric throttle?	Repair the poor contact in connectors.	Go to step <b>19.</b>	

	Step	Check	Yes	No	
14	CHECK HARNESS BETWEEN ECM AND AC-		Go to step 15.	Repair the open	0
	<ul> <li>CELERATOR POSITION SENSOR.</li> <li>1)Turn the ignition switch to OFF.</li> <li>2)Disconnect the connector from ECM.</li> <li>3)Disconnect the connector from accelerator position sensor.</li> <li>4)Measure the resistance between ECM connector and accelerator position sensor connector.</li> <li>Connector &amp; terminal     <ul> <li>(B136) No. 34 — (B315) No. 4:</li> <li>(B136) No. 35 — (B315) No. 6:</li> </ul> </li> </ul>	Ω?		harness connec- tor.	0
15	CHECK HARNESS BETWEEN ECM AND AC- CELERATOR POSITION SENSOR. 1)Connect the ECM connector. 2)Measure the resistance between accelera- tor position sensor and engine ground. <i>Connector &amp; terminal</i> (B315) No. 4 — Engine ground: (B315) No. 6 — Engine ground:	Ω?	Go to step <b>16</b> .	Repair the poor contact in ECM connector. If prob- lem persists, replace the ECM.	
16	CHECK HARNESS BETWEEN ECM AND AC- CELERATOR POSITION SENSOR. 1)Connect the ECM connector. 2)Turn the ignition switch to ON. 3)Measure the voltage between accelerator position sensor and engine ground. Connector & terminal (B315) No. 3 (+) — Engine ground (-): (B315) No. 1 (+) — Engine ground (-): 4)Shake the ECM harness and connector, while monitoring value of voltage meter.	Is the voltage less than 6 V?	Go to step 17.	Repair the battery short of harness between ECM connector and accelerator posi- tion sensor.	
17	CHECK POWER SUPPLY TO ACCELERA- TOR POSITION SENSOR. 1)Measure the voltage between accelerator position sensor connector and engine ground. <i>Connector &amp; terminal</i> (B315) No. 5 (+) — Engine ground (–): (B315) No. 2 (+) — Engine ground (–): 2)Shake the ECM harness and connector, while monitoring value of voltage meter.	Is the voltage less than 4.8 V?	Go to step 18.	Repair the short of harness between ECM connector and accelerator position sensor connector.	
18	<ul> <li>CHECK HARNESS BETWEEN ECM AND AC-CELERATOR POSITION SENSOR.</li> <li>1) Turn the ignition switch to OFF.</li> <li>2) Connect the accelerator position sensor connector.</li> <li>3) Turn the ignition switch to ON.</li> <li>4) Measure the voltage between ECM connector and chassis ground.</li> <li>Connector &amp; terminal         <ul> <li>(B136) No. 17 (+) — Chassis ground (-):</li> <li>(B136) No. 28 (+) — Chassis ground (-):</li> </ul> </li> </ul>		Go to step <b>19</b> .	Repair the poor contact in acceler- ator position sen- sor connector. If problem persists, replace the accel- erator position sensor.	

### Brou DIAGNOSTIC PROCEDURE WITH DIAGNOSTIC TROUBLE CODE (DTC) YOUL

ENGINE (DIAGNOSTICS)

	Step	Check	Yes	No	
	•			SEO NO SIL	Id:
19	CHECK HARNESS BETWEEN ECM AND AC-	Is the resistance less than 1 $M\Omega$ ?	Repair the poor	Repair the short of	4103
	CELERATOR POSITION SENSOR. 1)Turn the ignition switch to OFF.	10152?	contact in ECM connector. If prob-	harness between accelerator posi-	
	2)Disconnect the connector from ECM.		lem persists,	tion sensor con-	
	3)Disconnect the connector from accelerator		replace the ECM.	nector and	
	position sensor.			accelerator posi-	
	4)Measure the resistance between terminals of			tion sensor con-	
	accelerator position sensor connector. Connector & terminal			nector.	
	(B315) No. 5 — (B315) No. 2:				

No

ENGINE (DIAGNOSTICS)

### **19.General Diagnostic Table** A: INSPECTION

### 1. ENGINE

### NOTE:

Malfunction of parts other than those listed is also possible. <Ref. to ME(STi)-94, Engine Trouble in General.>

Symptom	Problem parts
	1) Electric throttle
	2) Manifold absolute pressure sensor
	3) Mass air flow and intake temperature sensor
	4) Ignition parts (*1)
1. Engine stalls during idling.	5) Engine coolant temperature sensor (*2)
	6) Crankshaft position sensor (*3)
	7) Camshaft position sensor (*3)
	8) Fuel injection parts (*4)
	1) Electric throttle
	2) Manifold absolute pressure sensor
	3) Mass air flow and intake temperature sensor
	4) Engine coolant temperature sensor (*2)
	5) Ignition parts (*1)
2. Rough idling	6) Air intake system (*5)
	7) Fuel injection parts (*4)
	8) Crankshaft position sensor (*3)
	9) Camshaft position sensor (*3)
	10) Oxygen sensor
	11) Fuel pump and fuel pump relay
	1) Electric throttle
	2) Engine coolant temperature sensor
3. Engine does not return to idle.	3) Manifold absolute pressure sensor
	4) Mass air flow sensor
	1) Manifold absolute pressure sensor
	2) Mass air flow and intake temperature sensor
	3) Electric throttle
	4) Fuel injection parts (*4)
	5) Fuel pump and fuel pump relay
4. Poor acceleration	6) Engine coolant temperature sensor (*2)
	7) Crankshaft position sensor (*3)
	8) Camshaft position sensor (*3)
	9) A/C switch and A/C cut relay
	10) Engine torque control signal circuit
	11) Ignition parts (*1)
	1) Manifold absolute pressure sensor
	2) Mass air flow and intake temperature sensor
	3) Engine coolant temperature sensor (*2)
5. Engine stalls or engine sags or hesitates at	4) Crankshaft position sensor (*3)
acceleration.	5) Camshaft position sensor (*3)
	6) Purge control solenoid valve
	7) Fuel injection parts (*4)
	8) Fuel pump and fuel pump relay
	1) Manifold absolute pressure sensor
	2) Mass air flow and intake temperature sensor
	3) Engine coolant temperature sensor (*2)
	4) Crankshaft position sensor (*3)
6. Surge	5) Camshaft position sensor (*3)
	6) Fuel injection parts (*4)
	7) Throttle position sensor
	8) Fuel pump and fuel pump relay

### EN(STi)-359

# GENERAL DIAGNOSTIC TABLE

#### ENGINE (DIAGNOSTICS)

	FOD Stis of
Symptom	Problem parts
7. Spark knock	<ol> <li>1) Manifold absolute pressure sensor</li> <li>2) Mass air flow and intake temperature sensor</li> <li>3) Engine coolant temperature sensor</li> <li>4) Knock sensor</li> <li>5) Fuel injection parts (*4)</li> <li>6) Fuel pump and fuel pump relay</li> </ol>
8. After-burning in exhaust system	<ol> <li>Manifold absolute pressure sensor</li> <li>Mass air flow and intake temperature sensor</li> <li>Engine coolant temperature sensor (*2)</li> <li>Fuel injection parts (*4)</li> <li>Fuel pump and fuel pump relay</li> </ol>

\*1: Check ignition coil & ignitor ASSY and spark plug.

\*2: Indicate the symptom occurring only in cold temperatures.

\*3: Ensure the secure installation.

\*4: Check fuel injector, fuel pressure regulator and fuel filter.

\*5: Inspect air leak in air intake system.