A: DTC P0011 INTAKE CAMSHAFT POSITION - TIMING OVER-ADVANCED OR SYSTEM PERFORMANCE (BANK 1)

DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-9, DTC P0011 INTAKE CAMSHAFT POSITION - TIMING OVER-ADVANCED OR SYSTEM PERFORMANCE (BANK 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Engine stalls.
- Erroneous idling

CAUTION:

Step	Check	Yes	No
1 CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
2) Measure the AVCS system operating angle		Check the follow- ing item and repair or replace if nec- essary.	A temporary mal- function. Perform the following, and clean the oil rout- ing. Replace the engine oil and idle the engine for 5 minutes, and then replace the oil filter and engine oil.

B: DTC P0016 CRANKSHAFT POSITION - CAMSHAFT POSITION CORRELATION (BANK1)

DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-11, DTC P0016 CRANKSHAFT POSITION - CAMSHAFT POSITION CORRELATION (BANK1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Engine stalls.
- Erroneous idling

CAUTION:

Step	Check	Yes	No
1 CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
 2 CHECK CURRENT DATA. Start the engine and let it idle. Measure the AVCS system operating angle and oil flow control solenoid valve duty output using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 		Check the follow- ing item and repair or replace if nec- essary.	A temporary mal- function. Perform the following, and clean the oil rout- ing. Replace the engine oil and idle the engine for 5 minutes, and then replace the oil filter and engine oil.

C: DTC P0018 CRANKSHAFT POSITION - CAMSHAFT POSITION CORRELATION (BANK2)

DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

GENERAL DESCRIPTION <Ref. to GD(H6DO)-12, DTC P0018 CRANKSHAFT POSITION - CAMSHAFT POSITION CORRELATION (BANK2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Engine stalls.
- Erroneous idling

CAUTION:

Step	Check	Yes	No
1 CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
 Start the engine and let it idle. Check the AVCS system operating angle 	Is the AVCS system operating angle approx. 0 deg., and oil flow control solenoid valve duty output approx. 10%?	Check the follow- ing item and repair or replace if nec- essary.	A temporary mal- function. Perform the following, and clean the oil rout- ing. Replace the engine oil and idle the engine for 5 minutes, and then replace the oil filter and engine oil.

D: DTC P0021 INTAKE CAMSHAFT POSITION - TIMING OVER-ADVANCED OR SYSTEM PERFORMANCE (BANK 2)

DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-12, DTC P0021 INTAKE CAMSHAFT POSITION - TIM-ING OVER-ADVANCED OR SYSTEM PERFORMANCE (BANK 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Engine stalls.
- Erroneous idling

CAUTION:

	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
2	 CHECK CURRENT DATA. 1) Start the engine and let it idle. 2) Check the AVCS system operating angle and oil flow control solenoid valve duty output using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	Is the AVCS system operating angle approx. 0 deg., and oil flow control solenoid valve duty output approx. 10%?	Check the follow-	A temporary mal- function. Perform the following, and clean the oil rout- ing. Replace the engine oil and idle the engine for 5 minutes, and then replace the oil filter and engine oil.

E: DTC P0026 INTAKE VALVE CONTROL SOLENOID CIRCUIT RANGE/PER-FORMANCE (BANK 1)

DTC DETECTING CONDITION:

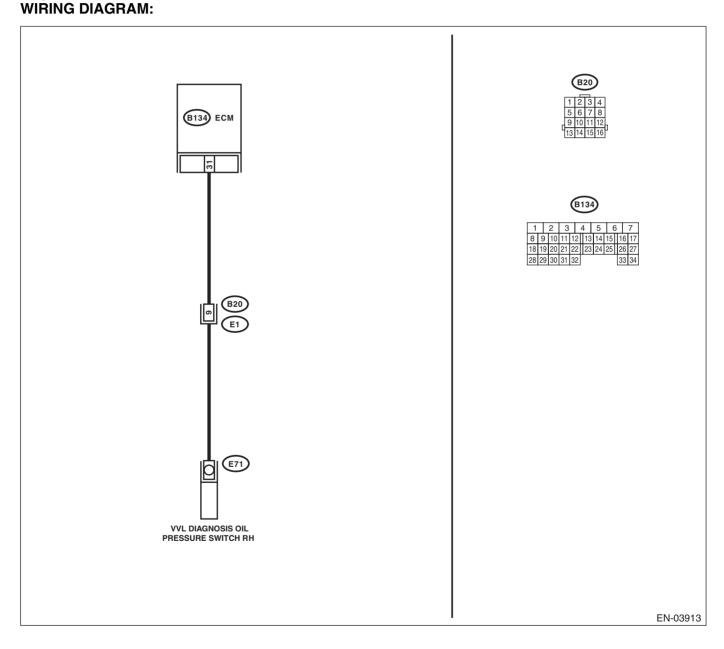
• Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-13, DTC P0026 INTAKE VALVE CONTROL SOLENOID CIRCUIT RANGE/PERFORMANCE (BANK 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Erroneous idling

CAUTION:



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
2	 CHECK HARNESS BETWEEN ECM AND VARIABLE VALVE LIFT DIAGNOSIS OIL PRESSURE SWITCH CONNECTOR. 1) Warm-up the engine. 2) Turn the ignition switch to OFF. 3) Disconnect the connectors from ECM and variable valve lift diagnosis oil pressure switch connector. 4) Measure the resistance of harness between variable valve lift diagnosis oil pres- sure switch connector and engine ground. <i>Connector & terminal</i> (E71) No. 1 — Engine ground: 	Is the resistance more than 1 MΩ?	Go to step 3.	Repair the ground short circuit of har- ness between ECM and variable valve lift diagnosis oil pressure switch connector.
3	CHECK HARNESS BETWEEN ECM AND VARIABLE VALVE LIFT DIAGNOSIS OIL PRESSURE SWITCH CONNECTOR. Measure the resistance of harness between ECM and variable valve lift diagnosis oil pres- sure switch connector. Connector & terminal (B134) No. 31 — (E71) No. 1:	Is the resistance less than 1 Ω?	Replace the vari- able valve lift diag- nosis oil pressure switch. <ref. to<br="">FU(H6DO)-27, Variable Valve Lift Diagnosis Oil Pressure Switch.> Go to step 4.</ref.>	Repair the open circuit of harness between ECM and variable valve lift diagnosis oil pres- sure switch con- nector.
4	 CHECK DTC. 1) Erase the memory. Go to step 5. 2) After idling the engine, check the DTC. 	Is DTC displayed?	Replace the oil switching solenoid valve. <ref. to<br="">ME(H6DO)-78, Oil Switching Sole- noid Valve.> Go to step 5.</ref.>	END
5	CHECK DTC. 1) Erase the memory. <ref. to<br="">EN(H6DO)(diag)-45, Clear Memory Mode.> 2) After idling the engine, check the DTC.</ref.>	Is DTC displayed?	Check for oil rout- ing. Contact with SOA Service Center.	END

F: DTC P0028 INTAKE VALVE CONTROL SOLENOID CIRCUIT RANGE/PER-FORMANCE (BANK 2)

DTC DETECTING CONDITION:

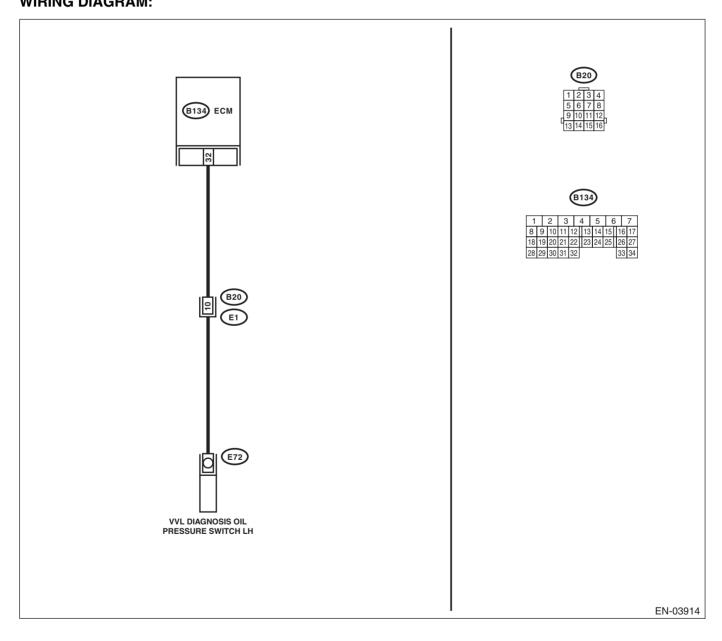
• Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-15, DTC P0028 INTAKE VALVE CONTROL SOLENOID CIRCUIT RANGE/PERFORMANCE (BANK 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Erroneous idling

CAUTION:



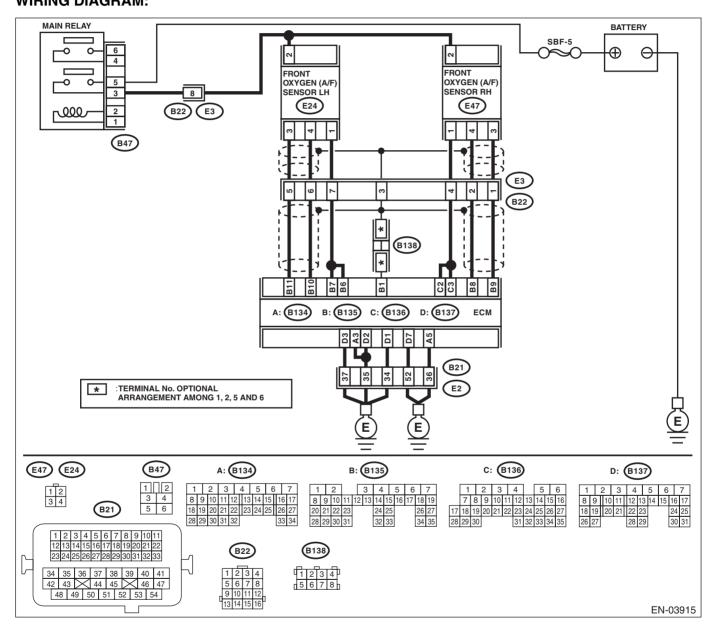
	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
2	 CHECK HARNESS BETWEEN ECM AND VARIABLE VALVE LIFT DIAGNOSIS OIL PRESSURE SWITCH CONNECTOR. 1) Warm-up the engine. 2) Turn the ignition switch to OFF. 3) Disconnect the connectors from ECM and variable valve lift diagnosis oil pressure switch connector. 4) Measure the resistance of harness between variable valve lift diagnosis oil pres- sure switch connector and engine ground. <i>Connector & terminal</i> (E72) No. 1 — Engine ground: 	Is the resistance more than 1 MΩ?	Go to step 3 .	Repair the ground short circuit of har- ness between ECM and variable valve lift diagnosis oil pressure switch connector.
3	CHECK HARNESS BETWEEN ECM AND VARIABLE VALVE LIFT DIAGNOSIS OIL PRESSURE SWITCH CONNECTOR. Measure the resistance of harness between ECM and variable valve lift diagnosis oil pres- sure switch connector. Connector & terminal (B134) No. 32 — (E72) No. 1:	Is the resistance less than 1 Ω ?	Replace the vari- able valve lift diag- nosis oil pressure switch. <ref. to<br="">FU(H6DO)-27, Variable Valve Lift Diagnosis Oil Pressure Switch.> Go to step 4.</ref.>	Repair the open circuit of harness between ECM and variable valve lift diagnosis oil pres- sure switch con- nector.
4	 CHECK DTC. 1) Erase the memory. <ref. clear="" en(h6do)(diag)-45,="" memory="" mode.="" to=""></ref.> 2) After idling the engine, check the DTC. 	Is DTC displayed?	Replace the oil switching solenoid valve. <ref. to<br="">ME(H6DO)-78, Oil Switching Sole- noid Valve.> Go to step 5.</ref.>	END
5	CHECK DTC. 1) Erase the memory. <ref. to<br="">EN(H6DO)(diag)-45, Clear Memory Mode.> 2) After idling the engine, check the DTC.</ref.>	Is DTC displayed?	Check for oil rout- ing. Contact with SOA Service Center.	END

G: DTC P0030 HO2S HEATER CONTROL CIRCUIT (BANK 1 SENSOR 1) DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-16, DTC P0030 HO2S HEATER CONTROL CIRCUIT (BANK 1 SENSOR 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:



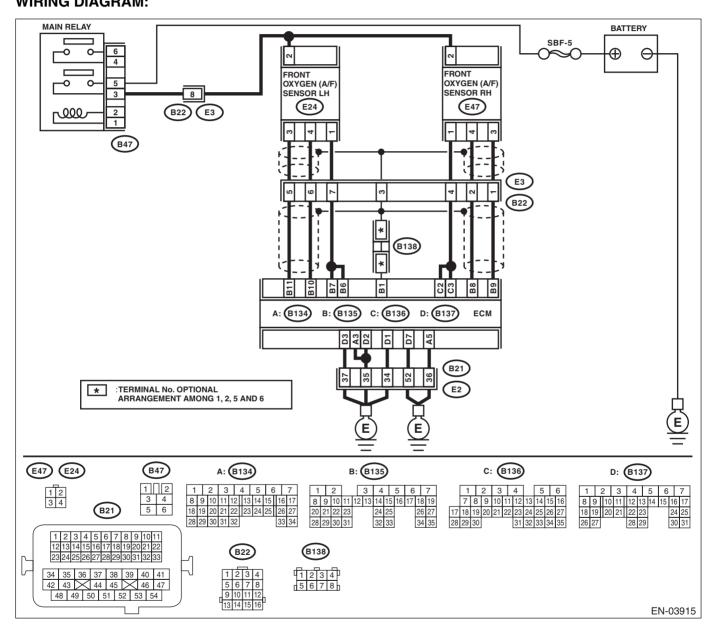
	Step	Check	Yes	No
1	 CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC- TOR. 1) Start and warm-up engine. 2) Turn the ignition switch to OFF. 3) Disconnect the connectors from ECM and front oxygen (A/F) sensor. 4) Measure the resistance of harness between ECM and front oxygen (A/F) sensor connector. Connector & terminal (B136) No. 2 — (E47) No. 1: (B136) No. 3 — (E47) No. 1: 	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit of harness between ECM and front oxygen (A/F) sensor connector.
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. Connector & terminal (B135) No. 8 — (E47) No. 4: (B135) No. 9 — (E47) No. 3:	Is the resistance less than 1 Ω ?	Go to step 3 .	Repair the open circuit of harness between ECM and front oxygen (A/F) sensor connector.
3	CHECK HARNESS BETWEEN MAIN RELAY AND FRONT OXYGEN (A/F) SENSOR CON- NECTOR. Measure the resistance of harness between main relay and front oxygen (A/F) sensor con- nector. Connector & terminal (E47) No. 3 — (E47) No. 2:	Is the resistance less than 1 Ω ?	Go to step 4.	Repair the open circuit of harness between main relay and front oxygen (A/F) sen- sor connector.
4	CHECK FRONT OXYGEN (A/F) SENSOR. Measure the resistance between front oxygen (A/F) sensor connector terminals. Terminals No. 2 — No. 1:	Is the resistance less than 5 Ω ?	Go to step 5.	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(H6DO)-29, Front Oxygen (A/ F) Sensor.></ref.>
5	CHECK POOR CONTACT. Check the poor contact of ECM and front oxy- gen (A/F) sensor connector.	Is there poor contact in ECM or front oxygen (A/F) sensor con- nector?	Repair the poor contact of ECM and front oxygen (A/F) sensor con- nector.	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(H6DO)-29, Front Oxygen (A/ F) Sensor.></ref.>

H: DTC P0031 HO2S HEATER CONTROL CIRCUIT LOW (BANK 1 SENSOR 1) DTC DETECTING CONDITION:

• Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-18, DTC P0031 HO2S HEATER CONTROL CIRCUIT LOW (BANK 1 SENSOR 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:



ENGINE (DIAGNOSTICS)

	Step	Check	Yes	No
1	CHECK POWER SUPPLY TO FRONT OXY-	Is the voltage more than 10 V?	Go to step 2.	Repair the power
	GEN (A/F) SENSOR.	_		supply line.
	 Turn the ignition switch to OFF. 			NOTE:
	2) Disconnect the connector from front oxygen			In this case, repair
	(A/F) sensor.			the following item:
	3) Turn the ignition switch to ON.			Open circuit in
	4) Measure the voltage between front oxygen			harness between
	(A/F) sensor connector and engine ground.			main relay and
	Connector & terminal (E47) No. 2 (+) — Engine ground (–):			front oxygen (A/F)
	(E47) NO. 2 (+) — Eligine ground (-).			sensor connectorPoor contact in
				main relay connec-
				tor
				Poor contact in
				coupling connector
				Malfunction in
				main relay
2	CHECK GROUND CIRCUIT FOR ECM.	Is the resistance less than 5	Go to step 3.	Repair the har-
	Measure the resistance of harness between	Ω?		ness and connec-
	ECM connector and chassis ground.			tor.
	Connector & terminal			NOTE:
	(B134) No. 3 — Chassis ground:			In this case, repair
	(B134) No. 5 — Chassis ground:			the following item:
	(B137) No. 1 — Chassis ground: (B137) No. 2 — Chassis ground:			Open circuit in
	(B137) No. 2 — Chassis ground: (B137) No. 3 — Chassis ground:			harness between
	(B137) No. 7 — Chassis ground: (B137) No. 7 — Chassis ground:			ECM and engine ground terminal
				 Poor contact in
				ECM connector
				 Poor contact in
				coupling connector
3	CHECK CURRENT DATA.	Is the current more than 0.2 A?	Repair the poor	Go to step 4.
	1) Start the engine.		contact of connec-	
	2) Read the data of the front oxygen (A/F)		tor.	
	sensor heater current using the Subaru Select		NOTE:	
	Monitor or general scan tool.		In this case, repair	
	NOTE:		the following item:	
	 Subaru Select Monitor For detailed operation procedure, refer to 		 Poor contact in front oxygen (A/F) 	
	"READ CURRENT DATA FOR ENGINE". <ref.< td=""><td></td><td>sensor connector</td><td></td></ref.<>		sensor connector	
	to EN(H6DO)(diag)-27, Subaru Select Moni-		 Poor contact in 	
	tor.>		coupling connector	
	General scan tool		 Poor contact in 	
	For detailed operation procedures, refer to the		ECM connector	
	"General Scan Tool Instruction Manual".			
4	CHECK OUTPUT SIGNAL OF ECM.	Is the voltage less than 1 V?	Go to step 6.	Go to step 5.
	1) Start and idle the engine.			
	2) Measure the voltage between ECM con-			
	nector and chassis ground.			
	Connector & terminal (B136) No. 2 (+) — Chassis ground (–):			
	(B136) No. 2 (+) — Chassis ground (–): (B136) No. 3 (+) — Chassis ground (–):			
5	CHECK OUTPUT SIGNAL OF ECM.	Does the voltage change by	Repair the poor	Go to step 6.
Ĭ	Measure the voltage between ECM connector	shaking the ECM harness and	contact of ECM	
	and chassis ground.	connector while monitoring the	connector.	
	Connector & terminal	value of voltage meter?		
	(B136) No. 2 (+) — Chassis ground (–):			
	(B136) No. 3 (+) — Chassis ground (–):	1	1	

EN(H6DO)(diag)-89

Step	Check	Yes	No
6 CHECK FRONT OXYGEN (A/F) SENSOR. 1) Turn the ignition switch to OFF. 2) Measure the resistance between front oxy- gen (A/F) sensor connector terminals. <i>Terminals</i> <i>No. 2 — No. 1:</i>	Is the resistance less than 10 Ω ?	Repair the har- ness and connec- tor. NOTE: In this case, repair	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(H6DO)-29, Front Oxygen (A/F) Sensor.></ref.>

I: DTC P0032 HO2S HEATER CONTROL CIRCUIT HIGH (BANK 1 SENSOR 1) DTC DETECTING CONDITION:

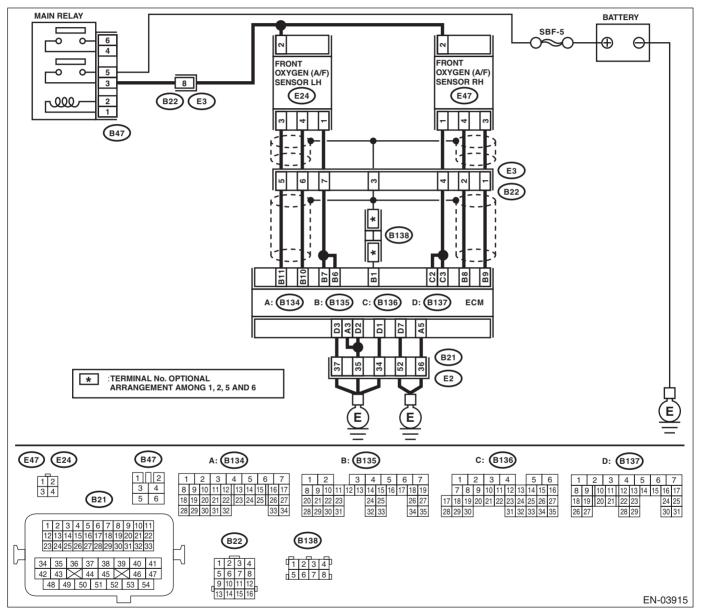
Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-20, 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, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	 CHECK OUTPUT SIGNAL OF ECM. 1) Turn the ignition switch to ON. 2) Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 2 (+) — Chassis ground (-): (B136) No. 3 (+) — Chassis ground (-): 	Is the voltage more than 8 V?	Go to step 2 .	Go to step 3.
2	 CHECK FRONT OXYGEN (A/F) SENSOR HEATER CURRENT. 1) Turn the ignition switch to OFF. 2) Repair the battery short circuit of harness between ECM and front oxygen (A/F) sensor connector. 3) Turn the ignition switch to ON. 4) Read the data of the front oxygen (A/F) sensor heater current using the Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	Is the current more than 2.3 A?	Replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>	END
3	CHECK OUTPUT SIGNAL OF ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 2 (+) — Chassis ground (–): (B136) No. 3 (+) — Chassis ground (–):	Does the voltage change by shaking the ECM harness and connector?	Repair the battery short circuit of har- ness between ECM and front oxygen (A/F) sen- sor connector.	END

J: DTC P0037 HO2S HEATER CONTROL CIRCUIT LOW (BANK 1 SENSOR 2) DTC DETECTING CONDITION:

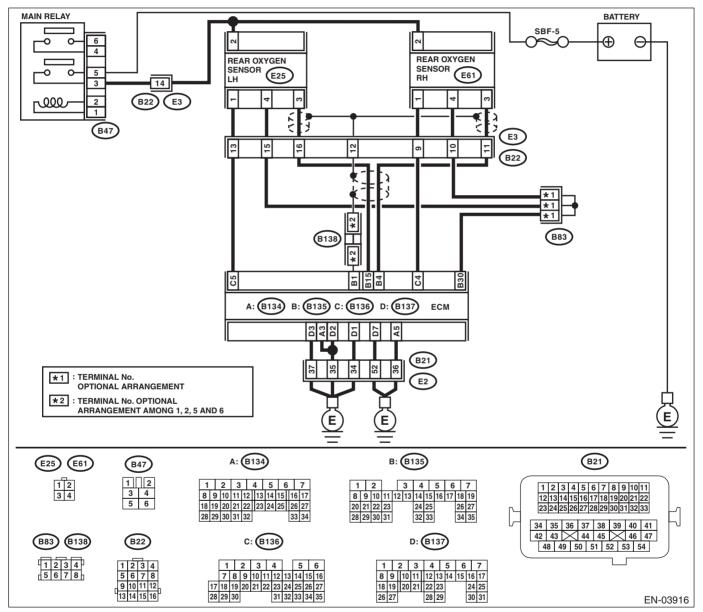
• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-22, DTC P0037 HO2S HEATER CONTROL CIRCUIT LOW (BANK 1 SENSOR 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	Step CHECK POWER SUPPLY TO REAR OXY-GEN SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the rear oxygen sensor. 3) Turn the ignition switch to ON. 4) Measure the voltage between rear oxygen sensor connector and chassis ground. Connector & terminal (E61) No. 2 (+) — Chassis ground (-):	Check Is the voltage more than 10 V?		No Repair the power supply line. NOTE: In this case, repair the following item: • Open circuit in harness between main relay and rear oxygen sen- sor connector • Poor contact in main relay connec- tor • Poor contact in coupling connector • Malfunction in main relay
2	 CHECK GROUND CIRCUIT FOR ECM. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Measure the resistance of harness between ECM connector and chassis ground. <i>Connector & terminal</i> (B134) No. 3 — Chassis ground: (B137) No. 1 — Chassis ground: (B137) No. 2 — Chassis ground: (B137) No. 3 — Chassis ground: (B137) 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 item: • Open circuit in harness between ECM and engine ground terminal • Poor contact in ECM connector • Poor contact in coupling connector
3	 CHECK CURRENT DATA. 1) Start the engine. 2) Read the data of rear oxygen sensor heater current using the Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	Is the current more than 0.2 A?	nector. NOTE: In this case, repair the following item: • Poor contact of the rear oxygen sensor connector • Poor contact in coupling connector • Poor contact in ECM connector	Go to step 4.
5	 CHECK OUTPUT SIGNAL OF ECM. 1) Start and idle the engine. 2) Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 4 (+) — Chassis ground (-): CHECK OUTPUT SIGNAL OF ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 4 (+) — Chassis ground (-): 	Is the voltage less than 1 V? Does the voltage change by shaking the ECM harness and connector while monitoring the value of voltage meter?	Go to step 7 . Repair the poor contact of ECM connector.	Go to step 5 . Go to step 6 .

	Step	Check	Yes	No
6	 CHECK OUTPUT SIGNAL OF ECM. 1) Disconnect the connector from the rear oxygen sensor. 2) Measure the voltage between ECM connector and chassis ground. <i>Connector & terminal</i> (B136) No. 4 (+) — Chassis ground (-): 	Is the voltage less than 1 V?	Replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>	Repair the battery short circuit of har- ness between ECM and rear oxy- gen sensor con- nector. After repair, replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>
7	 CHECK REAR OXYGEN SENSOR. 1) Turn the ignition switch to OFF. 2) Measure the resistance between the rear oxygen sensor connector terminals. <i>Terminals</i> No. 1 — No. 2: 	Is the resistance less than 30 Ω ?	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit in harness between rear oxygen sen- sor and ECM con- nector • Poor contact of the rear oxygen sensor connector • Poor contact in ECM connector • Poor contact in coupling connector	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31,</ref.>

K: DTC P0038 HO2S HEATER CONTROL CIRCUIT HIGH (BANK 1 SENSOR 2) DTC DETECTING CONDITION:

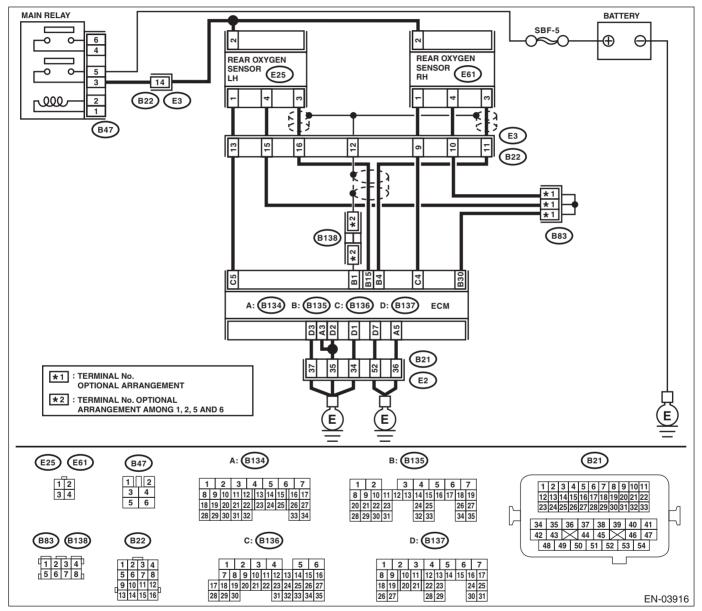
• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-24, DTC P0038 HO2S HEATER CONTROL CIRCUIT HIGH (BANK 1 SENSOR 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



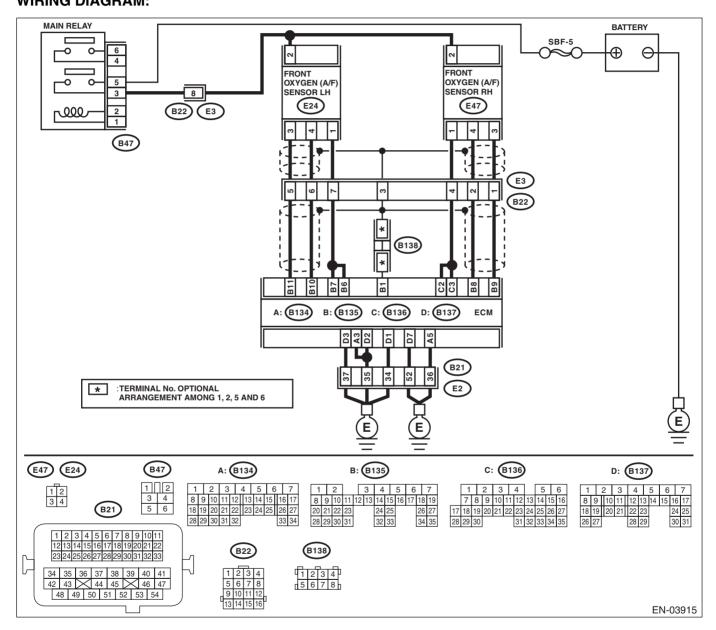
	Step	Check	Yes	No
1	CHECK INPUT SIGNAL OF ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 4 (+) — Chassis ground (–):	Is the voltage more than 8 V?	Go to step 2.	Go to step 3.
2	 CHECK CURRENT DATA. 1) Turn the ignition switch to OFF. 2) Repair the battery short circuit of harness between ECM and rear oxygen sensor connector. 3) Turn the ignition switch to ON. 4) Read the data of rear oxygen sensor heater current using the Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 		Replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>	END
3	CHECK POOR CONTACT. Check the poor contact of ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact of ECM connector.	END

L: DTC P0050 HO2S HEATER CONTROL CIRCUIT (BANK 2 SENSOR 1) DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-26, DTC P0050 HO2S HEATER CONTROL CIRCUIT (BANK 2 SENSOR 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:



	Step	Check	Yes	No
1	 CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC- TOR. 1) Start and warm-up engine. 2) Turn the ignition switch to OFF. 3) Disconnect the connectors from ECM and front oxygen (A/F) sensor. 4) Measure the resistance of harness between ECM and front oxygen (A/F) sensor connector. Connector & terminal (B135) No. 6 — (E24) No. 1: (B135) No. 7 — (E24) No. 1: 	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit of harness between ECM and front oxygen (A/F) sensor connector.
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. Connector & terminal (B135) No. 10 — (E24) No. 4: (B135) No. 11 — (E24) No. 3:	Is the resistance less than 1 Ω ?	Go to step 3.	Repair the open circuit of harness between ECM and front oxygen (A/F) sensor connector.
3	CHECK HARNESS BETWEEN MAIN RELAY AND FRONT OXYGEN (A/F) SENSOR CON- NECTOR. Measure the resistance of harness between main relay and front oxygen (A/F) sensor con- nector. Connector & terminal (B47) No. 3 — (E24) No. 2:	Is the resistance less than 1 Ω ?	Go to step 4.	Repair the open circuit of harness between main relay and front oxygen (A/F) sen- sor connector.
4	CHECK FRONT OXYGEN (A/F) SENSOR. Measure the resistance between front oxygen (A/F) sensor connector terminals. Terminals No. 2 — No. 1:	Is the resistance less than 5 Ω ?	Go to step 5.	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(H6DO)-29, Front Oxygen (A/F) Sensor.></ref.>
5	CHECK POOR CONTACT. Check the poor contact of ECM and front oxy- gen (A/F) sensor connector.	Is there poor contact in ECM or front oxygen (A/F) sensor con- nector?	Repair the poor contact of ECM and front oxygen (A/F) sensor con- nector.	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(H6DO)-29, Front Oxygen (A/F) Sensor.></ref.>

M: DTC P0051 HO2S HEATER CONTROL CIRCUIT LOW (BANK 2 SENSOR 1) DTC DETECTING CONDITION:

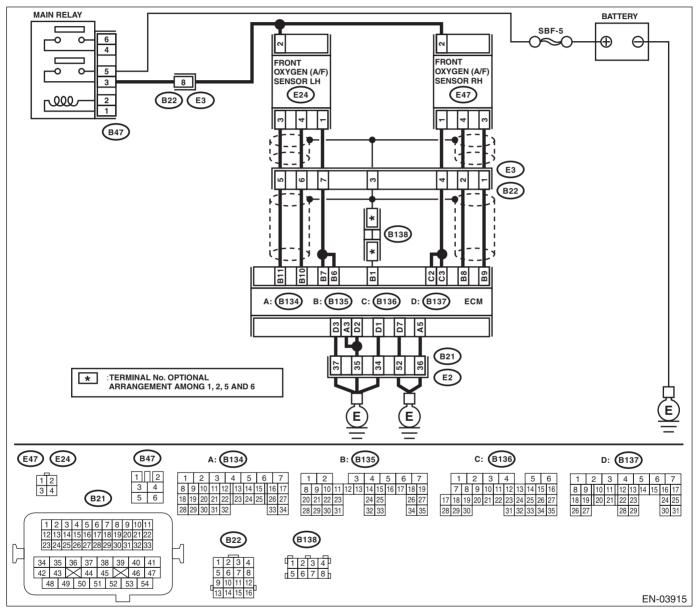
• Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-26, DTC P0051 HO2S HEATER CONTROL CIRCUIT LOW (BANK 2 SENSOR 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



1 CHECK POWER SUPPLY TO FRONT OXY- Get A(AF) SENSOR. is the voltage more than 10 V? Go to step 2. Repair the powe supply line. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from front oxygen (AF) sensor connector and engine ground. In this case, rep the following lite OPTE: In this case, rep the following lite 3) Turn the ignition switch to ON. Is the resistance of harness between (AF) sensor connector and engine ground (-): Sensor connector and engine ground (-): Poor contact connector & terminal 2 CHECK GROUND CIRCUIT FOR ECM Measure the resistance of harness between ECM connector and chassis ground: (B131) No. 3 — Chassis ground: (B137) No. 2 — Chassis ground: (B137) No. 3 — Chassis ground: (B137) No. 3 — Chassis ground: (B137) No. 7 — Chassis ground: (Chasse repair the following lite: • Subaru Select Monitor For detailed operation procedure, refer to The Councet Noritor • Poor contact in front oxygen (AF) sensor connector • Poor contact in front oxygen (AF) sensor contact in front oxygen (AF) sensor contact in front oxygen (AF) sensor contact in front oxygen (AF) Start and idle the engine. •		Step	Check	Yes	No
 1) Turn the ignition switch to OFF. 2) Disconnect the connector from from toxygen (A/F) sensor. 3) Turn the ignition switch to ON. 4) Measure the voltage between front oxygen (A/F) sensor connector and engine ground. Connector & terminal (E24) No. 2 (+) — Engine ground (-): CHECK GROUND CIRCUIT FOR ECM. Measure the voltage between forto axygen (A/F) sensor connector and chassis ground: CHECK CURRENT DATA. 1) Start the engine. 3) CHECK CURRENT DATA. 1) Start the engine. 3) Monitor or general scan tool For detailed operation procedures, refer to TREA CURRENT DATA FOR ENGINE". «Field to the portor of the following item: the following item: the following item: the following item: the voltage between ECM connector tor. CHECK OUTPUT SIGNAL OF ECM. 1) Start and idle the engine. 2) Measure the voltage between ECM connector the moder. 3) Start and Idle the engine. 4) CHECK OUTPUT SIGNAL OF ECM. 1) Start and idle the engine. 3) Mon 6 (+) — Chassis ground (-): 	1	CHECK POWER SUPPLY TO FRONT OXY-			Repair the power
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 (A/F) sensor. 3) Turn the ignition switch to ON. 4) Measure the voltage between front oxygen (A/F) sensor connector at terminal (B137) No. 2 (+) — Engine ground (-): CHECK GROUND CIRCUIT FOR ECM. Measure the resistance of harness between ECM connector & terminal (B137) No. 5 — Chassis ground: (B137) No. 5 — Chassis ground: (B137) No. 7 — Chassis ground: (Check CURRENT DATA. 1) Start the engine. 2) Read the data of the front oxygen (A/F) sensor heater current using the Subaru Select Monitor or general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedures, refer to "READ CURRENT DATA. 1) Start the engine. 2) Read the data of the front oxygen (A/F) sensor heater current using the Subaru Select Monitor or general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedures, refer to "READ CURRENT DATA. 1) Start the engine. 2) Measure the voltage between ECM con- nector: • Centerat in procedures, refer to "READ CURRENT DATA FOR ENGINE". • Subaru Select Monitor For detailed operation procedures, refer to "READ CURRENT DATA FOR ENGINE". • CHECK CUPRENT DATA FOR ENGINE". • Check CUPRENT DATA FOR ENGINE". • Poor contact in For detailed operation procedures, refer to "READ CURRENT DATA FOR ENGINE". • Poor contact in ECM connector • Poor contact in ECM co					
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2 CHECK GROUND CIRCUIT FOR ECM. Measure the resistance of harness between ECM connector and chassis ground. is the resistance less than 5 Ω? Go to step 3. Repair the har- ness and conne tor. 2 CHECK GROUND CIRCUIT FOR ECM. (B134) No. 5 — Chassis ground: (B137) No. 7 — Chassis ground: (B137) No. 7 — Chassis ground: Is the resistance less than 5 Ω? Go to step 3. Repair the har- ness and conne tor. 3 CHECK CURRENT DATA. 1) Start the engine. Is the current more than 0.2 A? Poor contact in for detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". Is the current more than 0.2 A? Repair the poor contact of connector • Poor contact in for detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". Is the current more than 0.2 A? Repair the poor contact of connector • Poor contact in for detailed operation procedure, refer to "READ CURRENT DATA. Is the current more than 0.2 A? Repair the poor contact of connector • Poor contact in for to xygen (A/F) sensor chare current using the Subaru Select Monitor or general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedures, refer to "General Scan tool For detailed operation procedures, refer to "General Scan Tool Instruction Manual". Is the voltage less than 1 V? • Sor contact in ECM connector • Poor contact in ECM con					 Poor contact in
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(B137) No. 7 — Chassis ground: ground terminal (B137) No. 7 — Chassis ground: Solar Secondation (B137) No. 7 — Chassis ground: Is the current more than 0.2 A? (B137) No. 7 — Chassis ground: Is the current more than 0.2 A? (B137) No. 7 — Chassis ground: Is the current more than 0.2 A? (B137) No. 7 — Chassis ground: Is the current more than 0.2 A? (B135) No. 6 (+) — Chassis ground (-): Is the current more than 0.2 A? (B135) No. 6 (+) — Chassis ground (-): Is the current more than 0.2 A? (B135) No. 6 (+) — Chassis ground (-): Is the current more than 0.2 A? (B137) No. 7 — Chassis ground (-): Is the current more than 0.2 A? (B135) No. 6 (+) — Chassis ground (-): Is the voltage less than 1 V? (Connector & terminal (B135) No. 6 (+) — Chassis ground (-):					
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For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.> front oxygen (A/F) sensor connector • General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". • Poor contact in ECM connector 4 CHECK OUTPUT SIGNAL OF ECM. 1) Start and idle the engine. 2) Measure the voltage between ECM con- nector and chassis ground. Connector & terminal (B135) No. 6 (+) — Chassis ground (-): Is the voltage less than 1 V? Go to step 6.</ref. 				•	
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"General Scan Tool Instruction Manual". Is the voltage less than 1 V? Go to step 6. Go to step 5. 1) Start and idle the engine. Is the voltage less than 1 V? Go to step 6. Go to step 5. 2) Measure the voltage between ECM connector and chassis ground. Connector & terminal Go to step 6. Go to step 6. 10 Go to step 6. Go to step 6. Go to step 6. Go to step 6.					
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nector and chassis ground. Connector & terminal (B135) No. 6 (+) — Chassis ground (–):					
(B135) No. 6 (+) — Chassis ground (–):		· · · · · · · · · · · · · · · · · · ·			
	_	(B135) No. 7 (+) — Chassis ground (–):		Dana in th	O a ta atau 2
5 CHECK OUTPUT SIGNAL OF ECM. Does the voltage change by Repair the poor Go to step 6.	5				Go to step 6.
Measure the voltage between ECM connector shaking the ECM harness and contact of ECM and chassis ground.					
Connector & terminal value of voltage meter?					
(B135) No. 6 (+) — Chassis ground (–):					
(B135) No. 7 (+) — Chassis ground (–):					

EN(H6DO)(diag)-101

N: DTC P0052 HO2S HEATER CONTROL CIRCUIT HIGH (BANK 2 SENSOR 1) DTC DETECTING CONDITION:

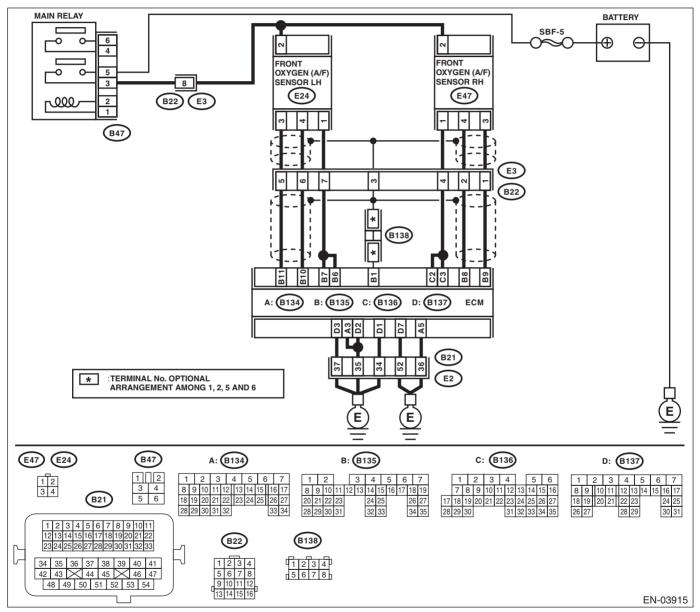
· Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-26, DTC P0052 HO2S HEATER CONTROL CIRCUIT HIGH (BANK 2 SENSOR 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	 CHECK OUTPUT SIGNAL OF ECM. 1) Turn the ignition switch to ON. 2) Measure the voltage between ECM connector and chassis ground. Connector & terminal (B135) No. 6 (+) — Chassis ground (-): (B135) No. 7 (+) — Chassis ground (-): 	Is the voltage more than 8 V?	Go to step 2 .	Go to step 3.
2	 CHECK FRONT OXYGEN (A/F) SENSOR HEATER CURRENT. 1) Turn the ignition switch to OFF. 2) Repair the battery short circuit of harness between ECM and front oxygen (A/F) sensor connector. 3) Turn the ignition switch to ON. 4) Read the data of the front oxygen (A/F) sensor heater current using the Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	Is the current more than 2.3 A?	Replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>	END
3	CHECK OUTPUT SIGNAL OF ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B135) No. 6 (+) — Chassis ground (–): (B135) No. 7 (+) — Chassis ground (–):	Does the voltage change by shaking the ECM harness and connector?	Repair the battery short circuit of har- ness between ECM and front oxygen (A/F) sen- sor connector.	END

O: DTC P0057 HO2S HEATER CONTROL CIRCUIT LOW (BANK 2 SENSOR 2) DTC DETECTING CONDITION:

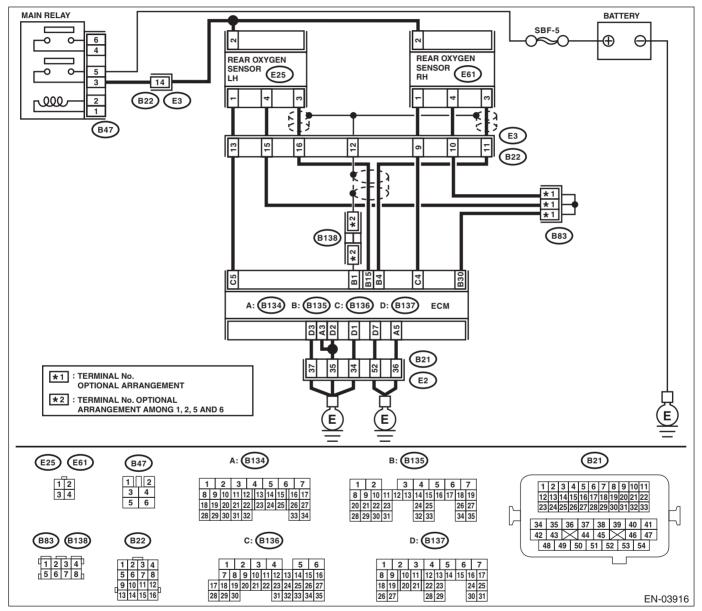
· Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-26, DTC P0057 HO2S HEATER CONTROL CIRCUIT LOW (BANK 2 SENSOR 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK POWER SUPPLY TO REAR OXY-	Is the voltage more than 10 V?		Repair the power
	GEN SENSOR.			supply line.
	 Turn the ignition switch to OFF. 			NOTE:
	2) Disconnect the connector from the rear			In this case, repair
	oxygen sensor.			the following item:
	3) Turn the ignition switch to ON.4) Measure the voltage between rear oxygen			Open circuit in
	sensor connector and chassis ground.			harness between main relay and rear
	Connector & terminal			oxygen sensor
	(E25) No. 2 (+) — Chassis ground (–):			connector
				 Poor contact in
				main relay connec-
				tor
				 Poor contact in
				coupling connectorMalfunction in
				main relay
2	CHECK GROUND CIRCUIT FOR ECM.	Is the resistance less than 5	Go to step 3.	Repair the har-
	1) Turn the ignition switch to OFF.	Ω ?		ness and connec-
	2) Disconnect the connectors from ECM.			tor.
	Measure the resistance of harness			NOTE:
	between ECM connector and chassis ground.			In this case, repair
	Connector & terminal			the following item:
	(B134) No. 3 — Chassis ground: (B134) No. 5 — Chassis ground:			 Open circuit in harness between
	(B137) No. 1 — Chassis ground:			ECM and engine
	(B137) No. 2 — Chassis ground:			ground terminal
	(B137) No. 3 — Chassis ground:			• Poor contact in
	(B137) No. 7 — Chassis ground:			ECM connector
				 Poor contact in
				coupling connector
3		Is the current more than 0.2 A?	•	Go to step 4.
	 Start the engine. Read the data of rear oxygen sensor heater 		nector.	
	current using the Subaru Select Monitor or		NOTE: In this case, repair	
	general scan tool.		the following item:	
	NOTE:		• Poor contact in	
	Subaru Select Monitor		rear oxygen sen-	
	For detailed operation procedure, refer to		sor connector	
	"READ CURRENT DATA FOR ENGINE". <ref.< td=""><td></td><td>• Poor contact in</td><td></td></ref.<>		• Poor contact in	
	to EN(H6DO)(diag)-27, Subaru Select Moni-		coupling connector	
	tor.> General scan tool 		 Poor contact in ECM connector 	
	For detailed operation procedures, refer to the			
	"General Scan Tool Instruction Manual".			
4	CHECK OUTPUT SIGNAL OF ECM.	Is the voltage less than 1 V?	Go to step 7.	Go to step 5.
	1) Start and idle the engine.	-		
	2) Measure the voltage between ECM con-			
	nector and chassis ground.			
	Connector & terminal (B136) No. 5 (+) — Chassis ground (–):			
5	(B136) No. 5 (+) — Chassis ground (–): CHECK OUTPUT SIGNAL OF ECM.	Does the voltage change by	Repair the poor	Go to step 6 .
5	Measure the voltage between ECM connector	shaking the ECM harness and	contact of ECM	
	and chassis ground.	connector while monitoring the	connector.	
	Connector & terminal	value of voltage meter?		
	(B136) No. 5 (+) — Chassis ground (–):	_		

	Step	Check	Yes	No
6	 CHECK OUTPUT SIGNAL OF ECM. 1) Disconnect the connector from rear oxygen sensor. 2) Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 5 (+) — Chassis ground (-): 	Is the voltage less than 1 V?	Replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>	Repair the battery short circuit of har- ness between ECM and rear oxy- gen sensor con- nector. After repair, replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>
7	 CHECK REAR OXYGEN SENSOR. 1) Turn the ignition switch to OFF. 2) Measure the resistance between the rear oxygen 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 item: • 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 ECM connector	sor.>

P: DTC P0058 HO2S HEATER CONTROL CIRCUIT HIGH (BANK 2 SENSOR 2) DTC DETECTING CONDITION:

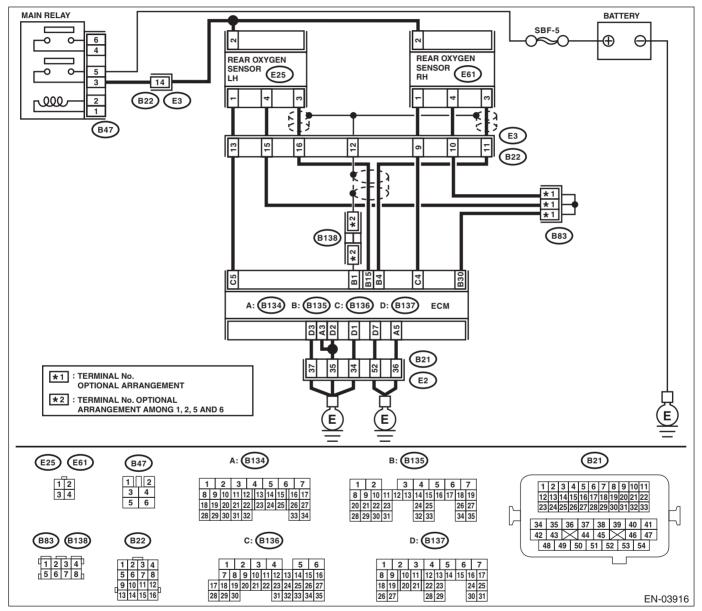
• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-26, DTC P0058 HO2S HEATER CONTROL CIRCUIT HIGH (BANK 2 SENSOR 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK INPUT SIGNAL OF ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 5 (+) — Chassis ground (–):	Is the voltage more than 8 V?	Go to step 2.	Go to step 3.
2	 CHECK CURRENT DATA. 1) Turn the ignition switch to OFF. 2) Repair the battery short circuit of harness between ECM and rear oxygen sensor connector. 3) Turn the ignition switch to ON. 4) Read the data of rear oxygen sensor heater current using the Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 		Replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>	END
3	CHECK POOR CONTACT. Check the poor contact of ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact of ECM connector.	END

Q: DTC P0068 MAP/MAF - THROTTLE POSITION CORRELATION

DTC DETECTING CONDITION:

Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-27, DTC P0068 MAP/MAF - THROTTLE POSITION CORRELATION, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Failure of engine to start

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:

MANIFOLD (E21) ABSOLUTE PRESSURE SENSOR 123 - N 0 (E21) (E77) 123 456 (B21) (E77 1 2 3 4 5 6 7 8 9 10 11 - - 2 12 13 14 15 16 17 18 19 20 21 22 E76 23 24 25 26 27 28 29 30 31 32 33 Ľ \neg
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 (B134) E2 B21 19 7 20 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 29 19 (B134) ECM EN-03917

	Step	Check	Yes	No
1	 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. to EN(H6DO)(diag)-27, Subaru Select Monitor.> 		Go to step 2.	Check the throttle position sensor cir- cuit. <ref. to<br="">EN(H6DO)(diag)- 351, DTC P2135 THROTTLE/ PEDAL POSI- TION SENSOR/ SWITCH "A"/"B" VOLTAGE COR- RELATION, Diag- nostic Procedure with Diagnostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0106.</ref.>
2	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check the relative DTC. "List of Diag- nostic Trouble Code (DTC)" <ref. to EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0106.</ref. 	Go to step 3.
3	CHECK CONDITION OF MANIFOLD ABSO- LUTE PRESSURE SENSOR.	Is the manifold absolute pres- sure sensor installation bolt tightened securely?	Go to step 4.	Securely tighten the manifold abso- lute pressure sen- sor installation bolt.
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(H6DO)-23, Manifold Absolute Pressure Sensor.></ref. 	Tighten the throttle body installation bolt securely.

R: DTC P0076 INTAKE VALVE CONTROL SOLENOID CIRCUIT LOW (BANK 1) DTC DETECTING CONDITION:

• Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-30, DTC P0076 INTAKE VALVE CONTROL SOLENOID CIRCUIT LOW (BANK 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Erroneous idling

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:

(B137) ECM (B137) 1 2 3 4 5 6 7
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 24 25 26 27 30 31 28 29 (B21) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
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 E69 25 26 E2 12 E69 **OIL SWITCHING** SOLENOID VALVE RH EN-03918

	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN ECM AND OIL SWITCHING SOLENOID VALVE. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM and oil switching solenoid valve. 3) Measure the resistance between ECM and oil switching solenoid valve. <i>Connector & terminal</i> (B137) No. 25 — (E69) No. 1: (B137) No. 24 — (E69) No. 2:	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit of harness between ECM and oil switching sole- noid valve connec- tor. NOTE: In this case, repair the following item: • Open circuit in harness between ECM and oil switch- ing solenoid valve connector • Poor contact in
2	 CHECK OIL SWITCHING SOLENOID VALVE. 1) Remove the oil switching solenoid valve connector. 2) Measure the resistance between oil switching solenoid valve terminals. Terminals No. 1 — No. 2: 	Is the resistance between 6 and 12 Ω ?	Repair the poor contact of ECM and oil switching solenoid valve.	coupling connector Replace the oil switching solenoid valve. <ref. to<br="">ME(H6DO)-78, Oil Switching Sole- noid Valve.></ref.>

S: DTC P0077 INTAKE VALVE CONTROL SOLENOID CIRCUIT HIGH (BANK 1) DTC DETECTING CONDITION:

· Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-31, DTC P0077 INTAKE VALVE CONTROL SOLENOID CIRCUIT HIGH (BANK 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Erroneous idling

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:

(B137) ECM (B137) 1 2 3 4 5 6 7
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 24 25 26 27 30 31 28 29 (B21) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
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 E69 25 26 E2 12 E69 **OIL SWITCHING** SOLENOID VALVE RH EN-03918

	Step	Check	Yes	No
1	 CHECK HARNESS BETWEEN ECM AND OIL SWITCHING SOLENOID VALVE. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM and oil switching solenoid valve. 3) Measure the resistance between oil switch- ing solenoid valve and engine ground. Connector & terminal (E69) No. 1 — Engine ground: (E69) No. 2 — Engine ground: 	Is the resistance more than 1 $M\Omega$?	Go to step 2.	Repair the short circuit between ECM and oil switching solenoid valve connector.
2	 CHECK OIL SWITCHING SOLENOID VALVE. 1) Remove the oil switching solenoid valve connector. 2) Measure the resistance between oil switching solenoid valve terminals. Terminals No. 1 — No. 2: 	and 12 Ω?	Repair the poor contact of ECM and oil switching solenoid valve.	Replace the oil switching solenoid valve. <ref. to<br="">ME(H6DO)-78, Oil Switching Sole- noid Valve.></ref.>

T: DTC P0082 INTAKE VALVE CONTROL SOLENOID CIRCUIT LOW (BANK 2) DTC DETECTING CONDITION:

· Immediately at fault recognition

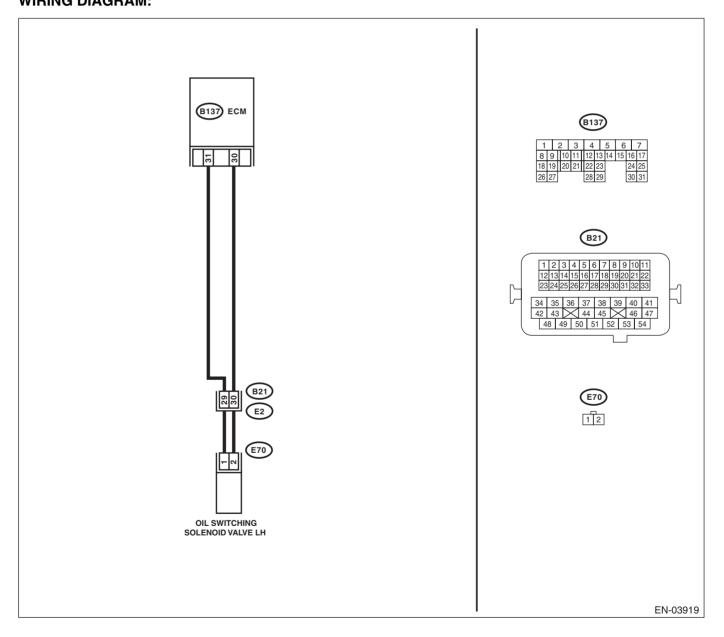
• GENERAL DESCRIPTION <Ref. to GD(H6DO)-32, DTC P0082 INTAKE VALVE CONTROL SOLENOID CIRCUIT LOW (BANK 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Erroneous idling

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN ECM AND OIL SWITCHING SOLENOID VALVE. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM and oil switching solenoid valve. 3) Measure the resistance between ECM and oil switching solenoid valve. Connector & terminal (B137) No. 31 — (E70) No. 1: (B137) No. 30 — (E70) No. 2:	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit of harness between ECM and oil switching sole- noid valve connec- tor. NOTE: In this case, repair the following item: • Open circuit in harness between ECM and oil switch- ing solenoid valve connector • Poor contact in coupling connector
2	 CHECK OIL SWITCHING SOLENOID VALVE. 1) Remove the oil switching solenoid valve connector. 2) Measure the resistance between oil switching solenoid valve terminals. Terminals No. 1 — No. 2: 	Is the resistance between 6 and 12 Ω ?	Repair the poor contact of ECM and oil switching solenoid valve.	Replace the oil switching solenoid valve. <ref. to<br="">ME(H6DO)-78, Oil Switching Sole- noid Valve.></ref.>

U: DTC P0083 INTAKE VALVE CONTROL SOLENOID CIRCUIT HIGH (BANK 2) DTC DETECTING CONDITION:

· Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-32, DTC P0083 INTAKE VALVE CONTROL SOLENOID CIRCUIT HIGH (BANK 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Erroneous idling

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:

(B137) ECM (B137) 1 2 3 4 5 6 7
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 E70 29 30 E2 12 E70 OIL SWITCHING SOLENOID VALVE LH EN-03919

	Step	Check	Yes	No
1	 CHECK HARNESS BETWEEN ECM AND OIL SWITCHING SOLENOID VALVE. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM and oil switching solenoid valve. 3) Measure the resistance between oil switch- ing solenoid valve and engine ground. Connector & terminal (E70) No. 1 — Engine ground: (E70) No. 2 — Engine ground: 	Is the resistance more than 1 $M\Omega$?	Go to step 2.	Repair the short circuit between ECM and oil switching solenoid valve connector.
2	 CHECK OIL SWITCHING SOLENOID VALVE. 1) Remove the oil switching solenoid valve connector. 2) Measure the resistance between oil switching solenoid valve terminals. Terminals No. 1 — No. 2: 	and 12 Ω?	Repair the poor contact of ECM and oil switching solenoid valve.	Replace the oil switching solenoid valve. <ref. to<br="">ME(H6DO)-78, Oil Switching Sole- noid Valve.></ref.>

V: DTC P0101 MASS OR VOLUME AIR FLOW CIRCUIT RANGE/PERFORMANCE DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION < Ref. to GD(H6DO)-32, DTC P0101 MASS OR VOLUME AIR FLOW CIRCUIT RANGE/PERFORMANCE, Diagnostic Trouble Code (DTC) Detecting Criteria.>

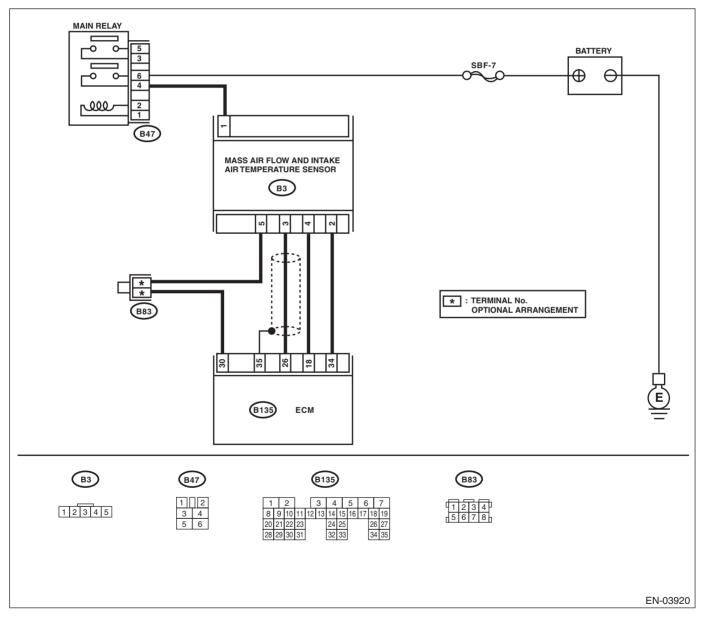
TROUBLE SYMPTOM:

- Erroneous idling
- Engine stalls.
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, Inspection Mode.>.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS-	Is any other DTC displayed?	Check the appro-	Replace the mass
	PLAY.		priate DTC using	air flow and intake
			the "List of Diag-	air temperature
			nostic Trouble	sensor. <ref. td="" to<=""></ref.>
			Code (DTC)".	FU(H6DO)-24,
			<ref. td="" to<=""><td>Mass Air Flow and</td></ref.>	Mass Air Flow and
			EN(H6DO)(diag)-	Intake Air Temper-
			70, List of Diag-	ature Sensor.>
			nostic Trouble	
			Code (DTC).>	
			NOTE:	
			In this case, it is	
			not necessary to	
			inspect DTC P0101.	

W: DTC P0102 MASS OR VOLUME AIR FLOW CIRCUIT LOW INPUT

DTC DETECTING CONDITION:

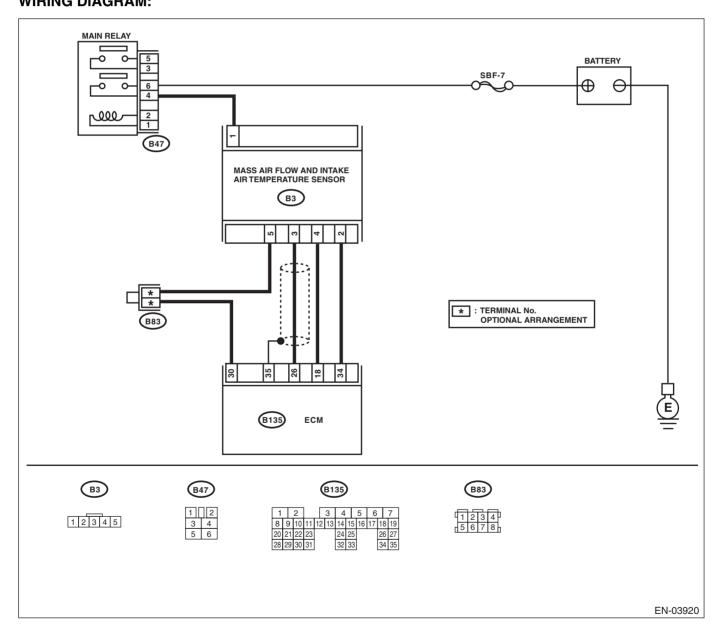
- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(H6DO)-35, DTC P0102 MASS OR VOLUME AIR FLOW CIRCUIT LOW INPUT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Engine stalls.
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	CONNECT SUBARU SELECT MONITOR OR	Is the voltage 0.2 — 4.7 V?	Even if the mal-	Go to step 2.
	THE GENERAL SCAN TOOL, AND READ		function indicator	
	THE DATA.		light illuminates,	
	 Turn the ignition switch to OFF. 		the circuit has	
	2) Connect the Subaru Select Monitor or gen-		returned to a nor-	
	eral scan tool to data link connector.		mal condition at	
	3) Turn the ignition switch to ON, and the Sub-		this time. Tempo-	
	aru Select Monitor or general scan tool power		rary poor contact	
	switch to ON.		of connector or	
	4) Start the engine.		harness may be	
	5) Read the voltage of mass air flow sensor		the cause. Repair	
	using Subaru Select Monitor or general scan tool.		the harness or connector in mass	
			air flow sensor.	
	NOTE: • Subaru Select Monitor			
	For detailed operation procedure, refer to		NOTE: In this case, repair	
	"READ CURRENT DATA FOR ENGINE". <ref.< td=""><td></td><td>the following item:</td><td></td></ref.<>		the following item:	
	to EN(H6DO)(diag)-27, Subaru Select Moni-		 Open or ground 	
	tor.>		short circuit in har-	
	General scan tool		ness between mass	
	For detailed operation procedures, refer to the		air flow sensor and	
	"General Scan Tool Instruction Manual".		ECM connector	
			 Poor contact in 	
			mass air flow sen-	
			sor or ECM con-	
			nector	
2	CHECK INPUT SIGNAL OF ECM. Measure the voltage between ECM connector and chassis ground while engine is idling. Connector & terminal (B135) No. 26 (+) — Chassis ground (–):	Is the voltage more than 0.2 V?	Go to step 4.	Go to step 3.
3	CHECK INPUT SIGNAL FOR ECM (USING	Does the voltage change by	Repair the poor	Replace the ECM.
5	SUBARU SELECT MONITOR).	shaking the harness and con-	contact of ECM	<ref. td="" to<=""></ref.>
	Measure the voltage between ECM connector	nector of ECM while monitor-	connector.	FU(H6DO)-33,
	and chassis ground while engine is idling.	ing the value with Subaru	Connocion	Engine Control
	and character growing the signed to ranning.	Select Monitor?		Module (ECM).>
4	CHECK POWER SUPPLY TO MASS AIR	Is the voltage more than 5 V?	Go to step 5.	Repair the open
	FLOW SENSOR.			circuit between
	 Turn the ignition switch to OFF. 			mass air flow sen-
	Disconnect the connector from mass air			sor and main relay.
	flow sensor.			
	3) Turn the ignition switch to ON.			
	4) Measure the voltage between mass air flow			
	sensor connector and chassis ground. Connector & terminal			
	(B3) No. 1 (+) — Chassis ground (–):			
5	CHECK HARNESS BETWEEN ECM AND	Is the resistance less than 1	Go to step 6.	Repair the open
ľ	MASS AIR FLOW SENSOR CONNECTOR.	Ω ?		circuit between
	1) Turn the ignition switch to OFF.			ECM and mass air
	2) Disconnect the connectors from ECM.			flow sensor con-
	3) Measure the resistance of harness			nector.
	between ECM and mass air flow sensor con-			
	nector.			
	Connector & terminal			
	(B135) No. 26 — (B3) No. 3:			
	(B135) No. 34 — (B3) No. 2:			
	(B135) No. 30 — (B3) No. 5:	1		

	Step	Check	Yes	No
6	CHECK HARNESS BETWEEN ECM AND MASS AIR FLOW SENSOR CONNECTOR. Measure the resistance of harness between ECM and chassis ground. <i>Connector & terminal</i> (B135) No. 26 — Chassis ground: (B135) No. 34 — Chassis ground: (B135) No. 30 — Chassis ground:	Is the resistance more than 1 MΩ?	Go to step 7 .	Repair the ground short circuit between ECM and mass air flow sen- sor connector.
7	CHECK POOR CONTACT. Check poor contact of mass air flow sensor connector.	Is there poor contact in mass air flow sensor connector?	Repair the poor contact of mass air flow sensor con- nector.	Replace the mass air flow and intake air temperature sensor. <ref. to<br="">FU(H6DO)-24, Mass Air Flow and Intake Air Temper- ature Sensor.></ref.>

X: DTC P0103 MASS OR VOLUME AIR FLOW CIRCUIT HIGH INPUT

DTC DETECTING CONDITION:

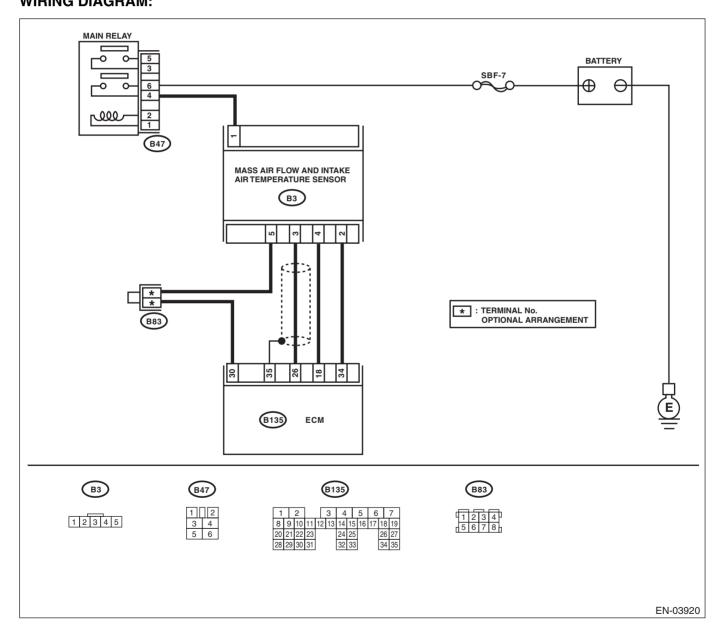
- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(H6DO)-37, DTC P0103 MASS OR VOLUME AIR FLOW CIRCUIT HIGH INPUT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Engine stalls.
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



EN(H6DO)(diag)-125

	Step	Check	Yes	No
1	 CONNECT SUBARU SELECT MONITOR OR THE GENERAL SCAN TOOL, AND READ THE DATA. 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor or general scan tool to data link connector. 3) Turn the ignition switch to ON, and the Subaru Select Monitor or general scan tool power switch to ON. 4) Start the engine. 5) Read the voltage of mass air flow sensor using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 		Even if the mal- function indicator light illuminates, the circuit has returned to a nor- mal condition at this time.	Go to step 2.
2	 CHECK HARNESS BETWEEN ECM AND MASS AIR FLOW SENSOR CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from mass air-flow sensor. 3) Turn the ignition switch to ON. 4) Measure the voltage between mass air flow sensor connector and chassis ground. Connector & terminal (B3) No. 3 (+) — Chassis ground (-): 	Is the voltage more than 5 V?	Repair the battery short circuit of har- ness between mass air flow sen- sor connector and ECM connector.	Go to step 3.
3	 CHECK HARNESS BETWEEN ECM AND MASS AIR FLOW SENSOR CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Measure the resistance of harness between ECM connector and mass air flow sensor connector. Connector & terminal (B3) No. 2 — (B135) No. 34: 	Is the resistance less than 1 Ω?	Replace the mass air flow sensor. <ref. to<br="">FU(H6DO)-24, Mass Air Flow and Intake Air Temper- ature Sensor.></ref.>	Repair the open circuit of harness between mass air flow sensor con- nector and ECM connector.

Y: DTC P0107 MANIFOLD ABSOLUTE PRESSURE/BAROMETRIC PRESSURE **CIRCUIT LOW INPUT**

DTC DETECTING CONDITION:

Immediately at fault recognition

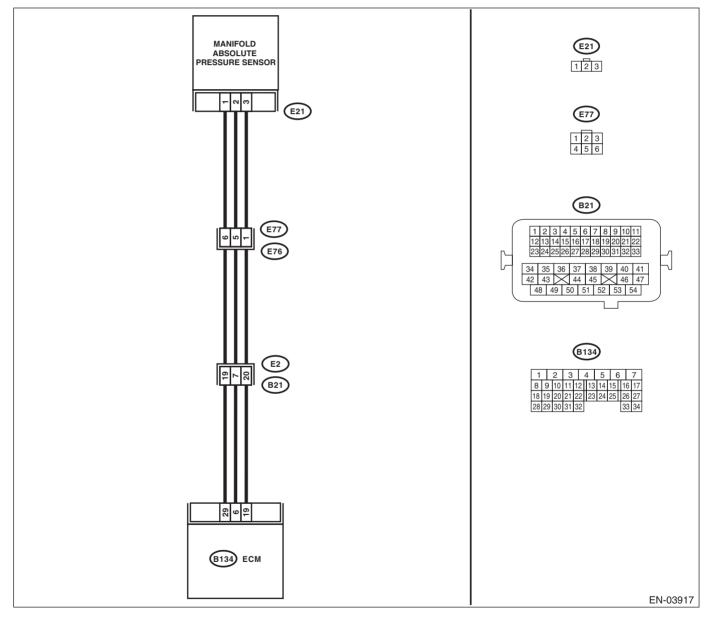
GENERAL DESCRIPTION <Ref. to GD(H6DO)-39, DTC P0107 MANIFOLD ABSOLUTE PRESSURE/

BAROMETRIC PRESSURE CIRCUIT LOW INPUT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK CURRENT DATA.	Is the measured value less	Go to step 3.	Go to step 2.
	 Start the engine. Description of intellegeneration of the start start	than 13.3 kPa (100 mmHg,		
	2) Read the data of intake manifold absolute	3.94 inHg) ?		
	pressure signal using Subaru Select Monitor or general scan tool.			
	NOTE: • Subaru Select Monitor			
	For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni-</ref. 			
	tor.> • General scan tool			
	For detailed operation procedures, refer to the			
	"General Scan Tool Instruction Manual".			
2	CHECK POOR CONTACT. Check the poor contact in ECM and manifold pressure sensor connector.	Is there poor contact in ECM or manifold pressure sensor con- nector?	Repair the poor contact in ECM or manifold pressure sensor connector.	Even if the mal- function indicator light illuminates, the circuit has returned to a nor- mal condition at this time.
3	CHECK OUTPUT SIGNAL OF ECM. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 19 (+) — Chassis ground (-):	Is the voltage more than 4.5 V?	Go to step 5.	Go to step 4.
4	CHECK OUTPUT SIGNAL OF ECM.	Does the voltage change by	Repair the poor	Replace the ECM.
•	Measure the voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 19 (+) — Chassis ground (-):	shaking the ECM harness and connector?	contact of ECM connector.	<ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>
5	CHECK INPUT SIGNAL OF ECM. Measure the voltage between ECM and chas- sis ground. Connector & terminal	Is the voltage less than 0.2 V?	Go to step 7.	Go to step 6.
	(B134) No. 6 (+) — Chassis ground (–):			
6	CHECK INPUT SIGNAL FOR ECM (USING SUBARU SELECT MONITOR). Read the data of atmospheric absolute pres- sure signal using Subaru Select Monitor. NOTE: For detailed operation procedure, refer to	Is the measured value more than 13.3 kPa (100 mmHg, 3.94 inHg) when shaking the ECM harness and connector?	Repair the poor contact of ECM connector.	Go to step 7.
	"READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. 			
7	 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 	Is the voltage more than 4.5 V?	Go to step 8.	Repair the open circuit of harness between ECM and manifold absolute pressure sensor connector.
	absolute pressure sensor connector and engine ground. <i>Connector & terminal</i> (E21) No. 3 (+) — Engine ground (–):			

	Step	Check	Yes	No
8	 CHECK HARNESS BETWEEN ECM AND MANIFOLD ABSOLUTE PRESSURE SEN- SOR CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Measure the resistance of harness between ECM and manifold absolute pressure sensor connector. Connector & terminal (B134) No. 29 — (E21) No. 1: 	Is the resistance less than 1 Ω ?	Go to step 9 .	Repair the open circuit of harness between ECM and manifold absolute pressure sensor connector.
9	CHECK POOR CONTACT. Check poor contact of manifold absolute pres- sure sensor connector.	Is there poor contact in mani- fold absolute pressure sensor connector?	Repair the poor contact of manifold absolute pressure sensor connector.	Replace the mani- fold absolute pres- sure sensor. <ref. to FU(H6DO)-23, Manifold Absolute Pressure Sensor.></ref.

Z: DTC P0108 MANIFOLD ABSOLUTE PRESSURE/BAROMETRIC PRESSURE CIRCUIT HIGH INPUT

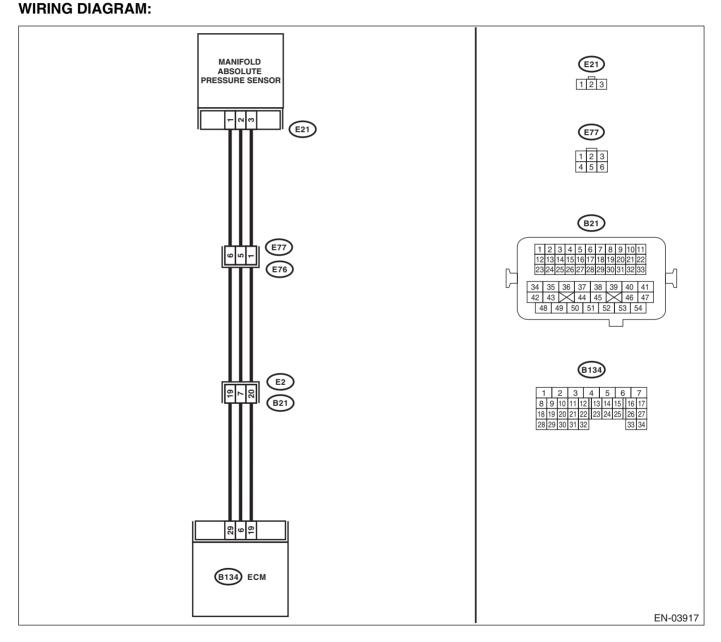
DTC DETECTING CONDITION:

• Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-41, DTC P0108 MANIFOLD ABSOLUTE PRESSURE/ BAROMETRIC PRESSURE CIRCUIT HIGH INPUT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK OUTPUT SIGNAL OF ECM.	Is the voltage more than 4.5 V?	Go to step 3.	Go to step 2.
	Measure the voltage between ECM connector			
	and chassis ground.			
	Connector & terminal			
	(B134) No. 19 (+) — Chassis ground (–):			
2	CHECK OUTPUT SIGNAL OF ECM.	Does the voltage change by	Repair the poor	Replace the ECM.
	Measure the voltage between ECM connector	shaking the ECM harness and	contact of ECM	<ref. td="" to<=""></ref.>
	and chassis ground.	connector?	connector.	FU(H6DO)-33,
	Connector & terminal			Engine Control
	(B134) No. 19 (+) — Chassis ground (–):			Module (ECM).>
3	CHECK INPUT SIGNAL OF ECM.	Is the voltage more than 4.5 V?	Go to step 5.	Go to step 4.
	Measure the voltage between ECM connector			
	and chassis ground.			
	Connector & terminal			
	(B134) No. 6 (+) — Chassis ground (–):			
4	CHECK INPUT SIGNAL FOR ECM (USING	Is the measured value more	Repair the poor	Go to step 5.
	SUBARU SELECT MONITOR).	than 13.3 kPa (100 mmHg,	contact of ECM	
	Read the data of atmospheric absolute pres-	3.94 inHg) when shaking the	connector.	
	sure signal using Subaru Select Monitor.	ECM harness and connector?		
	NOTE:			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". < Ref.			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.>			
5	CHECK HARNESS BETWEEN ECM AND	Is the voltage more than 4.5 V?	Go to step 6.	Repair the open
	MANIFOLD ABSOLUTE PRESSURE SEN-			circuit of harness
	SOR CONNECTOR.			between ECM and
	 Turn the ignition switch to OFF. 			manifold absolute
	Disconnect the connector from manifold			pressure sensor
	absolute pressure sensor.			connector.
	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 (–):			-
6	CHECK HARNESS BETWEEN ECM AND	Is the resistance less than 1	Go to step 7.	Repair the open
		Ω?		circuit of harness
	SOR CONNECTOR.			between ECM and
	1) Turn the ignition switch to OFF.			manifold absolute
	 Disconnect the connectors from ECM. Massure the resistence of hornes. 			pressure sensor
	3) Measure the resistance of harness			connector.
	between ECM and manifold absolute pressure			
	sensor connector.			
	Connector & terminal			
7	(B134) No. 6 — (E21) No. 2:	le the voltage mars than 4 5 VC	Denois the better	Co to stor 0
7	CHECK HARNESS BETWEEN THE MANI-	Is the voltage more than 4.5 V?		Go to step 8.
	FOLD ABSOLUTE PRESSURE SENSOR		short circuit of har-	
	CONNECTOR.		ness between	
	1) Turn the ignition switch to ON.		ECM and mani-	
	2) Measure the voltage between ECM con-		fold absolute pres-	
	nector and chassis ground.		sure sensor	
	Connector & terminal		connector.	
	(B134) No. 6 (+) — Chassis ground (–):			

	Step	Check	Yes	No
8	 CHECK HARNESS BETWEEN ECM AND MANIFOLD ABSOLUTE PRESSURE SEN- SOR CONNECTOR. 1) Turn the ignition switch to OFF. 2) Measure the resistance of harness between ECM and manifold absolute pressure sensor connector. Connector & terminal (B134) No. 29 — (E21) No. 1: 	Is the resistance less than 1 Ω ?	Go to step 9 .	Repair the open circuit of harness between ECM and manifold absolute pressure sensor connector.
9	CHECK POOR CONTACT. Check poor contact of manifold absolute pres- sure sensor connector.	Is there poor contact in mani- fold absolute pressure sensor connector?	Repair the poor contact of manifold absolute pressure sensor connector.	Replace the mani- fold absolute pres- sure sensor. <ref. to FU(H6DO)-23, Manifold Absolute Pressure Sensor.></ref.

AA:DTC P0111 INTAKE AIR TEMPERATURE SENSOR 1 CIRCUIT RANGE/PER-FORMANCE

DTC DETECTING CONDITION:

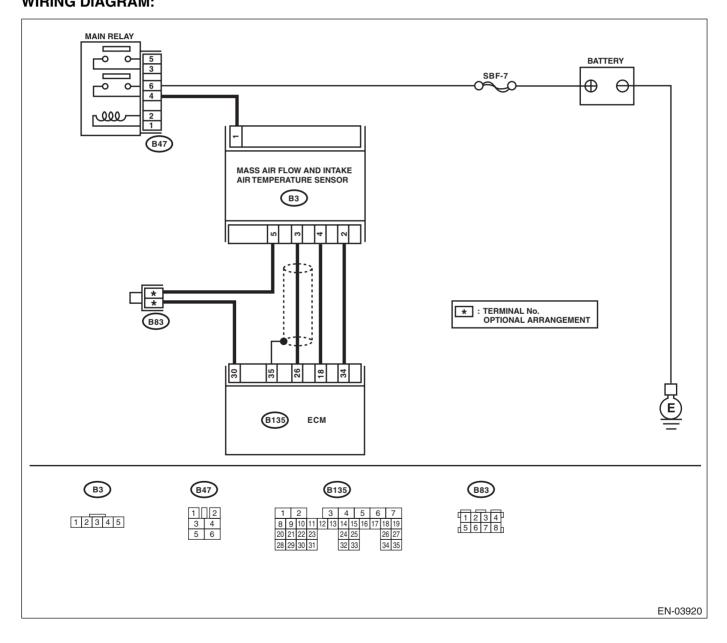
- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-43, DTC P0111 INTAKE AIR TEMPERATURE SENSOR
- 1 CIRCUIT RANGE/PERFORMANCE, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0111.</ref.>	Go to step 2.
2	 CHECK ENGINE COOLANT TEMPERA- TURE. 1) Start the engine and warm-up completely. 2) Measure the engine coolant temperature using the Subaru Select Monitor or general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. • General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 		air flow and intake air temperature sensor. <ref. to<br="">FU(H6DO)-24,</ref.>	Check DTC P0125 using "List of Diag- nostic Trouble Code (DTC)." <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>

AB:DTC P0112 INTAKE AIR TEMPERATURE SENSOR 1 CIRCUIT LOW DTC DETECTING CONDITION:

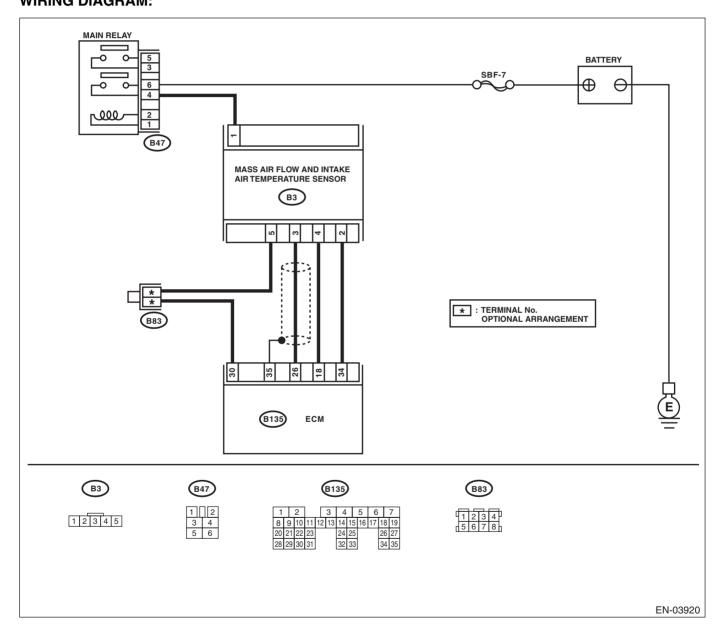
- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-45, DTC P0112 INTAKE AIR TEMPERATURE SENSOR 1 CIRCUIT LOW, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	 CHECK CURRENT DATA. 1) Start the engine. 2) Read the data of mass air flow and intake air temperature sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 		Go to step 2.	Repair the poor contact. NOTE: In this case, repair the following item: • Poor contact in mass air flow and intake air tempera- ture sensor • Poor contact in ECM • Poor contact in coupling connector • Poor contact in 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 the mass air flow and intake air temperature sensor. 3) Turn the ignition switch to ON. 4) Read the data of mass air flow and intake air temperature sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 		Replace the mass air flow and intake air temperature sensor. <ref. to<br="">FU(H6DO)-24, Mass Air Flow and Intake Air Temper- ature Sensor.></ref.>	Repair the ground short circuit in har- ness between the mass air flow and intake air tempera- ture sensor and ECM connector.

AC:DTC P0113 INTAKE AIR TEMPERATURE SENSOR 1 CIRCUIT HIGH DTC DETECTING CONDITION:

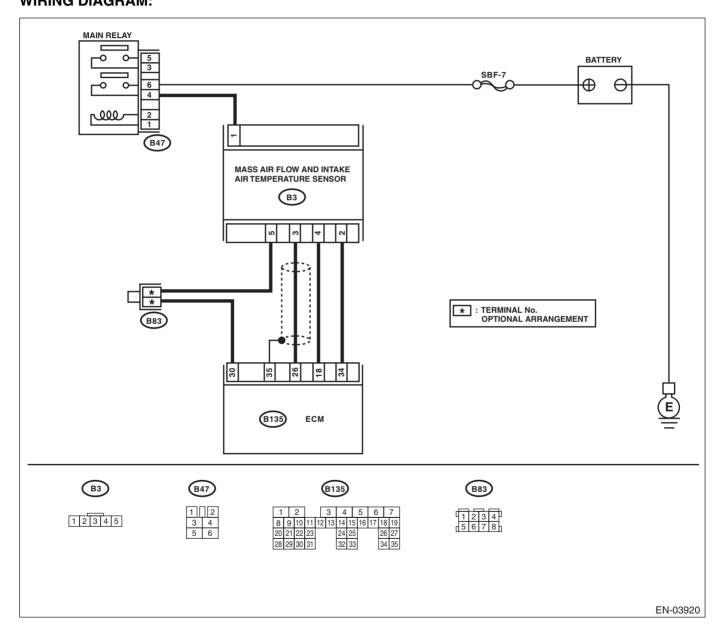
- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-47, DTC P0113 INTAKE AIR TEMPERATURE SENSOR
 1 CIRCUIT HIGH, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	 CHECK CURRENT DATA. 1) Start the engine. 2) Read the data of mass air flow and intake air temperature sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 		Go to step 2.	Repair the poor contact. NOTE: In this case, repair the following item: • Poor contact in mass air flow and intake air tempera- ture sensor • Poor contact in ECM • Poor contact in coupling connector • Poor contact in 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 the 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 the harness between mass air flow and intake air tempera- ture sensor, and the ECM connec- tor.	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. Connector & terminal (B3) No. 4 (+) — Engine ground (-): 	Is the voltage more than 10 V?	Repair the battery short circuit in the harness between mass air flow and intake air tempera- ture sensor, and the ECM connec- tor.	Go to step 4.
4		Is the voltage more than 3 V?	Go to step 5 .	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit be- tween mass air flow and intake air temperature sen- sor and ECM con- nector. • Poor contact in mass air flow and intake air tempera- ture sensor • Poor contact in ECM • Poor contact in coupling connector • Poor contact in joint connector

Step	Check	Yes	No
 5 CHECK HARNESS BETWEEN MASS AIR FLOW AND INTAKE AIR TEMPERATURE SENSOR AND ECM CONNECTOR. 1) Turn the ignition switch to OFF. 2) Measure the resistance of harness between mass air flow and intake air tempera- ture sensor connector and engine ground. Connector & terminal (B3) No. 5 — Engine ground: 	Is the resistance less than 5 Ω?	Replace the mass air flow and intake air temperature sensor. <ref. to<br="">FU(H6DO)-24, Mass Air Flow and</ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit be- tween mass air flow and intake air temperature sen- sor and ECM con- nector. • Poor contact in mass air flow and intake air tempera- ture sensor • Poor contact in ECM • Poor contact in ioint connector

AD:DTC P0117 ENGINE COOLANT TEMPERATURE CIRCUIT LOW DTC DETECTING CONDITION:

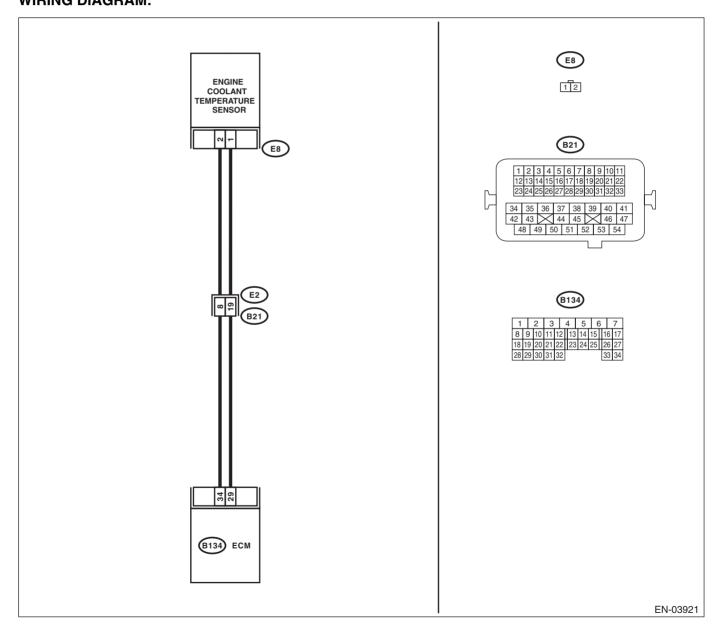
- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-49, DTC P0117 ENGINE COOLANT TEMPERATURE CIRCUIT LOW, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- · Hard to start
- Erroneous idling
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	 CHECK CURRENT DATA. 1) Start the engine. 2) Read the data of engine coolant temperature sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	Is the engine coolant tempera- ture above 150°C (302°F) ?	Go to step 2.	Repair the poor contact. NOTE: In this case, repair the following item: • Poor contact in engine coolant tem- perature sensor • Poor contact in ECM • Poor contact in coupling connector • Poor contact in ioint connector
2	 CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from the engine coolant temperature sensor. 3) Turn the ignition switch to ON. 4) Read the data of engine coolant tempera- ture sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	Is the engine coolant tempera- ture less than -40°C (-40°F) ?	Replace the engine coolant temperature sen- sor. <ref. to<br="">FU(H6DO)-18, Engine Coolant Temperature Sen- sor.></ref.>	Repair the ground short circuit of har- ness between engine coolant temperature sen- sor and ECM con- nector.

AE:DTC P0118 ENGINE COOLANT TEMPERATURE CIRCUIT HIGH DTC DETECTING CONDITION:

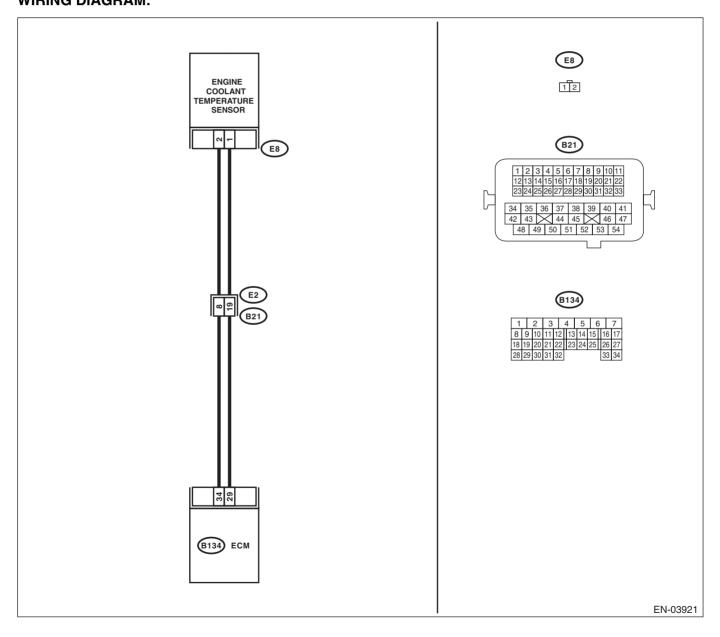
- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-51, DTC P0118 ENGINE COOLANT TEMPERATURE CIRCUIT HIGH, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Hard to start
- Erroneous idling
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK CURRENT DATA.	Is the engine coolant tempera-	Go to step 2.	Repair the poor
	1) Start the engine.	ture less than $-40^{\circ}C$ ($-40^{\circ}F$)?	'	contact.
	2) Read the data of engine coolant tempera-			NOTE:
	ture sensor signal using Subaru Select Monitor			In this case, repair
	or general scan tool.			the following item:
	NOTE:			 Poor contact in
	Subaru Select Monitor			engine coolant tem-
	For detailed operation procedure, refer to			perature sensor
	"READ CURRENT DATA FOR ENGINE". < Ref.			 Poor contact in
	to EN(H6DO)(diag)-27, Subaru Select Moni-			ECM
	tor.>			 Poor contact in
	 General scan tool 			coupling connector
	For detailed operation procedures, refer to the			 Poor contact in
	"General Scan Tool Instruction Manual".			joint connector
2	CHECK HARNESS BETWEEN ENGINE	Is the voltage more than 10 V?	Repair the battery	Go to step 3.
	COOLANT TEMPERATURE SENSOR AND		short circuit of har-	
	ECM CONNECTOR.		ness between	
	1) Turn the ignition switch to OFF.		ECM and engine	
	2) Disconnect the connectors from the engine		coolant tempera-	
	coolant temperature sensor.		ture sensor con-	
	3) Measure the voltage between engine cool-		nector.	
	ant temperature sensor connector and engine			
	ground.			
	Connector & terminal			
	(E8) No. 2 (+) — Engine ground (–):			
3	CHECK HARNESS BETWEEN ENGINE	Is the voltage more than 10 V?	Repair the battery	Go to step 4.
	COOLANT TEMPERATURE SENSOR AND		short circuit of har-	
	ECM CONNECTOR.		ness between	
	1) Turn the ignition switch to ON.		ECM and engine	
	2) Measure the voltage between engine cool-		coolant tempera-	
	ant temperature sensor connector and engine		ture sensor con-	
	ground.		nector.	
	Connector & terminal			
	(E8) No. 2 (+) — Engine ground (–):			
4	CHECK HARNESS BETWEEN ENGINE	Is the voltage more than 4 V?	Go to step 5.	Repair the har-
	COOLANT TEMPERATURE SENSOR AND			ness and connec-
	ECM CONNECTOR.			tor.
	Measure the voltage between engine coolant			NOTE:
	temperature sensor connector and engine			In this case, repair
	ground.			the following item:
	Connector & terminal			 Open circuit in
	(E8) No. 2 (+) — Engine ground (–):			harness between
				ECM and engine
				coolant tempera-
				ture sensor con-
				nector
				 Poor contact in
				engine coolant tem-
				perature sensor
				connector
				 Poor contact in
				ECM connector
				· Poor contact in
				coupling connector
				· Poor contact in
I				joint connector

Step	Check	Yes	No
 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: 	Is the resistance less than 5 Ω?	Replace the engine coolant temperature sen- sor. <ref. to<br="">FU(H6DO)-18, Engine Coolant Temperature Sen- sor.></ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit in harness between ECM and engine coolant tempera- ture sensor con- nector • Poor contact in engine coolant tem- perature sensor connector • Poor contact in ECM connector • Poor contact in ECM connector • Poor contact in coupling connector

AF:DTC P0122 THROTTLE/PEDAL POSITION SENSOR/SWITCH "A" CIRCUIT LOW

DTC DETECTING CONDITION:

Immediately at fault recognition

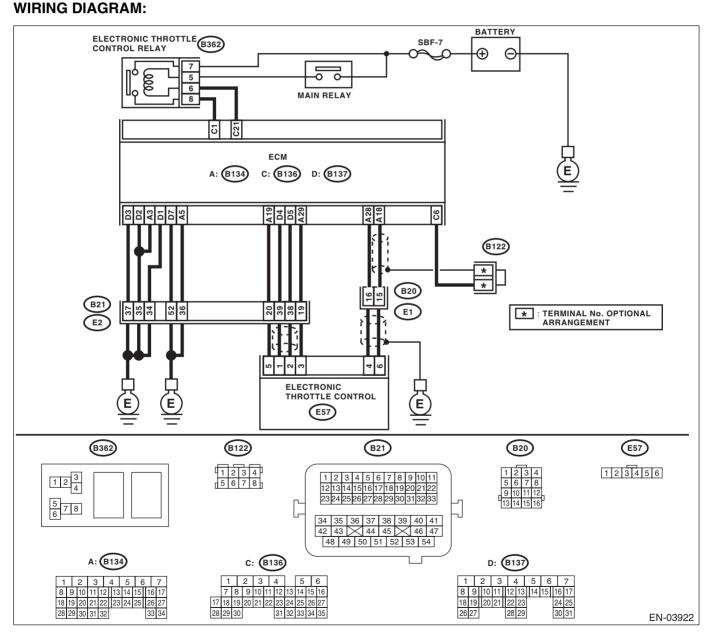
• GENERAL DESCRIPTION <Ref. to GD(H6DO)-53, DTC P0122 THROTTLE/PEDAL POSITION SEN-SOR/SWITCH "A" CIRCUIT LOW, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Engine stalls.
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



EN(H6DO)(diag)-145

	Step	Check	Yes	No
1	 CHECK SENSOR OUTPUT. 1) Turn the ignition switch to ON. 2) Read the data of main throttle sensor signal using Subaru Select Monitor. 	Is the voltage more than 0.4 V?	Go to step 2 .	Go to step 3 .
	NOTE: • Subaru Select Monitor For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. 			
2	CHECK POOR CONTACT. Check poor contact in connector between ECM and electronic throttle control.	Is there poor contact in con- nector between ECM and elec- tronic throttle control?	Repair the poor contact.	Temporary poor contact occurred, but it is normal at present.
3	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Disconnect the connectors from electronic throttle control. 4) Measure the resistance between ECM con- nector and electronic throttle control connector. <i>Connector & terminal</i> (B134) No. 18 — (E57) No. 6: (B134) No. 19 — (E57) No. 5: 	Is the resistance less than 1 Ω?	Go to step 4.	Repair the open circuit of harness connector.
4	CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. Measure the resistance between ECM connec- tor and chassis ground. <i>Connector & terminal</i> (B134) No. 18 — Chassis ground: (B134) No. 19 — Chassis ground:	Is the resistance more than 1 $M\Omega$?	Go to step 5.	Repair the chas- sis short circuit of harness.
5	 CHECK POWER SUPPLY OF ELECTRONIC THROTTLE CONTROL. 1) Connect the ECM connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between electronic throttle control connector and engine ground. <i>Connector & terminal</i> (E57) No. 5 (+) — Engine ground (-): 	Is the voltage 4.5 — 5.5 V?	Go to step 6.	Repair the poor contact of ECM connector. Replace the ECM if defective. <ref. to FU(H6DO)-33, Engine Control Module (ECM).></ref.
6	 CHECK SHORT CIRCUIT INSIDE THE ECM. 1) Turn the ignition switch to OFF. 2) Measure the resistance between electronic throttle control connector and engine ground. <i>Connector & terminal</i> (E57) No. 6 — Engine ground: 	Is the resistance more than 10 Ω ?	Repair the poor contact of elec- tronic throttle con- trol connector. Replace the accel- erator pedal posi- tion sensor if defective.	Repair the poor contact of ECM connector. Replace the ECM if defective. <ref. to FU(H6DO)-33, Engine Control Module (ECM).></ref.

AG:DTC P0123 THROTTLE/PEDAL POSITION SENSOR/SWITCH "A" CIRCUIT HIGH

DTC DETECTING CONDITION:

• Immediately at fault recognition

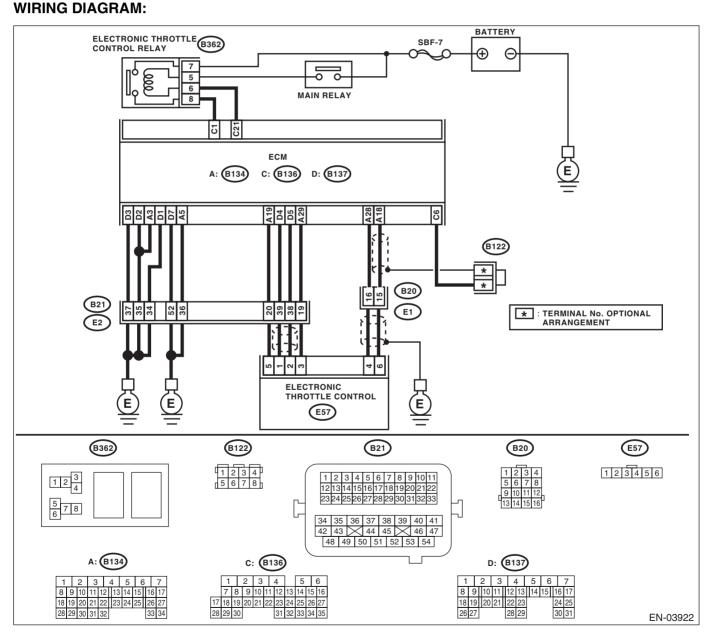
• GENERAL DESCRIPTION <Ref. to GD(H6DO)-55, DTC P0123 THROTTLE/PEDAL POSITION SEN-SOR/SWITCH "A" CIRCUIT HIGH, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Engine stalls.
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



EN(H6DO)(diag)-147

	Step	Check	Yes	No
1	 CHECK SENSOR OUTPUT. 1) Turn the ignition switch to ON. 2) Read the data of main throttle sensor signal using Subaru Select Monitor. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" li="" moni-<="" select="" subaru="" to=""> </ref.>	Is the voltage less than 4.63 V?	Go to step 2.	Go to step 3.
2	tor.> CHECK POOR CONTACT. Check poor contact in connector between ECM and electronic throttle control.	Is there poor contact in con- nector between ECM and elec- tronic throttle control?	Repair the poor contact.	Temporary poor contact occurred, but it is normal at present.
3	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Disconnect the connectors from electronic throttle control. 4) Measure the resistance between ECM con- nector and electronic throttle control connector. <i>Connector & terminal</i> (B134) No. 18 — (E57) No. 6: (B134) No. 29 — (E57) No. 3: 	Is the resistance less than 1 Ω?	Go to step 4.	Repair the open circuit of harness connector.
4	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. 1) Connect the ECM connector. 2) Measure the resistance between electronic throttle control connector and engine ground. Connector & terminal (E57) No. 3 — Engine ground: 	Is the resistance less than 1 Ω ?	Go to step 5.	Repair the poor contact of ECM connector. Replace the ECM if defective. <ref. to FU(H6DO)-33, Engine Control Module (ECM).></ref.
5	CHECK SENSOR OUTPUT POWER SUP- PLY. Measure the voltage between electronic throt- tle control connector and engine ground. <i>Connector & terminal</i> (E57) No. 6 (+) — Engine ground (–):	Is the voltage less than 10 V?	Go to step 6 .	Repair the battery short circuit of har- ness between ECM connector and electronic throttle control connector.
6	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Check the resistance between ECM connectors. Connector & terminal (B134) No. 18 — (B134) No. 19: 	Is the resistance more than 1 $M\Omega$?	Repair the poor contact of har- ness. Replace the electronic throttle control.	Repair the short circuit to sensor power supply.

AH:DTC P0125 INSUFFICIENT COOLANT TEMPERATURE FOR CLOSED LOOP FUEL CONTROL

DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-57, DTC P0125 INSUFFICIENT COOLANT TEMPERA-TURE FOR CLOSED LOOP FUEL CONTROL, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Engine does not return to idle.

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)." <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0125.</ref.>	
2	CHECK TIRE SIZE.	Is the tire size as specified? and the same size as other three wheels?	Go to step 3.	Replace the tire.
3	 CHECK ENGINE COOLANT. Check the following items: Amount of engine coolant Engine coolant freeze Contamination of engine coolant 	Is the engine coolant normal?	Go to step 4.	Fill or replace the engine coolant. <ref. to<br="">CO(H6DO)-11, INSPECTION, Engine Coolant.></ref.>
4	CHECK THERMOSTAT.	Does the thermostat remain opened?	Replace the ther- mostat. <ref. to<br="">CO(H6DO)-13, Thermostat.></ref.>	Replace the engine coolant temperature sen- sor. <ref. to<br="">FU(H6DO)-18, Engine Coolant Temperature Sen- sor.></ref.>

AI: DTC P0126 INSUFFICIENT ENGINE COOLANT TEMPERATURE FOR STABLE OPERATION

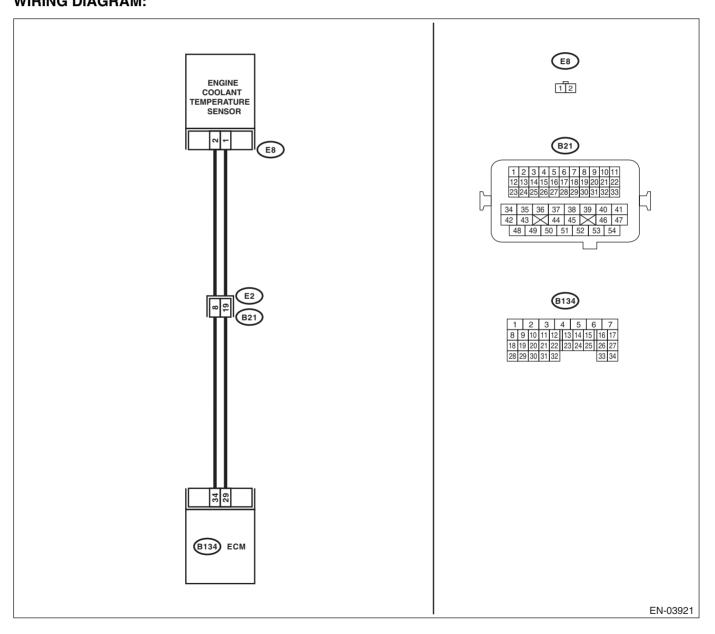
DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-59, DTC P0126 INSUFFICIENT ENGINE COOLANT TEMPERATURE FOR STABLE OPERATION, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- · Hard to start
- Erroneous idling
- Poor driving performance

CAUTION:



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
2	CHECK ENGINE COOLANT TEMPERATURE SENSOR. Measure the resistance between engine cool- ant temperature sensor terminals when the engine coolant is cold and after warmed-up. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance of engine coolant temperature sensor dif- ferent between when engine coolant is cold and after warmed-up?	Contact with SOA Service Center.	Replace the engine coolant temperature sen- sor. <ref. to<br="">FU(H6DO)-18, Engine Coolant Temperature Sen- sor.></ref.>

AJ:DTC P0128 COOLANT THERMOSTAT (ENGINE COOLANT TEMPERATURE BELOW THERMOSTAT REGULATING TEMPERATURE)

DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-61, DTC P0128 COOLANT THERMOSTAT (ENGINE COOLANT TEMPERATURE BELOW THERMOSTAT REGULATING TEMPERATURE), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Thermostat remains open.

CAUTION:

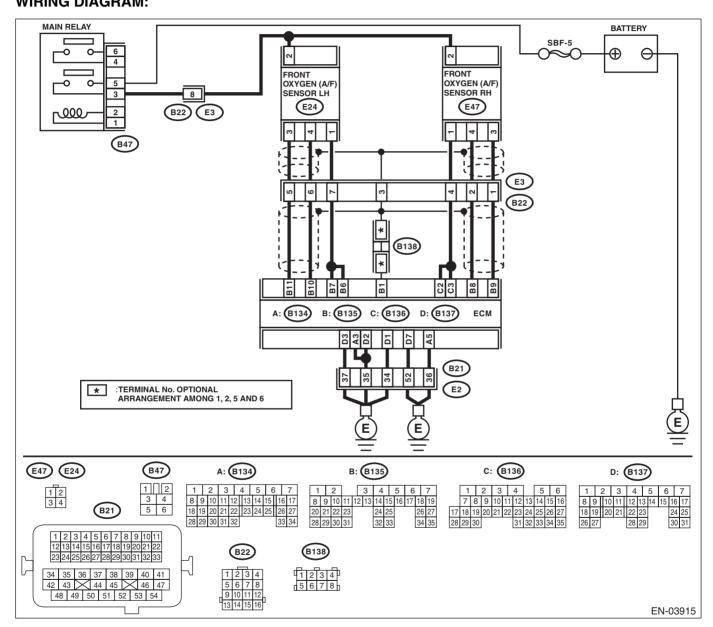
	Step	Check	Yes	No
1	CHECK VEHICLE CONDITION.	Was the vehicle driven or idled with the engine partially sub- merged under water?	In this case, it is not necessary to inspect DTC P0128.	Go to step 2 .
2	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></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(H6DO)-10, REPLACEMENT, Engine Coolant.></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(H6DO)-18, Radiator Main Fan and Fan Motor.> and <ref. to<br="">CO(H6DO)-21, Radiator Sub Fan and Fan Motor.></ref.></ref.>	Replace the ther- mostat. <ref. to<br="">CO(H6DO)-13,</ref.>

AK:DTC P0131 O2 SENSOR CIRCUIT LOW VOLTAGE (BANK 1 SENSOR 1) DTC DETECTING CONDITION:

• Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-63, DTC P0131 O2 SENSOR CIRCUIT LOW VOLTAGE (BANK 1 SENSOR 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:



	Step	Check	Yes	No
1	CHECK FRONT OXYGEN (A/F) SENSOR	Does water enter the connec-	Dry the water thor-	Go to step 2.
	CONNECTOR AND COUPLING CONNEC- TOR.	tor?	oughly.	
2	 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 and front oxygen (A/F) sensor connector. 3) Measure the resistance of harness between ECM and chassis ground. <i>Connector & terminal</i> (B135) No. 8 — Chassis ground: (B135) No. 9 — Chassis ground: 	Is the resistance more than 1 $M\Omega$?		Repair the ground short circuit of har- ness between ECM and front oxygen (A/F) sen- sor connector.

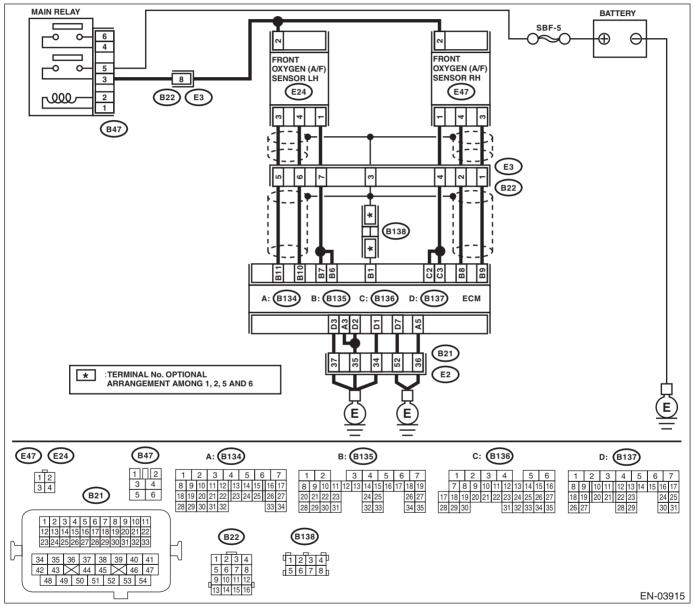
AL:DTC P0132 O2 SENSOR CIRCUIT HIGH VOLTAGE (BANK 1 SENSOR 1) DTC DETECTING CONDITION:

• Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-65, DTC P0132 O2 SENSOR CIRCUIT HIGH VOLTAGE (BANK 1 SENSOR 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:





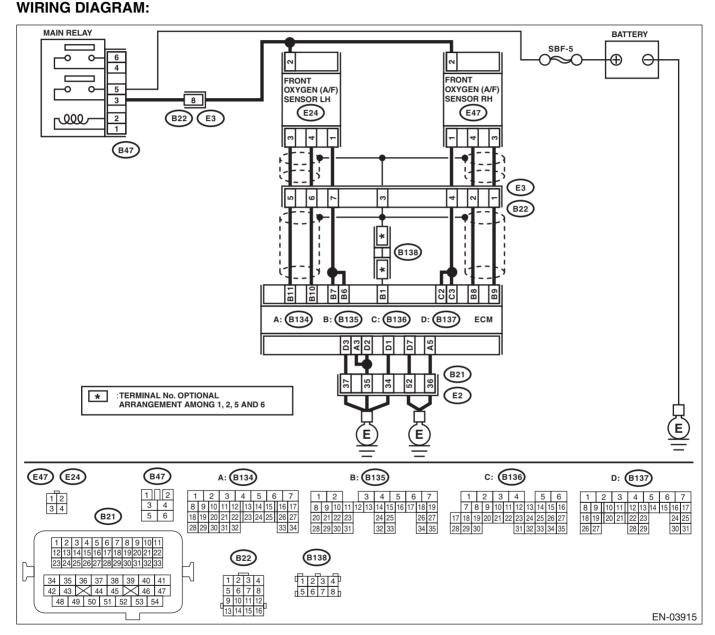
	Step	Check	Yes	No
1	CHECK FRONT OXYGEN (A/F) SENSOR	Does water enter the connec-	Dry the water thor-	Go to step 2.
	CONNECTOR AND COUPLING CONNEC-	tor?	oughly.	
	TOR.			
2	CHECK HARNESS BETWEEN ECM AND	Is the voltage more than 8 V?	Replace the front	Repair the battery
	FRONT OXYGEN (A/F) SENSOR CONNEC-		oxygen (A/F) sen-	short circuit of har-
	TOR.		sor. <ref. th="" to<=""><th>ness between</th></ref.>	ness between
	 Turn the ignition switch to ON. 		FU(H6DO)-29,	ECM and front
	2) Disconnect the connector from front oxygen		Front Oxygen (A/F)	oxygen (A/F) sen-
	(A/F) sensor.		Sensor.>	sor connector.
	Measure the voltage of harness between			
	ECM connector and chassis ground.			
	Connector & terminal			
	(B135) No. 8 (+) — Chassis ground (–):			
	(B135) No. 9 (+) — Chassis ground (–):			

AM:DTC P0133 O2 SENSOR CIRCUIT SLOW RESPONSE (BANK 1 SENSOR 1) DTC DETECTING CONDITION:

· Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-67, DTC P0133 O2 SENSOR CIRCUIT SLOW RE-SPONSE (BANK 1 SENSOR 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0133.</ref.>	
2	 CHECK EXHAUST SYSTEM. NOTE: Check the following items. Loose installation of front portion of exhaust pipe onto cylinder heads Loose connection between front exhaust pipe and front catalytic converter Damage of exhaust pipe resulting in a hole 		Repair the exhaust system.	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(H6DO)-29, Front Oxygen (A/F) Sensor.></ref.>

AN:DTC P0134 O2 SENSOR CIRCUIT NO ACTIVITY DETECTED (BANK 1 SEN-**SOR 1)**

DTC DETECTING CONDITION:

Immediately at fault recognition

GENERAL DESCRIPTION <Ref. to GD(H6DO)-70, DTC P0134 O2 SENSOR CIRCUIT NO ACTIVITY DETECTED (BANK 1 SENSOR 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

34 35 36 37 38 39 40 41

42 43 44 45 46 47 48 49 50 51 52 53 54

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After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:

MAIN RELAY BATTERY SBF-5 -0 6 Ð 2 4 п FRONT FRONT -0 C 5 OXYGEN (A/F OXYGEN (A/F SENSOR RH SENSOR LH 3 8 (E24) (E47 _000 B22 2 (E3) 1 (B47 E3 4 2 B22 (B138) * Ξ C C 88 8 B7 B6 **B**9 A: (B134) B: (B135) C: (B136) D: (B137) ECM 6 8 B Б D7 A5 B21 35 8 22 36 TERMINAL No. OPTIONAL ARRANGEMENT AMONG 1, 2, 5 AND 6 E2 * Ε Ε E47 E24 (B47) B: (B135) C: (B136) A: (B134) D: (B137) 1 2 3 4 1 2 1 2 3 4 5 6 7 3 5 6 7 4 1 2 3 4 5 6 7 4 1 2 2 3 5 6 3 8 9 10 11 12 13 14 15 16 17 11 12 13 14 15 16 17 18 19 7 8 9 10 11 12 8 9 10 13 14 15 16 8 9 10 11 12 13 14 15 16 17 56 (B21) 18 19 20 21 22 23 24 25 26 27 20 21 22 23 24 25 26 27 34 35 17 18 19 20 21 22 23 24 25 26 27 18 19 20 21 22 23 28 29 30 31 32 28 29 30 31 32 33 28 29 30 28 29 5 6 7 8 9 10 11 14 15 16 17 18 19 20 21 22 (B138) B22 232

> 1234 5678

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Θ

	Step	Check	Yes	No
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 and front oxygen (A/F) sensor connector. 3) Measure the resistance of harness between ECM and front oxygen (A/F) sensor connector. Connector & terminal (B135) No. 8 — (E47) No. 4: (B135) No. 9 — (E47) No. 3: 	Is the resistance less than 1 Ω?	Go to step 2.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit of harness between ECM and front ox- ygen (A/F) sensor connector • Poor contact in front oxygen (A/F) sensor connector • Poor contact in ECM connector
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(H6DO)-29, Front Oxygen (A/F) Sensor.></ref.>

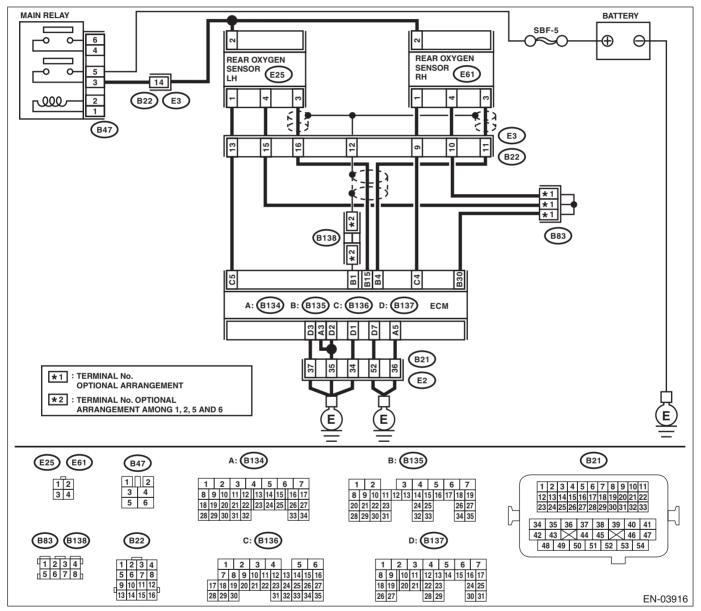
AO:DTC P0137 O2 SENSOR CIRCUIT LOW VOLTAGE (BANK 1 SENSOR 2) DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION < Ref. to GD(H6DO)-72, DTC P0137 O2 SENSOR CIRCUIT LOW VOLTAGE (BANK 1 SENSOR 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0137.</ref.>	Go to step 2.
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 3,000 rpm. (Max. 2 minutes) 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	Is the voltage more than 490 mV?	Go to step 6.	Go to step 3.
3	CHECK REAR OXYGEN SENSOR CONNEC- TOR AND COUPLING CONNECTOR.	Does water enter the connec- tor?	Dry the water thor- oughly.	Go to step 4.
4	 CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM and rear oxygen sensor. 3) Measure the resistance of harness between ECM and rear oxygen sensor con- nector. Connector & terminal (B135) No. 4 — (E61) No. 3: (B135) No. 30 — (E61) No. 4: 	Is the resistance more than 3 Ω ?	Repair the open circuit of 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 resistance between the rear oxygen sensor harness connector and chassis ground. Connector & terminal (E61) No. 3 (+) — Chassis ground (-): 	Is the voltage 0.2 — 0.5 V?	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • 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

	Step	Check	Yes	No
6	Check exhaust system parts.	Is there any fault in exhaust system?	Repair or replace faulty parts.	Replace the rear oxygen sensor.
	NOTE: Check the following items. • Looseness and improper fitting of exhaust			<ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>
	 system parts Damage (crack, hole etc.) of parts Looseness and improper fitting of parts be- tween front any game (A/E) appear and your appear. 			501.2
	tween front oxygen (A/F) sensor and rear oxy- gen sensor			

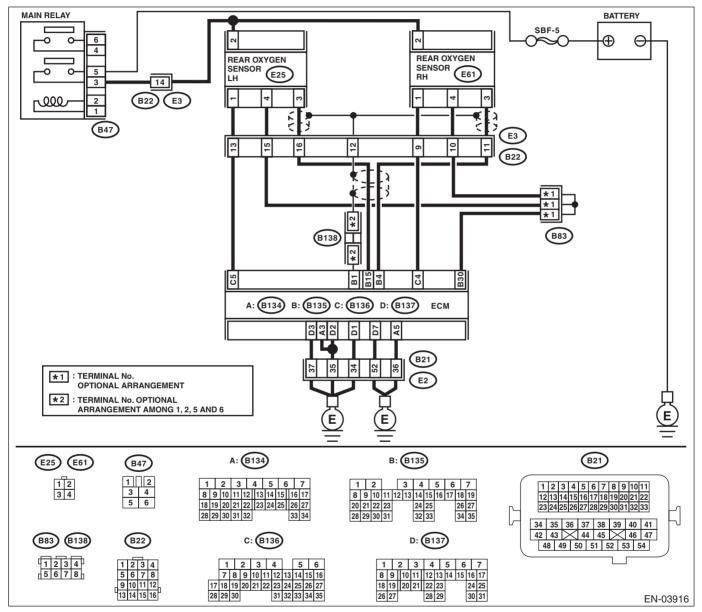
AP:DTC P0138 O2 SENSOR CIRCUIT HIGH VOLTAGE (BANK 1 SENSOR 2) DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION < Ref. to GD(H6DO)-74, DTC P0138 O2 SENSOR CIRCUIT HIGH VOLTAGE (BANK 1 SENSOR 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0138.</ref.>	Go to step 2.
2	 CHECK REAR OXYGEN SENSOR DATA. 1) Warm-up the engine until engine coolant temperature is above 70°C (158°F), and drop the engine speed suddenly from 3,000 rpm. 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 		Go to step 6 .	Go to step 3 .
3	CHECK REAR OXYGEN SENSOR CONNEC- TOR AND COUPLING CONNECTOR.	Does water enter the connec- tor?	Dry the water thor- oughly.	Go to step 4 .
4	 CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM and rear oxygen sensor. 3) Measure the resistance of harness between ECM and rear oxygen sensor con- nector. Connector & terminal (B135) No. 4 — (E61) No. 3: (B135) No. 30 — (E61) No. 4: 	Is the resistance more than 3 Ω ?	Repair the open circuit of 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 resistance between the rear oxygen sensor harness connector and chassis ground. Connector & terminal (E61) No. 3 (+) — Chassis ground (-): 	Is the voltage 0.2 — 0.5 V?	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • 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

	Step	Check	Yes	No
6	CHECK EXHAUST SYSTEM.		Repair or replace faulty parts.	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>

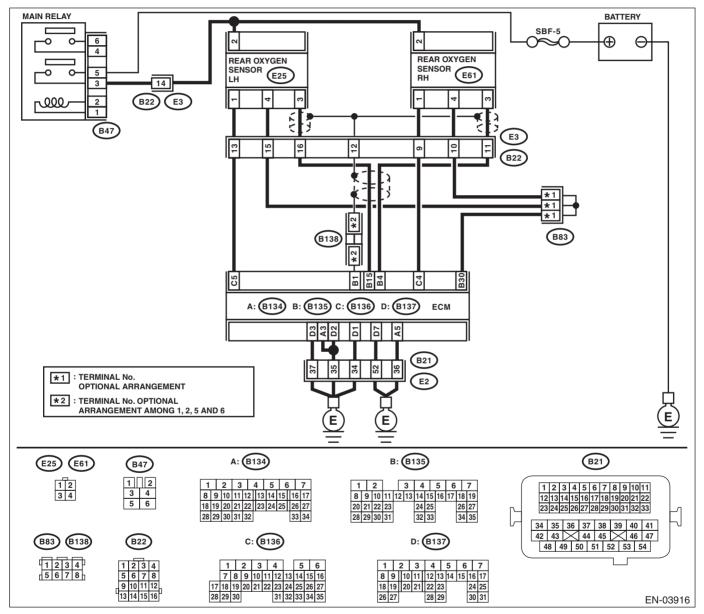
AQ:DTC P0139 O2 SENSOR CIRCUIT SLOW RESPONSE (BANK 1 SENSOR 2) DTC DETECTING CONDITION:

· Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-76, 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, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0139.</ref.>	Go to step 2.
2	 CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM and rear oxygen sensor. 3) Measure the resistance of harness between ECM and rear oxygen sensor con- nector. Connector & terminal (B135) No. 4 — (E61) No. 3: 	Is the resistance less than 1 Ω ?	Go to step 3.	Repair the open circuit of harness between ECM and rear oxygen sen- sor connector.
3	CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR. Measure the resistance between rear oxygen sensor harness connector and chassis ground. Connector & terminal (E61) No. 3 — Chassis ground	Is the resistance more than 1 $M\Omega$?	Go to step 4.	Repair the chas- sis short circuit of harness.
4	CHECK REAR OXYGEN SENSOR. Measure the resistance between rear oxygen sensor terminals. <i>Terminals</i> <i>No. 3 — No. 4:</i>	Is the resistance less than 1 Ω ?	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>	Temporary poor contact occurs. Check poor con- tact of connector.

AR:DTC P0140 O2 SENSOR CIRCUIT NO ACTIVITY DETECTED (BANK1 SENSOR2)

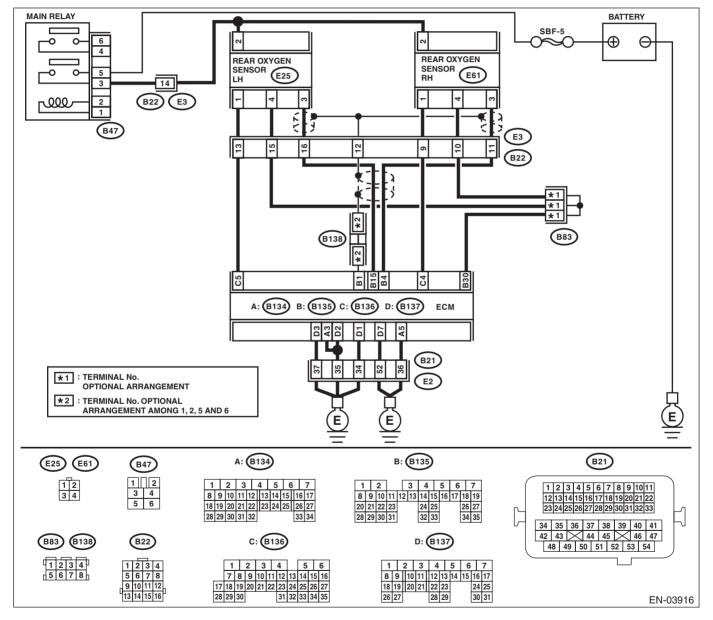
DTC DETECTING CONDITION:

Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-82, DTC P0140 O2 SENSOR CIRCUIT NO ACTIVITY DETECTED (BANK1 SENSOR2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0140.</ref.>	Go to step 2.
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 3,000 rpm. (Max. 2 minutes.) 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	Is the voltage 490 mV or more?	Go to step 7 .	Go to step 3 .
3	 CHECK REAR OXYGEN SENSOR DATA. 1) Warm-up the engine until engine coolant temperature is above 70°C (158°F), and drop the engine speed suddenly from 3,000 rpm. 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	Is the voltage less than 250 mV?	Go to step 7.	Go to step 4 .
4	CHECK REAR OXYGEN SENSOR CONNEC-	Does water enter the connec-	Dry the water thor-	Go to step 5.
	TOR AND COUPLING CONNECTOR.	tor?	oughly.	
5	 CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM and rear oxygen sensor. 3) Measure the resistance of harness between ECM and rear oxygen sensor con- nector. Connector & terminal (B137) No. 4 — (E61) No. 3: (B136) No. 35 — (E61) No. 4: 	Is the resistance more than 3 Ω?	Repair the open circuit of harness between ECM and rear oxygen sen- sor connector.	Go to step 6 .

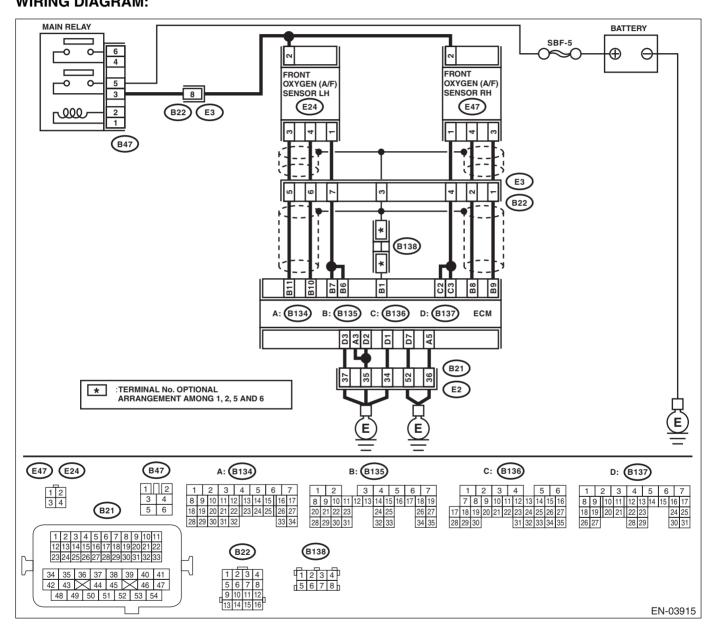
	Step	Check	Yes	No
6	 CHECK HARNESS BETWEEN REAR OXY-GEN SENSOR AND ECM CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from rear oxygen sensor. 3) Turn the ignition switch to ON. 4) Measure the resistance between the rear oxygen sensor harness connector and chassis ground. Connector & terminal (E61) No. 3 (+) — Chassis ground (-): 	Is the voltage 0.2 — 0.5 V?	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31,</ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • 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
7	 CHECK EXHAUST SYSTEM. Check exhaust system parts. NOTE: Check the following items. Looseness and improper fitting of exhaust system parts Damage (crack, hole etc.) of parts Looseness and improper fitting of parts between front oxygen (A/F) sensor and rear oxygen sensor 		Repair or replace faulty parts.	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>

AS:DTC P0151 O2 SENSOR CIRCUIT LOW VOLTAGE (BANK 2 SENSOR 1) DTC DETECTING CONDITION:

· Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-84, DTC P0151 O2 SENSOR CIRCUIT LOW VOLTAGE (BANK 2 SENSOR 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:



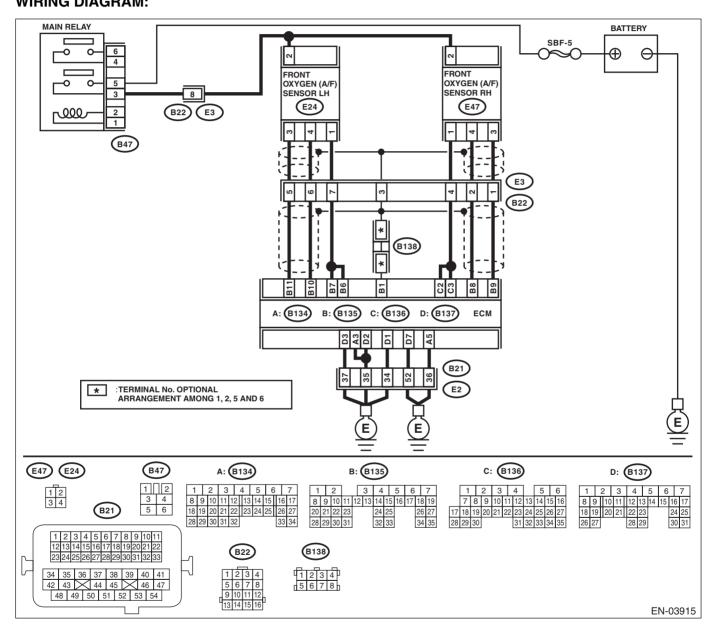
	Step	Check	Yes	No
1	CHECK FRONT OXYGEN (A/F) SENSOR CONNECTOR AND COUPLING CONNEC- TOR.	Does water enter the connec- tor?	Dry the water thor- oughly.	·
2	 CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC- TOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM and front oxygen (A/F) sensor connector. 3) Measure the resistance of harness between ECM and chassis ground. <i>Connector & terminal</i> (B135) No. 10 — Chassis ground: (B135) No. 11 — Chassis ground: 	Is the resistance more than 1 MΩ?	oxygen (A/F) sen- sor. <ref. to<br="">FU(H6DO)-29, Front Oxygen (A/</ref.>	Repair the ground short circuit of har- ness between ECM and front oxygen (A/F) sen- sor connector.

AT:DTC P0152 O2 SENSOR CIRCUIT HIGH VOLTAGE (BANK 2 SENSOR 1) DTC DETECTING CONDITION:

· Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-84, DTC P0152 O2 SENSOR CIRCUIT HIGH VOLTAGE (BANK 2 SENSOR 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:



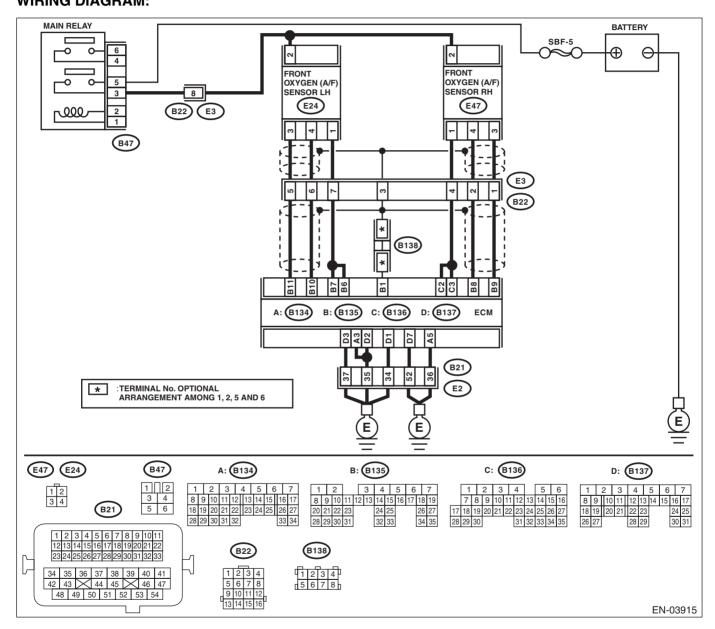
	Step	Check	Yes	No
1	CHECK FRONT OXYGEN (A/F) SENSOR CONNECTOR AND COUPLING CONNEC- TOR.	Does water enter the connec- tor?	Dry the water thor- oughly.	Go to step 2.
2	 CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC- TOR. 1) Disconnect the connector from front oxygen (A/F) sensor. 2) Turn the ignition switch to ON. 3) Measure the voltage of harness between ECM connector and chassis ground. Connector & terminal (B135) No. 10 (+) — Chassis ground (-): (B135) No. 11 (+) — Chassis ground (-): 	Is the voltage more than 8 V?	Repair the battery short circuit of har- ness between ECM and front oxygen (A/F) sen- sor connector.	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(H6DO)-29, Front Oxygen (A/ F) Sensor.></ref.>

AU:DTC P0153 O2 SENSOR CIRCUIT SLOW RESPONSE (BANK 2 SENSOR 1) DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-84, DTC P0153 O2 SENSOR CIRCUIT SLOW RE-SPONSE (BANK 2 SENSOR 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0133.</ref.>	Go to step 2.
2	 CHECK EXHAUST SYSTEM. NOTE: Check the following items. Loose installation of front portion of exhaust pipe onto cylinder heads Loose connection between front exhaust pipe and front catalytic converter Damage of exhaust pipe resulting in a hole 		Repair the exhaust system.	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(H6DO)-29, Front Oxygen (A/F) Sensor.></ref.>

AV:DTC P0154 O2 SENSOR CIRCUIT NO ACTIVITY DETECTED (BANK 2 SEN-SOR 1)

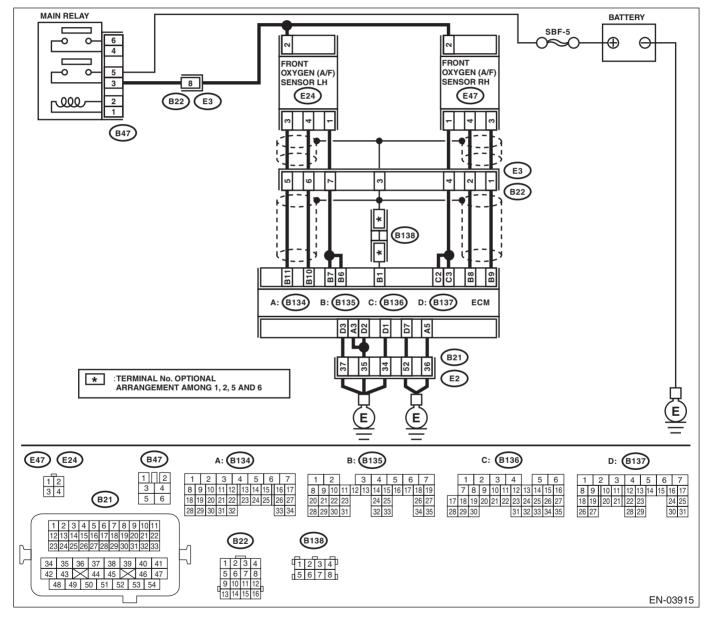
DTC DETECTING CONDITION:

Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-84, DTC P0154 O2 SENSOR CIRCUIT NO ACTIVITY DETECTED (BANK 2 SENSOR 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
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 and front oxygen (A/F) sensor connector. 3) Measure the resistance of harness between ECM and front oxygen (A/F) sensor connector. Connector & terminal (B135) No. 10 — (E24) No. 4: (B135) No. 11 — (E24) No. 3:	Is the resistance less than 1 Ω ?	Go to step 2.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit of harness between ECM and front ox- ygen (A/F) sensor connector • Poor contact in front oxygen (A/F) sensor connector • Poor contact in ECM connector
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(H6DO)-29, Front Oxygen (A/F) Sensor.></ref.>

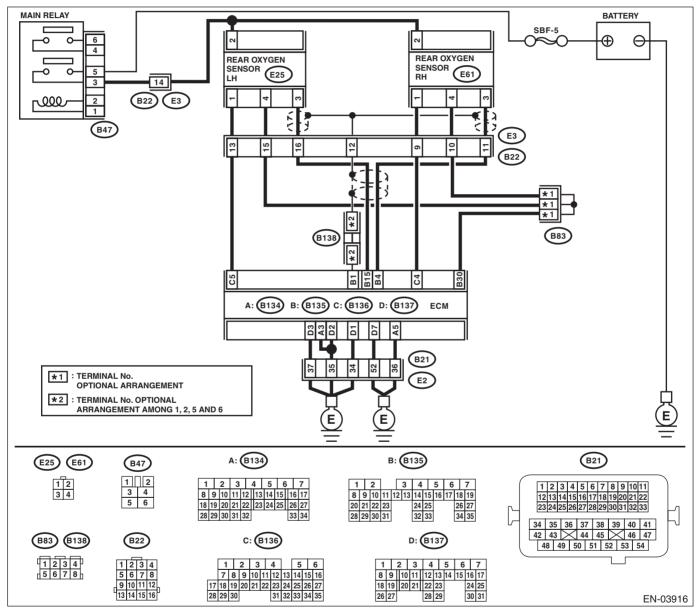
AW:DTC P0157 O2 SENSOR CIRCUIT LOW VOLTAGE (BANK 2 SENSOR 2) DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION < Ref. to GD(H6DO)-84, DTC P0157 O2 SENSOR CIRCUIT LOW VOLTAGE (BANK 2 SENSOR 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to</ref.>	Go to step 2.
_			inspect DTC P0157.	
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 3,000 rpm. (Max. 2 minutes) 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	Is the voltage more than 490 mV?	Go to step 6.	Go to step 3.
3	CHECK REAR OXYGEN SENSOR CONNEC- TOR AND COUPLING CONNECTOR.	Does water enter the connec- tor?	Dry the water thor- oughly.	Go to step 4.
4	 CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM and rear oxygen sensor. 3) Measure the resistance of harness between ECM and rear oxygen sensor con- nector. Connector & terminal (B135) No. 15 — (E25) No. 3: (B135) No. 30 — (E25) No. 4: 	Is the resistance more than 3 Ω ?	Repair the open circuit of 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 resistance between the rear oxygen sensor harness connector and chassis ground. Connector & terminal (E25) No. 3 (+) — Chassis ground (-): 	Is the voltage 0.2 — 0.5 V?	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • 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

	Step	Check	Yes	No
6	 CHECK EXHAUST SYSTEM. Check exhaust system parts. NOTE: Check the following items. Looseness and improper fitting of exhaust system parts Damage (crack, hole etc.) of parts Looseness and improper fitting of parts between front oxygen (A/F) sensor and rear oxygen sensor 		Repair or replace faulty parts.	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>

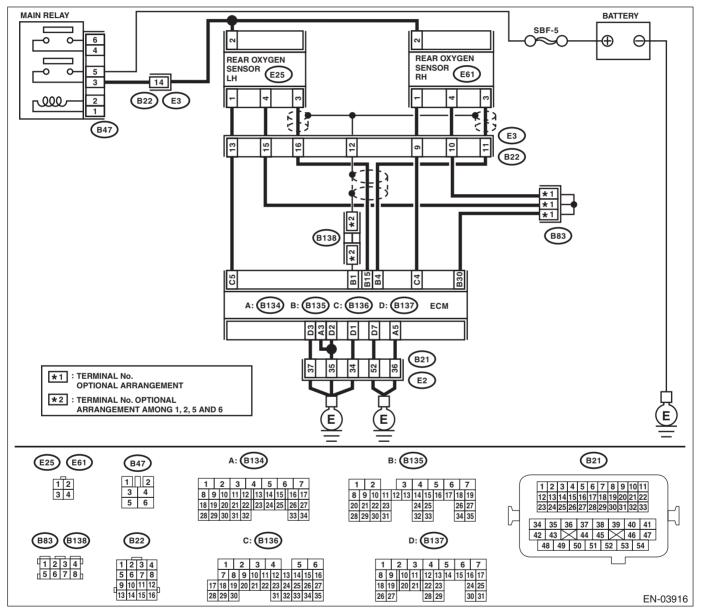
AX:DTC P0158 O2 SENSOR CIRCUIT HIGH VOLTAGE (BANK 2 SENSOR 2) DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION < Ref. to GD(H6DO)-84, DTC P0158 O2 SENSOR CIRCUIT HIGH VOLTAGE (BANK 2 SENSOR 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0158.</ref.>	
2	 CHECK REAR OXYGEN SENSOR DATA. 1) Warm-up the engine until engine coolant temperature is above 70°C (158°F), and drop the engine speed suddenly from 3,000 rpm. 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General scan tool 		Go to step 6 .	Go to step 3.
3	CHECK REAR OXYGEN SENSOR CONNEC- TOR AND COUPLING CONNECTOR.	Does water enter the connec- tor?	Dry the water thor- oughly.	Go to step 4.
4	 CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM and rear oxygen sensor. 3) Measure the resistance of harness between ECM and rear oxygen sensor con- nector. Connector & terminal (B135) No. 15 — (E25) No. 3: (B135) No. 30 — (E25) No. 4: 	Is the resistance more than 3 Ω ?	Repair the open circuit of 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 resistance between the rear oxygen sensor harness connector and chassis ground. Connector & terminal (E25) No. 3 (+) — Chassis ground (-): 	Is the voltage 0.2 — 0.5 V?	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • 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

	Step	Check	Yes	No
6	Check exhaust system parts.	Is there any fault in exhaust system?	Repair or replace faulty parts.	Replace the rear oxygen sensor.
	NOTE: Check the following items. • Looseness and improper fitting of exhaust			<ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>
	 system parts Damage (crack, hole etc.) of parts Looseness and improper fitting of parts be- tween front any game (A/E) appear and your appear. 			501.2
	tween front oxygen (A/F) sensor and rear oxy- gen sensor			

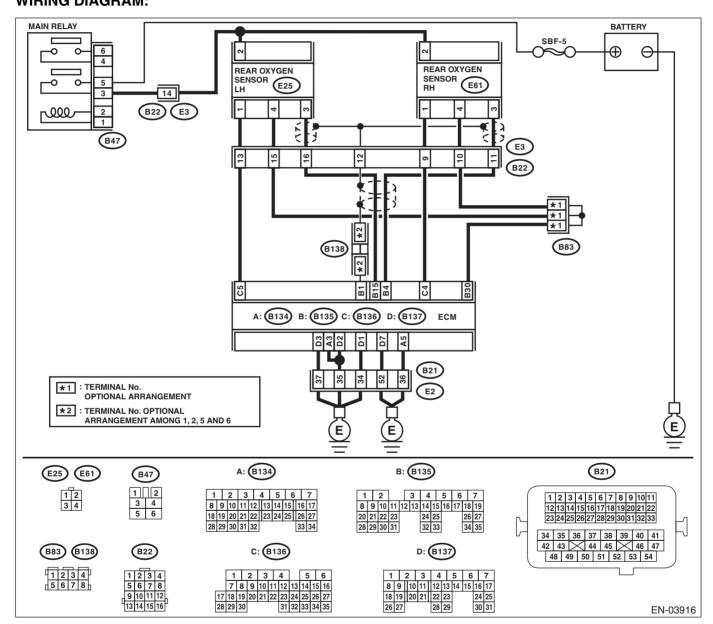
AY:DTC P0159 O2 SENSOR CIRCUIT SLOW RESPONSE (BANK 2 SENSOR 2) DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-84, DTC P0159 O2 SENSOR CIRCUIT SLOW RE-SPONSE (BANK 2 SENSOR 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0159.</ref.>	Go to step 2.
2	 CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM and rear oxygen sensor. 3) Measure the resistance of harness between ECM and rear oxygen sensor con- nector. Connector & terminal (B135) No. 15 — (E25) No. 3: 	Is the resistance less than 1 Ω ?	Go to step 3.	Repair the open circuit of harness between ECM and rear oxygen sen- sor connector.
3	CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR. Measure the resistance between rear oxygen sensor harness connector and chassis ground. Connector & terminal (B25) No. 3 — Chassis ground:	Is the resistance more than 1 $M\Omega$?	Go to step 4.	Repair the chas- sis short circuit of harness.
4	CHECK REAR OXYGEN SENSOR. Measure the resistance between rear oxygen sensor terminals. <i>Terminals</i> <i>No. 3 — No. 4:</i>	Is the resistance less than 1 Ω ?	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>	Temporary poor contact occurs. Check poor con- tact of connector.

AZ:DTC P0160 O2 SENSOR CIRCUIT NO ACTIVITY DETECTED (BANK2 SENSOR2)

DTC DETECTING CONDITION:

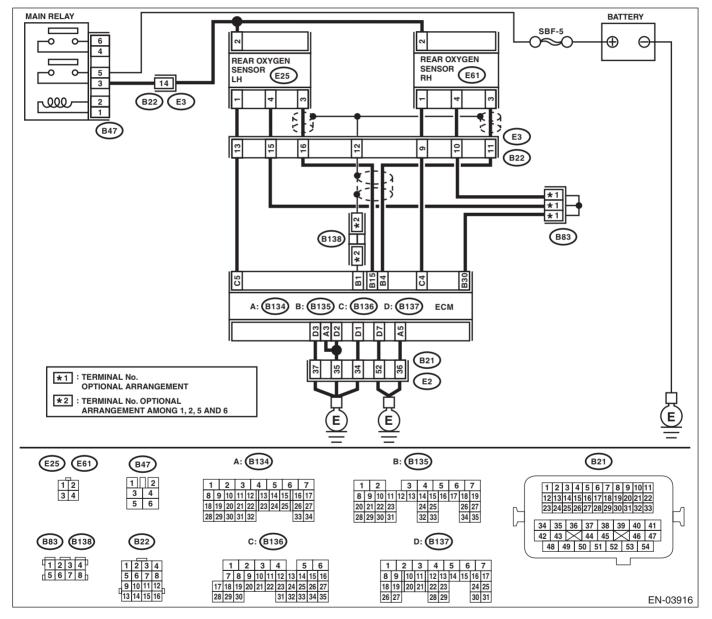
• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-84, DTC P0160 O2 SENSOR CIRCUIT NO ACTIVITY DETECTED (BANK2 SENSOR2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0160.</ref.>	Go to step 2 .
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 3,000 rpm. (Max. 2 minutes) 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General scan tool 		Go to step 7.	Go to step 3.
3	 CHECK REAR OXYGEN SENSOR DATA. 1) Warm-up the engine until engine coolant temperature is above 70°C (158°F), and drop the engine speed suddenly from 3,000 rpm. 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General scan tool 	Is the voltage less than 250 mV?	Go to step 7.	Go to step 4.
4		Does water enter the connec- tor?	Dry the water thor- oughly.	Go to step 5.
5	 CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM and rear oxygen sensor. 3) Measure the resistance of harness between ECM and rear oxygen sensor con- nector. Connector & terminal (B137) No. 25 — (E25) No. 3: (B136) No. 35 — (E25) No. 4: 	Is the resistance more than 3 Ω ?	Repair the open circuit of harness between ECM and rear oxygen sen- sor connector.	Go to step 6 .

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ENGINE (DIAGNOSTICS)

	Step	Check	Yes	No
6	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 resistance between the rear oxygen sensor harness connector and chassis ground. Connector & terminal (E25) No. 3 (+) — Chassis ground (-):	Is the voltage 0.2 — 0.5 V?	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • 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
7	 CHECK EXHAUST SYSTEM. Check exhaust system parts. NOTE: Check the following items. Looseness and improper fitting of exhaust system parts Damage (crack, hole etc.) of parts Looseness and improper fitting of parts between front oxygen (A/F) sensor and rear oxygen sensor 	Is there any fault in exhaust system?	Repair or replace faulty parts.	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>

BA:DTC P0171 SYSTEM TOO LEAN (BANK 1)

Refer to DTC P0175 for diagnostic procedure. <Ref. to EN(H6DO)(diag)-191, DTC P0175 SYSTEM TOO RICH (BANK 2), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

BB:DTC P0172 SYSTEM TOO RICH (BANK 1)

Refer to DTC P0175 for diagnostic procedure. <Ref. to EN(H6DO)(diag)-191, DTC P0175 SYSTEM TOO RICH (BANK 2), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

BC:DTC P0174 SYSTEM TOO LEAN (BANK 2)

Refer to DTC P0175 for diagnostic procedure. <Ref. to EN(H6DO)(diag)-191, DTC P0175 SYSTEM TOO RICH (BANK 2), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

BD:DTC P0175 SYSTEM TOO RICH (BANK 2)

DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION < Ref. to GD(H6DO)-88, DTC P0175 SYSTEM TOO RICH (BANK 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Engine stalls.
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, 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	 CHECK FUEL PRESSURE. WARNING: Place "NO FIRE" signs near the working area. Be careful not to spill fuel. Measure the fuel pressure while disconnecting pressure regulator vacuum hose from intake manifold. <ref. fuel="" inspection,="" me(h6do)-26,="" pressure.="" to=""></ref.> WARNING: Release fuel pressure before removing the fuel pressure gauge. 		Go to step 4.	Repair the follow- ing item. Fuel pressure is too high: • Clogged fuel line or bent hose Fuel pressure is too low: • Improper fuel pump discharge • Clogged fuel supply line
4	CHECK FUEL PRESSURE. After connecting the pressure regulator vac- uum hose, measure fuel pressure. <ref. fuel<br="" inspection,="" me(h6do)-26,="" to="">Pressure.> WARNING: Release fuel pressure before removing the fuel pressure gauge. NOTE: If the measured value at this step is out of spec- ification, check or replace pressure regulator and pressure regulator vacuum hose.</ref.>		Go to step 5 .	Repair the follow- ing item. Fuel pressure is too high: • Faulty pressure regulator • Clogged fuel line or bent hose Fuel pressure is too low: • Faulty pressure regulator • Improper fuel pump discharge • Clogged fuel supply line

	Step	Check	Yes	No
5	 CHECK ENGINE COOLANT TEMPERATURE SENSOR. 1) Start the engine and warm-up completely. 2) Read the data of engine coolant tempera- ture sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	ture above 60°C (140°F) ?	Go to step 6.	Replace the engine coolant temperature sen- sor. <ref. to<br="">FU(H6DO)-18, Engine Coolant Temperature Sen- sor.></ref.>
6	 CHECK MASS AIR FLOW AND INTAKE AIR TEMPERATURE SENSOR. 1) Start the engine and warm-up engine until coolant temperature is greater than 60°C (140°F). 2) Place the select lever in "N" or "P" position. 3) Turn the A/C switch to OFF. 4) Turn all the accessory switches to OFF. 5) Read the data of mass air flow and intake air temperature sensor signal using Subaru Select Monitor. NOTE: For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. 	Is the measured value 3.1 — 4.3 g/s (0.41 — 0.57 lb/m)?	Go to step 7.	Replace the mass air flow and intake air temperature sensor. <ref. to<br="">FU(H6DO)-24, Mass Air Flow and Intake Air Temper- ature Sensor.></ref.>
7	 CHECK MASS AIR FLOW AND INTAKE AIR TEMPERATURE SENSOR. 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 the accessory switches to OFF. 5) Open the front hood. 6) Measure the ambient temperature. 7) Read the data of mass air flow and intake air temperature sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	Subtract the ambient tempera- ture from intake air tempera- ture. Is the obtained value –10 — 50°C (–18 — 90°F)?	Replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>	Check the mass air flow and intake air temperature sensor. <ref. to<br="">FU(H6DO)-24, Mass Air Flow and Intake Air Temper- ature Sensor.></ref.>

BE:DTC P0181 FUEL TEMPERATURE SENSOR "A" CIRCUIT RANGE/PERFOR-MANCE

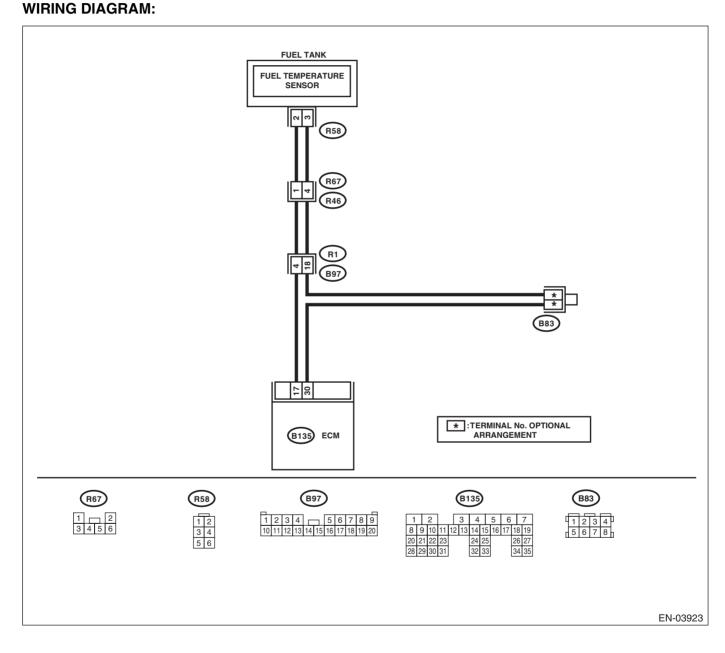
DTC DETECTING CONDITION:

Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-89, DTC P0181 FUEL TEMPERATURE SENSOR "A" CIRCUIT RANGE/PERFORMANCE, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0181.</ref.>	

BF:DTC P0182 FUEL TEMPERATURE SENSOR "A" CIRCUIT LOW INPUT DTC DETECTING CONDITION:

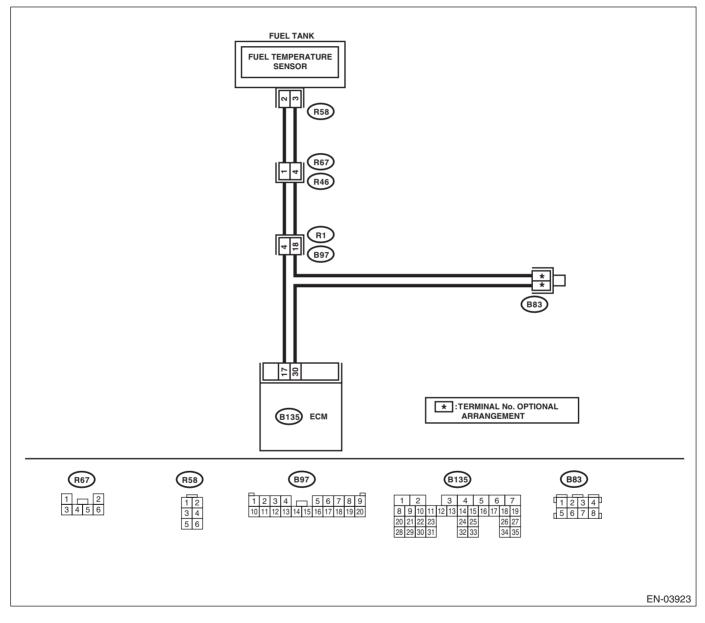
• Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-92, DTC P0182 FUEL TEMPERATURE SENSOR "A" CIRCUIT LOW INPUT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	 CHECK CURRENT DATA. 1) Start the engine. 2) Read the data of fuel temperature sensor signal using Subaru Select Monitor. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> 	Is the temperature above 120°C (248°F)?	Go to step 2.	Even if the mal- function indicator light illuminates, the circuit has returned to a nor- mal condition at this time.
2	 CHECK CURRENT DATA. 1) Turn the ignition switch to OFF. 2) Remove the access hole lid. 3) Disconnect the connector from fuel pump. 4) Turn the ignition switch to ON. 5) Read the data of fuel temperature sensor signal using Subaru Select Monitor. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> 	Is the temperature less than – 40°C (–40°F)?	Replace the fuel temperature sen- sor. <ref. to<br="">EC(H6DO)-8, Fuel Temperature Sen- sor.></ref.>	Repair ground short circuit in har- ness between fuel pump and ECM connector.

BG:DTC P0183 FUEL TEMPERATURE SENSOR "A" CIRCUIT HIGH INPUT DTC DETECTING CONDITION:

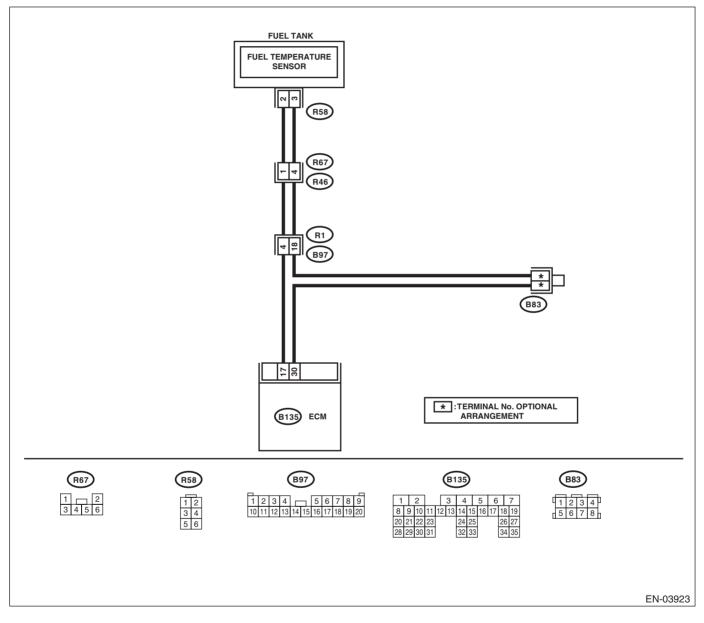
Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-94, DTC P0183 FUEL TEMPERATURE SENSOR "A" CIRCUIT HIGH INPUT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	 CHECK CURRENT DATA. 1) Start the engine. 2) Read the data of fuel temperature sensor signal using Subaru Select Monitor. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> 	Is the temperature less than – 40°C (–40°F)?	Go to step 2.	Repair the poor contact. NOTE: In this case, repair the following item: • Poor contact in fuel pump connec- tor • Poor contact in ECM connector • Poor contact in coupling connector • Poor contact in joint connector
2	 CHECK HARNESS BETWEEN FUEL TEM- PERATURE SENSOR AND ECM CONNEC- TOR. 1) Turn the ignition switch to OFF. 2) Remove the access hole lid. 3) Disconnect the connector from fuel pump. 4) Measure the voltage between fuel pump connector and chassis ground. <i>Connector & terminal</i> (R58) No. 2 (+) — Chassis ground (-): 	Is the voltage more than 10 V?	Repair battery short circuit of har- ness between ECM and fuel pump connector.	Go to step 3.
3	 CHECK HARNESS BETWEEN FUEL TEM- PERATURE SENSOR AND ECM CONNEC- TOR. 1) Turn the ignition switch to ON. 2) Measure the voltage between fuel pump connector and chassis ground. <i>Connector & terminal</i> (R58) No. 2 (+) — Chassis ground (-): 	Is the voltage more than 10 V?	Repair battery short circuit of har- ness between ECM and fuel pump connector.	Go to step 4.
4	CHECK HARNESS BETWEEN FUEL TEM- PERATURE SENSOR AND ECM CONNEC- TOR. Measure the voltage between fuel pump con- nector and chassis ground. Connector & terminal (R58) No. 2 (+) — Chassis 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 item: • 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

	Step	Check	Yes	No
5	CHECK HARNESS BETWEEN FUEL TEM-	Is the resistance less than 1	Replace the fuel	Repair the har-
	PERATURE SENSOR AND ECM CONNEC-	Ω?	temperature sen-	ness and connec-
	TOR.		sor. <ref. td="" to<=""><td>tor.</td></ref.>	tor.
	1) Turn the ignition switch to OFF.		EC(H6DO)-8, Fuel	NOTE:
	2) Disconnect the connectors from ECM.			In this case, repair
	Measure the resistance of harness		sor.>	the following item:
	between fuel pump connector and ECM.			 Open circuit in
	Connector & terminal			harness between
	(R58) No. 3 — (B135) No. 30:			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
				joint connector

BH:DTC P0196 ENGINE OIL TEMPERATURE SENSOR CIRCUIT RANGE/PER-FORMANCE

DTC DETECTING CONDITION:

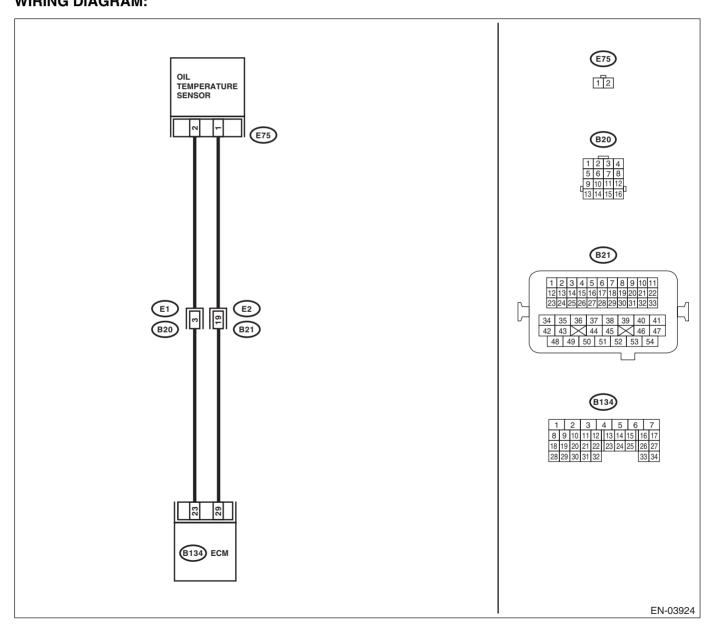
- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-96, DTC P0196 ENGINE OIL TEMPERATURE SENSOR CIRCUIT RANGE/PERFORMANCE, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- · Hard to start
- Erroneous idling
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



Step	Check	Yes	No
1 CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	"List of Diagnostic Trouble Code (DTC)". <ref. th="" to<=""><th></th></ref.>	

BI: DTC P0197 ENGINE OIL TEMPERATURE SENSOR LOW

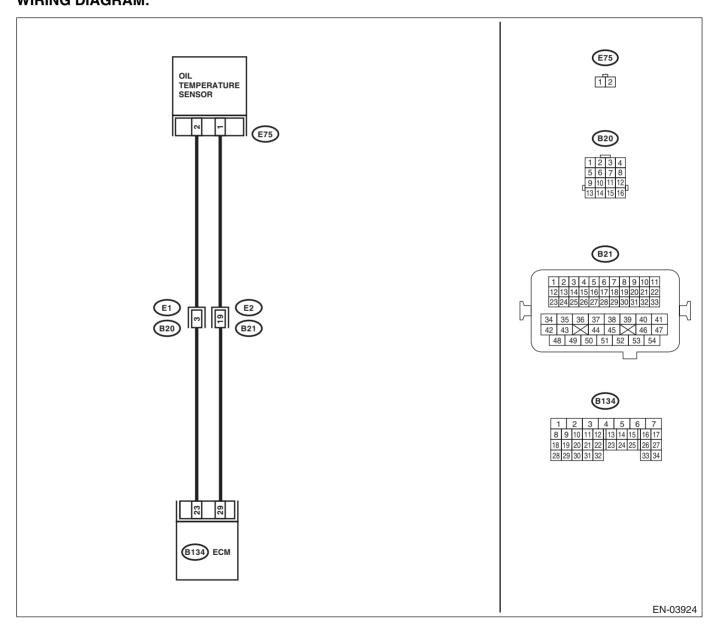
- DTC DETECTING CONDITION:
- Immediately at fault recognition
- GENERAL DESCRIPTION < Ref. to GD(H6DO)-98, DTC P0197 ENGINE OIL TEMPERATURE SENSOR LOW, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Hard to start
- Erroneous idling
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	 CHECK HARNESS BETWEEN OIL TEMPER- ATURE SENSOR AND ECM CONNECTOR. 1) Disconnect the connector from ECM and engine oil temperature sensor. 2) Measure the resistance of harness between engine oil temperature sensor con- nector and engine ground. Connector & terminal (B134) No. 23 — Engine ground: (B134) No. 29 — Engine ground: 	Is the resistance more than 1 MΩ?	Go to step 2.	Repair the ground short circuit between ECM and oil temperature sensor connector.
2	CHECK POOR CONTACT. Check poor contact of oil temperature sensor connector.	Is there poor contact in oil tem- perature sensor connector?	Repair the poor contact.	Replace the engine oil temper- ature sensor. <ref. to<br="">FU(H6DO)-28, Oil Temperature Sen- sor.></ref.>

BJ:DTC P0198 ENGINE OIL TEMPERATURE SENSOR HIGH

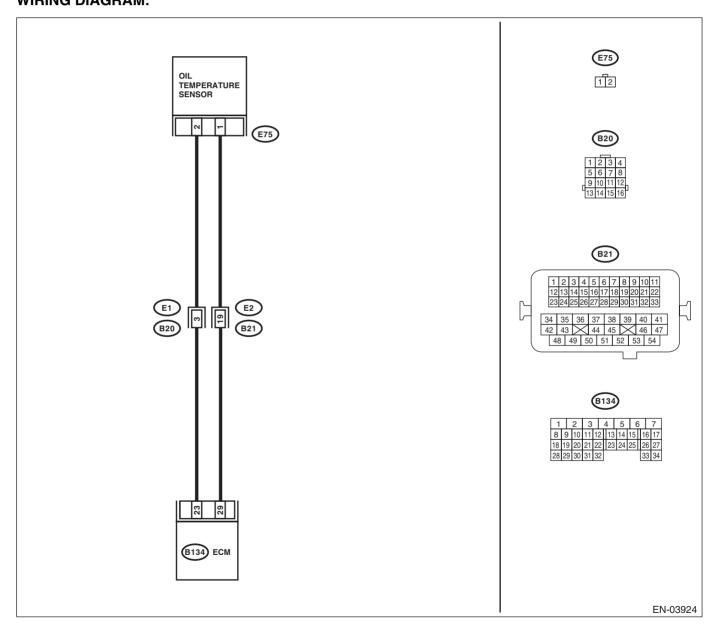
- DTC DETECTING CONDITION:
- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-99, DTC P0198 ENGINE OIL TEMPERATURE SENSOR HIGH, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Hard to start
- Erroneous idling
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN OIL TEMPER-	Is the voltage more than 10 V?	Repair the battery	Go to step 2.
	 ATURE SENSOR AND ECM CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the oil tem- 		short circuit of har- ness between ECM and oil tem-	
	perature sensor. 3) Measure the voltage between oil tempera-		perature sensor connector.	
	ture sensor connector and engine ground. Connector & terminal			
-	(E75) No. 2 (+) — Engine ground (–):			-
2	 CHECK HARNESS BETWEEN OIL TEMPER- ATURE SENSOR AND ECM CONNECTOR. 1) Turn the ignition switch to ON. 2) Measure the voltage between oil tempera- ture sensor connector and engine ground. Connector & terminal (E75) No. 2 (+) — Engine ground (-): 	Is the voltage more than 10 V?	Repair the battery short circuit of har- ness between ECM and oil tem- perature sensor connector.	Go to step 3 .
3	CHECK HARNESS BETWEEN OIL TEMPER- ATURE SENSOR AND ECM CONNECTOR. Measure the voltage between oil temperature sensor connector and engine ground. <i>Connector & terminal</i> (E75) No. 2 (+) — Engine ground (-):	Is the voltage more than 4 V?	Go to step 4.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit of harness between ECM and oil tem- perature sensor connector • Poor contact of oil temperature sen- sor connector • Poor contact in ECM connector • Poor contact in coupling connector
4	CHECK HARNESS BETWEEN OIL TEMPER- ATURE SENSOR AND ECM CONNECTOR. 1) Turn the ignition switch to OFF. 2) Measure the resistance of harness between oil temperature sensor connector and engine ground. Connector & terminal (E75) No. 1 — Engine ground:	Is the resistance less than 5 Ω?	Replace the engine oil temper- ature sensor. <ref. to<br="">FU(H6DO)-28, Oil Temperature Sen- sor.></ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit of harness between ECM and oil tem- perature sensor connector • Poor contact in oil temperature sen- sor connector • Poor contact in ECM connector • Poor contact in coupling connector • Poor contact in coupling connector

BK:DTC P0222 THROTTLE/PEDAL POSITION SENSOR/SWITCH "B" CIRCUIT LOW

DTC DETECTING CONDITION:

Immediately at fault recognition

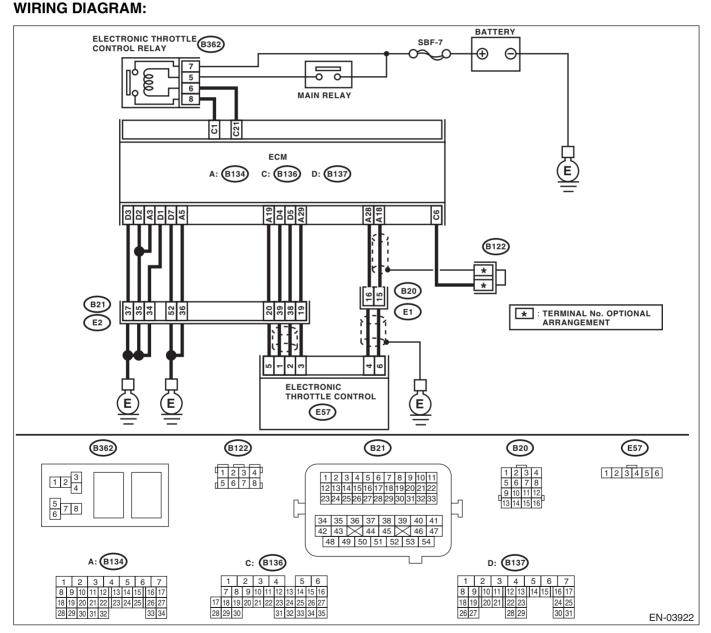
 GENERAL DESCRIPTION <Ref. to GD(H6DO)-100, DTC P0222 THROTTLE/PEDAL POSITION SEN-SOR/SWITCH "B" CIRCUIT LOW, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance
- Engine stalls.

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



EN(H6DO)(diag)-206

	Step	Check	Yes	No
1	 CHECK SENSOR OUTPUT. 1) Turn the ignition switch to ON. 2) Read the data of sub throttle sensor signal using Subaru Select Monitor. NOTE: 	Is the voltage more than 0.8 V?	Go to step 2 .	Go to step 3.
	Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. 			
2	CHECK POOR CONTACT. Check poor contact in connector between ECM and electronic throttle control.	Is there poor contact?	Repair the poor contact.	Temporary poor contact occurred, but it is normal at present.
3	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Disconnect the connectors from electronic throttle control. 4) Measure the resistance between ECM con- nector and electronic throttle control connector. Connector & terminal (B134) No. 28 — (E57) No. 4: (B134) No. 19 — (E57) No. 5: 	Is the resistance less than 1 Ω?	Go to step 4.	Repair the open circuit of harness connector.
4	CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. Measure the resistance between ECM connec- tor and chassis ground. Connector & terminal (B134) No. 28 — Chassis ground: (B134) No. 19 — Chassis ground:	Is the resistance more than 1 MΩ?	Go to step 5 .	Repair the chas- sis short circuit of harness.
5	 CHECK SENSOR POWER SUPPLY. Connect the ECM connector. Turn the ignition switch to ON. Measure the voltage between electronic throttle control connector and engine ground. <i>Connector & terminal</i> (E57) No. 5 (+) — Engine ground (-): 	Is the voltage 4.5 — 5.5 V?	Go to step 6 .	Repair the poor contact of ECM connector. Replace the ECM if defective. <ref. to FU(H6DO)-33, Engine Control Module (ECM).></ref.
6	 CHECK SHORT CIRCUIT INSIDE THE ECM. 1) Turn the ignition switch to OFF. 2) Measure the resistance between electronic throttle control connector and engine ground. <i>Connector & terminal</i> (E57) No. 4 — Engine ground: 	Is the resistance more than 10 Ω ?	Repair the poor contact of elec- tronic throttle con- trol connector. Replace the elec- tronic throttle con- trol if defective.	Repair the poor contact of ECM connector. Replace the ECM if defective. <ref. to FU(H6DO)-33, Engine Control Module (ECM).></ref.

BL:DTC P0223 THROTTLE/PEDAL POSITION SENSOR/SWITCH "B" CIRCUIT HIGH

DTC DETECTING CONDITION:

Immediately at fault recognition

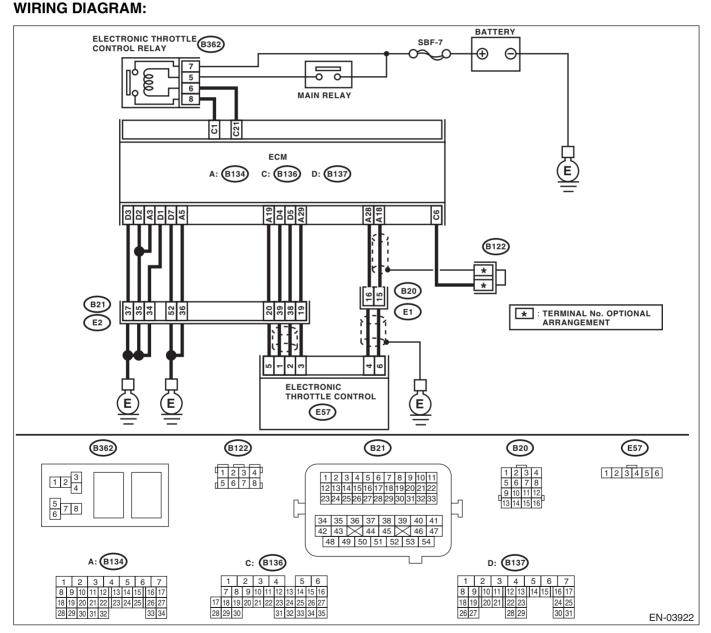
• GENERAL DESCRIPTION <Ref. to GD(H6DO)-102, DTC P0223 THROTTLE/PEDAL POSITION SEN-SOR/SWITCH "B" CIRCUIT HIGH, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance
- Engine stalls.

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



EN(H6DO)(diag)-208

	Stor	Check	Vaa	Na
L		Check	Yes	No
1	 CHECK SENSOR OUTPUT. 1) Turn the ignition switch to ON. 2) Read the data of sub throttle sensor signal using Subaru Select Monitor. NOTE: Subaru Select Monitor For detailed operation procedure, refer to 	Is the voltage less than 4.73 V?	Go to step 2.	Go to step 3 .
	"READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. 			
2	CHECK POOR CONTACT. Check poor contact in connector between ECM and electronic throttle control.	Is there poor contact in con- nector between ECM and elec- tronic throttle control?	Repair the poor contact.	Temporary poor contact occurred, but it is normal at present.
3	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Disconnect the connectors from electronic throttle control. 4) Measure the resistance between ECM connector and electronic throttle control connector. <i>Connector & terminal</i> (B134) No. 29 — (E57) No. 3: (B134) No. 28 — (E57) No. 4: 	Is the resistance less than 1 Ω?	Go to step 4.	Repair the open circuit of harness connector.
4	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. 1) Connect the ECM connector. 2) Measure the resistance between electronic throttle control connector and engine ground. <i>Connector & terminal</i> (E57) No. 3 — Engine ground: 	Is the resistance less than 5 Ω?	Go to step 5.	Repair the poor contact of ECM connector. Replace the ECM if defective. <ref. to FU(H6DO)-33, Engine Control Module (ECM).></ref.
5	CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. Measure the voltage between electronic throt- tle control connector and engine ground. <i>Connector & terminal</i> (E57) No. 4 (+) — Engine ground (–):	Is the voltage less than 10 V?	Go to step 6 .	Repair the battery short circuit of har- ness between ECM connector and electronic throttle control connector.
6	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Measure the resistance between connector terminals. Connector & terminal (B134) No. 28 — (B134) No. 19: 	Is the resistance more than 1 $M\Omega$?	Repair the poor contact. Replace the electronic throttle control.	Sensor power sup- ply circuit may be shorted.

BM:DTC P0230 FUEL PUMP PRIMARY CIRCUIT

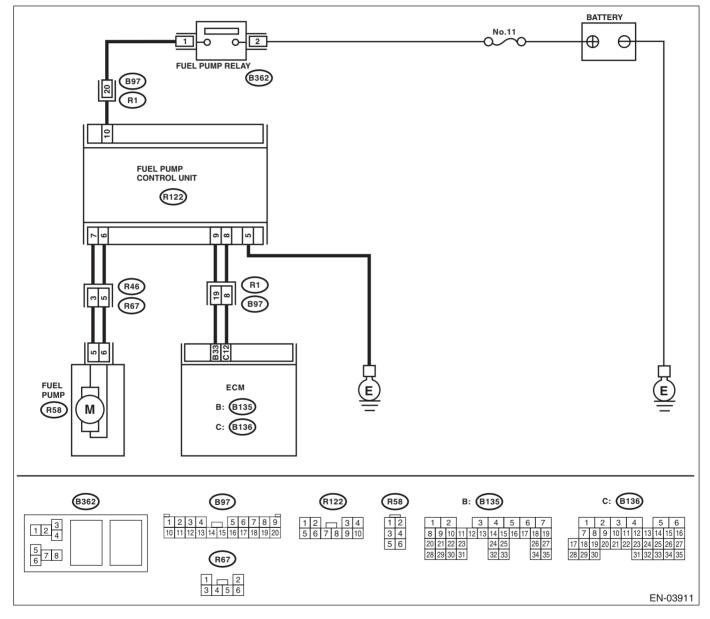
DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-104, DTC P0230 FUEL PUMP PRIMARY CIRCUIT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



	Step	Check	Yes	No
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 item: • Open or ground short circuit of har- ness between fuel pump relay and fuel pump control unit • Poor contact of fuel pump control unit connector • Poor contact of fuel pump relay connector
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 3.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit be- tween fuel pump control unit and chassis ground • Poor contact of fuel pump control unit connector
3	 CHECK HARNESS BETWEEN FUEL PUMP CONTROL UNIT AND FUEL PUMP CONNECTOR. 1) Disconnect the connector from fuel pump. 2) Measure the resistance of harness between fuel pump control unit and fuel pump connector. Connector & terminal (R122) No. 7 — (R58) No. 5: (R122) No. 6 — (R58) No. 6: 	Is the resistance less than 1 Ω ?	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 & 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.

	Step	Check	Yes	No
5	 CHECK HARNESS BETWEEN FUEL PUMP CONTROL UNIT AND ECM CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Measure the resistance of harness between fuel pump control unit and ECM connector. Connector & terminal (R122) No. 9 — (B135) No. 33: (B122) No. 8 — (F136) No. 12: 	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 item: • Open circuit be- tween fuel pump control unit and ECM • Poor contact of fuel pump control unit and ECM con- nector
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	CHECK POOR CONTACT. Check poor contact of ECM and fuel pump control unit connector.	Is there poor contact of ECM and fuel pump control unit con- nector?	Repair the poor contact of ECM and fuel pump control unit con- nector.	Go to step 8 .
8	CHECK EXPERIENCE OF RUNNING OUT OF FUEL.	Has the vehicle experienced running out of fuel?	Finish the diagno- sis. NOTE: DTC may be re- corded as a result of fuel pump idling while running out of fuel.	Fuel Pump Control Unit.>

BN:DTC P0301 CYLINDER 1 MISFIRE DETECTED

NOTE:

For the diagnostic procedure, refer to DTC P0306. <Ref. to EN(H6DO)(diag)-214, DTC P0306 CYLINDER 6 MISFIRE DETECTED, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

BO:DTC P0302 CYLINDER 2 MISFIRE DETECTED

NOTE:

For the diagnostic procedure, refer to DTC P0306. <Ref. to EN(H6DO)(diag)-214, DTC P0306 CYLINDER 6 MISFIRE DETECTED, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

BP:DTC P0303 CYLINDER 3 MISFIRE DETECTED

NOTE:

For the diagnostic procedure, refer to DTC P0306. <Ref. to EN(H6DO)(diag)-214, DTC P0306 CYLINDER 6 MISFIRE DETECTED, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

BQ:DTC P0304 CYLINDER 4 MISFIRE DETECTED

NOTE:

For the diagnostic procedure, refer to DTC P0306. <Ref. to EN(H6DO)(diag)-214, DTC P0306 CYLINDER 6 MISFIRE DETECTED, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

BR:DTC P0305 CYLINDER 5 MISFIRE DETECTED

NOTE:

For the diagnostic procedure, refer to DTC P0306. <Ref. to EN(H6DO)(diag)-214, DTC P0306 CYLINDER 6 MISFIRE DETECTED, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

BS:DTC P0306 CYLINDER 6 MISFIRE DETECTED

DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- Immediately at fault recognition (A misfire which could damage catalyst occurs.)

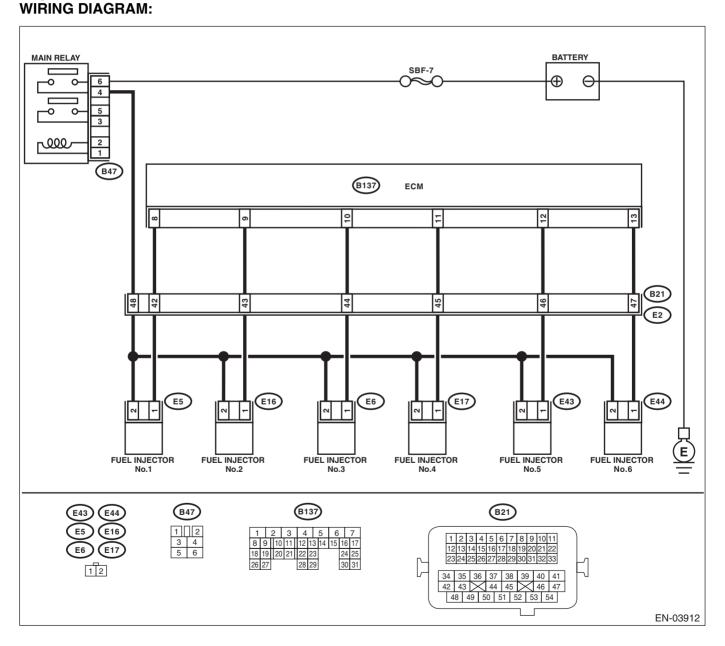
• GENERAL DESCRIPTION < Ref. to GD(H6DO)-111, DTC P0306 CYLINDER 6 MISFIRE DETECTED, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Engine stalls.
- Erroneous idling
- Rough driving

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



EN(H6DO)(diag)-214

Step	Check	Yes	No
CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0301, P0302, P303, P0304, P0305 and P0306.</ref.>	Go to step 2.
CHECK OUTPUT SIGNAL OF ECM. 1) Turn the ignition switch to ON. 2) Measure the voltage between ECM con- nector and chassis ground on faulty cylinders. Connector & terminal #1 (B137) No. 8 (+) — Chassis ground (-): #2 (B137) No. 9 (+) — Chassis ground (-): #3 (B137) No. 10 (+) — Chassis ground (-): #4 (B137) No. 11 (+) — Chassis ground (-): #5 (B137) No. 12 (+) — Chassis ground (-): #6 (B137) No. 13 (+) — Chassis ground (-):			Go to step 3.
 CHECK HARNESS BETWEEN FUEL INJECTOR AND ECM CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from fuel injector on faulty cylinders. 3) Measure the resistance between ECM connector and engine ground on faulty cylinders. Connector & terminal #1 (E5) No. 1 — Engine ground: #2 (E16) No. 1 — Engine ground: #3 (E6) No. 1 — Engine ground: #4 (E17) No. 1 — Engine ground: #5 (E43) No. 1 — Engine ground: #6 (E44) No. 1 — Engine ground: 	Is the resistance more than 1 MΩ?	Go to step 4.	Repair the ground short circuit of har- ness between fuel injector and ECM connector.
	Is the resistance less than 1 Ω?	Go to step 5.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit in harness between ECM and fuel in- jector connector • Poor contact in coupling connector
CHECK FUEL INJECTOR. Measure the resistance between fuel injector terminals on faulty cylinder. Terminals No. 1 — No. 2:	Is the resistance between 5 and 20 Ω ?	Go to step 6 .	Replace the faulty fuel injector. <ref. to FU(H6DO)-25, Fuel Injector.></ref.

	Step	Check	Yes	No
6	CHECK POWER SUPPLY LINE.	Is the voltage more than 10 V?	Repair the poor	Repair the har-
	1) Turn the ignition switch to ON.		contact of all con-	ness and connec-
	2) Measure the voltage between fuel injector		nectors in fuel	tor.
	and engine ground on faulty cylinders. Connector & terminal		injector circuit.	NOTE: In this case, repair
	#1 (E5) No. 2 (+) — Engine ground (–):			the following item:
	#2 (E16) No. 2 (+) — Engine ground (–):			 Open circuit of
	#3 (E6) No. 2 (+) — Engine ground (–):			harness between
	#4 (E17) No. 2 (+) — Engine ground (–):			main relay and fuel
	#5 (E43) No. 2 (+) — Engine ground (–):			injector on faulty
	#6 (E44) No. 2 (+) — Engine ground (–):			cylinders
				 Poor contact in coupling connector
				 Poor contact in
				main relay connec-
				tor
				 Poor contact in
				fuel injector con-
				nector on faulty
7	CHECK HARNESS BETWEEN FUEL INJEC-	Is the voltage more than 10 V2	Repair the battery	cylinders Go to step 8 .
1	TOR AND ECM CONNECTOR.	is the voltage more than to v	short circuit of har-	
	1) Turn the ignition switch to OFF.		ness between	
	2) Disconnect the connector from fuel injector		ECM and fuel	
	on faulty cylinders.		injector. After	
	 3) Turn the ignition switch to ON. 4) Massure the voltage between ECM con- 		repair, replace the	
	4) Measure the voltage between ECM con- nector and chassis ground on faulty cylinders.		ECM. <ref. to<br="">FU(H6DO)-33,</ref.>	
	Connector & terminal		Engine Control	
	#1 (B137) No. 8 (+) — Chassis ground (–):		Module (ECM).>	
	#2 (B137) No. 9 (+) — Chassis ground (–):			
	#3 (B137) No. 10 (+) — Chassis ground (–):			
	#4 (B137) No. 11 (+) — Chassis ground (-):			
	#5 (B137) No. 12 (+) — Chassis ground (–): #6 (B137) No. 13 (+) — Chassis ground (–):			
8	CHECK FUEL INJECTOR.	Is the resistance less than 1	Replace the faulty	Go to step 9.
-	1) Turn the ignition switch to OFF.	Ω?	fuel injector <ref.< th=""><th></th></ref.<>	
	2) Measure the resistance between fuel injec-		to FU(H6DO)-25,	
	tor terminals on faulty cylinder.		Fuel Injector.> and	
	Terminals		ECM. <ref. th="" to<=""><th></th></ref.>	
	No. 1 — No. 2:		FU(H6DO)-33, Engine Control	
			Module (ECM).>	
9	CHECK INSTALLATION OF CAMSHAFT PO-	Is the camshaft position sensor	Tighten the cam-	Go to step 10.
	SITION SENSOR/CRANKSHAFT POSITION	or crankshaft position sensor	shaft position sen-	
	SENSOR.	loosely installed?	sor or crankshaft	
10		lo the graph appropriate materia	position sensor.	Co to stan 11
10	CHECK CRANK PLATE.	Is the crank sprocket rusted or the teeth of crank plate bro-	Replace the crank plate. <ref. th="" to<=""><th>Go to step 11.</th></ref.>	Go to step 11.
		ken?	ME(H6DO)-62,	
			Cylinder Block.>	
11	CHECK INSTALLATION CONDITION OF	Is the timing chain dislocated	Correct the instal-	Go to step 12.
	TIMING CHAIN.	from its proper position?	lation condition of	
	Turn the crankshaft using ST, and align align-		timing chain. <ref.< th=""><th></th></ref.<>	
	ment mark on crank sprocket with alignment		to ME(H6DO)-44, Timing Chain	
	mark on cylinder block. ST 18252AA000 CRANKSHAFT		Timing Chain Assembly.>	
	SOCKET		Abornory.>	
i	COOKET			1

	Step	Check	Yes	No
12	CHECK FUEL LEVEL.	Is the fuel meter indication lower than the "Lower" level?	Replenish fuel so fuel meter indica- tion is higher than the "Lower" level. After replenishing fuel, Go to step 13 .	Go to step 13.
13	 CHECK STATUS OF MALFUNCTION INDI- CATOR LIGHT. 1) Clear the memory using the Subaru Select Monitor or the general scan tool. NOTE: • Subaru Select Monitor <ref. en(h6do)(diag)-27,="" select<br="" subaru="" to="">Monitor.></ref.> • General scan tool Refer to operating manuals for the general scan tool. 2) Start the engine, and drive the vehicle more than 10 minutes. 		Go to step 15.	Go to step 14.
14	CHECK CAUSE OF MISFIRE.	Was the cause of misfire iden- tified when the engine is run- ning?	Finish diagnostics operation, if the engine has no abnormality.	Repair the poor contact. NOTE: In this case, repair the following item: • Poor contact of 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 any fault in air intake system?	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?	
16	 CHECK MISFIRE SYMPTOM. 1) Turn the ignition switch to ON. 2) READ DTC. <ref. (dtc).="" code="" diagnostic="" en(h6do)(diag)-35,="" read="" to="" trouble=""></ref.> 	Does the Subaru Select Moni- tor or general scan tool indi- cate only one DTC?	Go to step 22.	Go to step 17.
17	CHECK ANY OTHER DTC ON DISPLAY.	Are DTC P0301 and P0302 displayed?	Go to step 23.	Go to step 18.
18	CHECK DTC ON DISPLAY.	Are DTC P0303 and P0304 displayed?	Go to step 24.	Go to step 19.
19	CHECK DTC ON DISPLAY.	Are DTC P0305 and P0306 displayed?	Go to step 25.	Go to step 20 .

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	Step	Check	Yes	No
20	CHECK DTC ON DISPLAY.	Are DTC P0301, P0303 and P0305 displayed?	Go to step 26.	Go to step 21.
21	CHECK DTC ON DISPLAY.	Are DTC P0302, P0304 and P0306 displayed?	Go to step 27.	Go to step 28.
22	ONLY ONE CYLINDER.	Is there any fault in the cylin- der?	Repair or replace faulty parts. NOTE: Check the follow- ing items. • Spark plug • Fuel injector • Compression ra- tio	Check DTC P0171, P0172, P0174 or P0175 using "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>
23	GROUP OF #1 AND #2 CYLINDERS.	Are there any faults in #1 and #2 cylinders?	lowing items. • Spark plug • Fuel injector • Ignition coil • Compression ratio • If any fault are not found, check the "IGNITION CONTROL SYS- TEM" of #1 and #2 cylinders side. <ref. en(h6do)<br="" to="">(diag)-64, IGNI- TION CONTROL SYSTEM, Diag- nostics for Engine Starting Failure.></ref.>	Check DTC P0171, P0172, P0174 or P0175 using "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>
24	GROUP OF #3 AND #4 CYLINDERS.	Are there any faults in #3 and #4 cylinders?	lowing items. • Spark plug • Fuel injector • Ignition coil • If any fault are not found, check	nostic Trouble Code (DTC).>

	Step	Check	Yes	No
25	GROUP OF #5 AND #6 CYLINDERS.	Are there any faults in #5 and #6 cylinders?	Repair or replace faulty parts. NOTE: • Check the fol- lowing items. • Spark plug • Fuel injector • Ignition coil • Compression ratio • If any fault are not found, check the "IGNITION CONTROL SYS- TEM" of #5 and #6 cylinders side. <ref. en(h6do)<br="" to="">(diag)-64, IGNI- TION CONTROL SYSTEM, Diag- nostics for Engine Starting Failure.></ref.>	
26	GROUP OF #1, #3 AND #5 CYLINDERS.	Is there any fault in #1, #3 and #5 cylinders?	Repair or replace faulty parts. NOTE: Check the follow- ing items. • Spark plug • Fuel injector	Check DTC P0171, P0172, P0174 or P0175 using "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>
27	GROUP OF #2, #4 AND #6 CYLINDERS.	Is there any fault in #2, #4 and #6 cylinders?	faulty parts. NOTE: Check the follow- ing items. • Spark plug • Fuel injector • Compression ra- tio • Skipping timing chain teeth	Check DTC P0171, P0172, P0174 or P0175 using "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>
28	CYLINDER AT RANDOM.	Is the engine idle rough?	Check DTC P0171, P0172, P0174 or P0175 using "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Repair or replace faulty parts. NOTE: Check the follow- ing items. • Spark plug • Fuel injector • Compression ra- tio

BT:DTC P0327 KNOCK SENSOR 1 CIRCUIT LOW (BANK 1 OR SINGLE SENSOR) DTC DETECTING CONDITION:

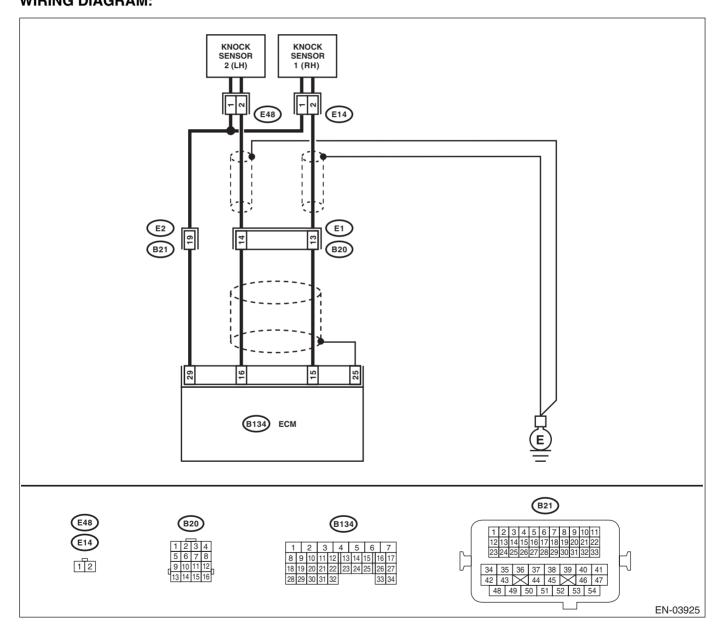
- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-112, DTC P0327 KNOCK SENSOR 1 CIRCUIT LOW (BANK 1 OR SINGLE SENSOR), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Poor driving performance
- Knocking occurs.

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	 CHECK HARNESS BETWEEN KNOCK SENSOR AND ECM CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Measure the resistance of harness between ECM harness connector and chassis ground. Connector & terminal (B134) No. 15 — Chassis ground: 	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 item: • Open circuit in harness between knock sensor and ECM connector • Poor contact in knock sensor con- nector • Poor contact in coupling connector
2	 CHECK HARNESS BETWEEN KNOCK SENSOR AND ECM CONNECTOR. 1) Disconnect the connector from knock sensor. 2) Measure the resistance of harness between knock sensor connector terminal and ECM connector. <i>Connector & terminal</i> (B134) No. 15 — (E14) No. 2: (B134) No. 29 — (E14) No. 1: 	Is the resistance less than 1 Ω?	Go to step 3.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit in harness between knock sensor and ECM connector • Poor contact in knock sensor con- nector • Poor contact in coupling connector
3	CHECK KNOCK SENSOR. Measure the resistance between knock sensor connector terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance more than 700 kΩ?	Replace the knock sensor. <ref. to<br="">FU(H6DO)-21, Knock Sensor.></ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Poor contact in knock sensor con- nector

BU:DTC P0328 KNOCK SENSOR 1 CIRCUIT HIGH (BANK 1 OR SINGLE SENSOR) DTC DETECTING CONDITION:

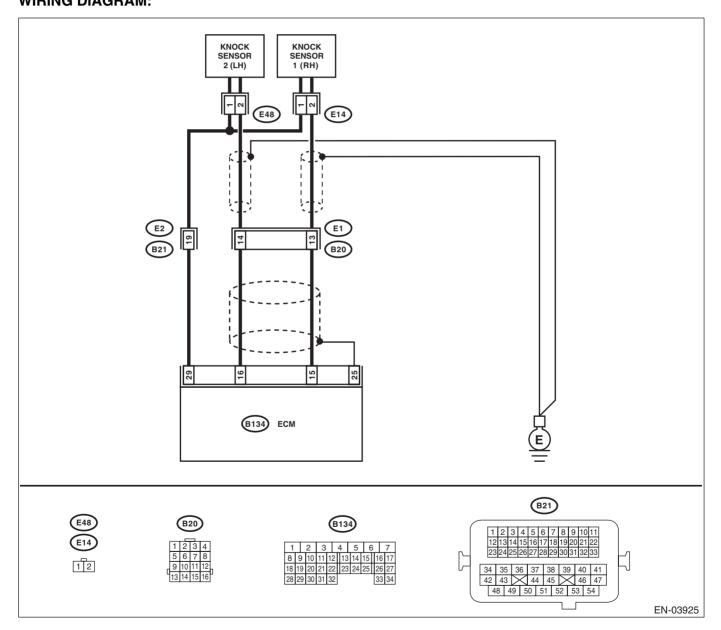
- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-114, DTC P0328 KNOCK SENSOR 1 CIRCUIT HIGH (BANK 1 OR SINGLE SENSOR), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Poor driving performance
- Knocking occurs.

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN KNOCK SEN- SOR AND ECM CONNECTOR. Measure the resistance of harness between ECM connector and chassis ground. <i>Connector & terminal</i> (B134) No. 15 — Chassis ground:	Is the resistance less than 400 $k\Omega$?	Go to step 2.	Go to step 3.
2	 CHECK KNOCK SENSOR. 1) Disconnect the connector from knock sensor. 2) Measure the resistance between knock sensor connector terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i> 	Is the resistance less than 400 kΩ?	Replace the knock sensor. <ref. to<br="">FU(H6DO)-21, Knock Sensor.></ref.>	Repair the ground short circuit of har- ness between knock sensor con- nector and ECM connector. NOTE: The harness be- tween both connec- tors are shielded. Repair the short circuit of harness covered with shield.
3	 CHECK INPUT SIGNAL OF ECM. 1) Connect the connectors to ECM and knock sensor. 2) Turn the ignition switch to ON. 3) Measure the voltage between ECM and chassis ground. Connector & terminal (B134) No. 15 (+) — Chassis ground (-): 	Is the voltage more than 2 V?	Even if the mal- function indicator light illuminates, the circuit has returned to a nor- mal condition at this time. (How- ever, the possibility of poor contact still remains.) NOTE: In this case, repair the following item: • Poor contact in knock sensor con- nector • Poor contact in ECM connector • Poor contact in coupling connector	

BV:DTC P0332 KNOCK SENSOR 2 CIRCUIT LOW (BANK 2)

DTC DETECTING CONDITION:

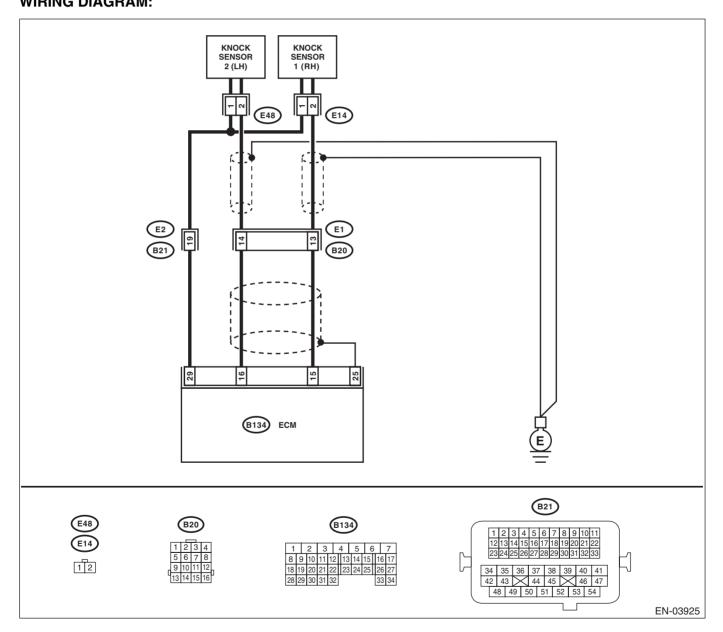
- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-115, DTC P0332 KNOCK SENSOR 2 CIRCUIT LOW (BANK 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Driving performance problem
- Knocking is occurred.

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN KNOCK SEN- SOR AND ECM CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Measure the resistance of harness between ECM harness connector and chassis ground. Connector & terminal (B134) No. 16 — Chassis ground:	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 item: • Open circuit in harness between knock sensor and ECM connector • Poor contact in knock sensor con- nector • Poor contact in coupling connector
2	 CHECK HARNESS BETWEEN KNOCK SENSOR AND ECM CONNECTOR. 1) Disconnect the connector from knock sensor. 2) Measure the resistance of harness between knock sensor connector terminal and ECM connector. <i>Connector & terminal</i> (B134) No. 16 — (E48) No. 2: (B134) No. 29 — (E48) No. 1: 	Is the resistance less than 1 Ω?	Go to step 3.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit in harness between knock sensor and ECM connector • Poor contact in knock sensor con- nector • Poor contact in coupling connector
3	CHECK KNOCK SENSOR. Measure the resistance between knock sensor connector terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance more than 700 kΩ?	Replace the knock sensor. <ref. to<br="">FU(H6DO)-21, Knock Sensor.></ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Poor contact in knock sensor con- nector

BW:DTC P0333 KNOCK SENSOR 2 CIRCUIT HIGH (BANK 2)

DTC DETECTING CONDITION:

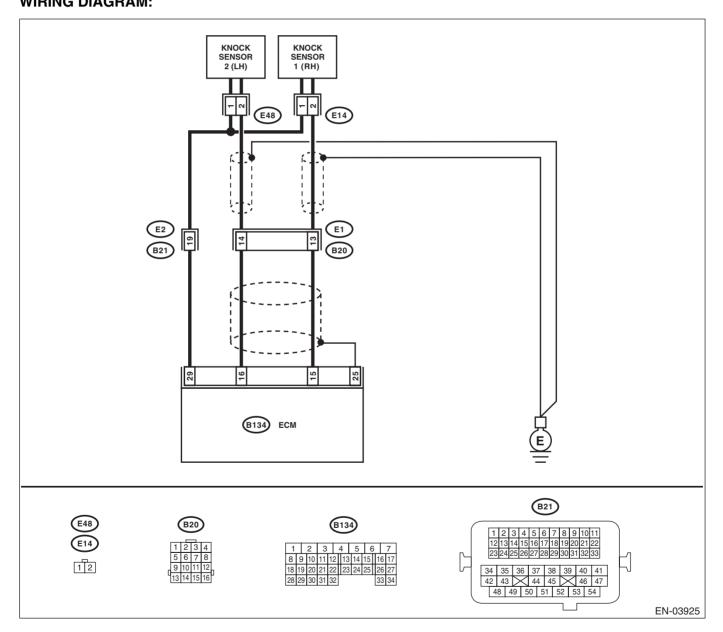
- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-115, DTC P0333 KNOCK SENSOR 2 CIRCUIT HIGH (BANK 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Driving performance problem
- Knocking occurs.

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN KNOCK SEN- SOR AND ECM CONNECTOR. Measure the resistance of harness between ECM connector and chassis ground. <i>Connector & terminal</i> (B134) No. 16 — Chassis ground:	Is the resistance less than 400 $k\Omega$?	Go to step 2.	Go to step 3.
2	 CHECK KNOCK SENSOR. 1) Disconnect the connector from knock sensor. 2) Measure the resistance between knock sensor connector terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i> 	Is the resistance less than 400 kΩ?	Replace the knock sensor. <ref. to<br="">FU(H6DO)-21, Knock Sensor.></ref.>	Repair the ground short circuit of har- ness between knock sensor con- nector and ECM connector. NOTE: The harness be- tween both connec- tors are shielded. Repair the short circuit of harness covered with shield.
3	 CHECK INPUT SIGNAL OF ECM. 1) Connect the connectors to ECM and knock sensor. 2) Turn the ignition switch to ON. 3) Measure the voltage between ECM and chassis ground. Connector & terminal (B134) No. 16 (+) — Chassis ground (-): 	Is the voltage more than 2 V?	Even if the mal- function indicator light illuminates, the circuit has returned to a nor- mal condition at this time. (How- ever, the possibility of poor contact still remains.) NOTE: In this case, repair the following item: • Poor contact in knock sensor con- nector • Poor contact in ECM connector • Poor contact in coupling connector	

BX:DTC P0335 CRANKSHAFT POSITION SENSOR "A" CIRCUIT

DTC DETECTING CONDITION:

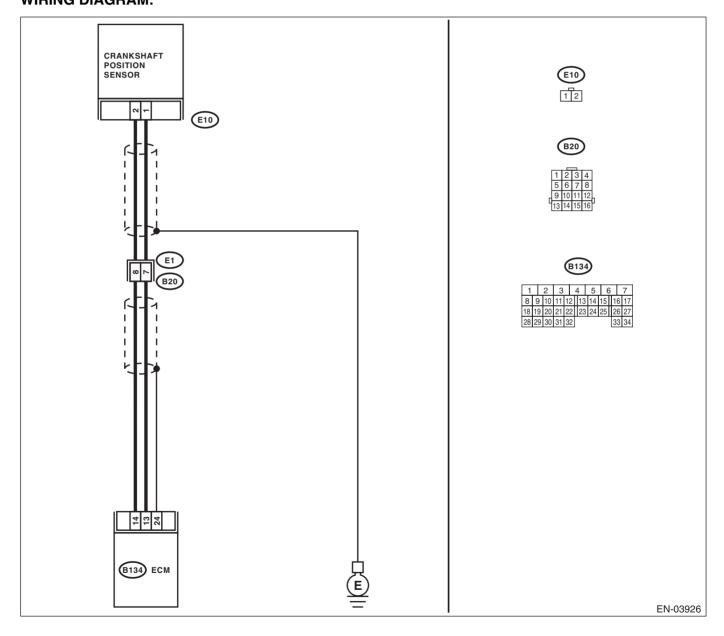
- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-116, DTC P0335 CRANKSHAFT POSITION SENSOR "A" CIRCUIT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Engine stalls.
- Failure of engine to start

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN CRANK-	Is the resistance more than	Repair the har-	Go to step 2.
	 SHAFT POSITION SENSOR AND ECM CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from crankshaft position sensor. 	100 kΩ?	ness and connec- tor. NOTE: In this case, repair the following item:	
	 3) Measure the resistance of harness between crankshaft position sensor connector and engine ground. Connector & terminal (E10) No. 1 — Engine ground: 		Open circuit in harness between crankshaft posi- tion sensor and ECM connector	
			 Poor contact in ECM connector Poor contact in coupling connector 	
2	CHECK HARNESS BETWEEN CRANK- SHAFT POSITION SENSOR AND ECM CON- NECTOR. Measure the resistance of harness between crankshaft position sensor connector and engine ground. <i>Connector & terminal</i> (E10) No. 1 — Engine ground:		short circuit of har- ness between crankshaft posi- tion sensor and ECM connector. NOTE: The harness be- tween both connec- tors are shielded. Repair the ground short circuit of har- ness with shield.	Go to step 3.
3	CHECK HARNESS BETWEEN CRANK- SHAFT POSITION SENSOR AND ECM CON- NECTOR. Measure the resistance of harness between crankshaft position sensor connector and engine ground. <i>Connector & terminal</i> (E10) No. 2 — Engine ground:		Go to step 4.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit in harness between crankshaft posi- tion sensor and ECM connector • Poor contact in ECM connector • Poor contact in coupling connector
4	CHECK CONDITION OF CRANKSHAFT PO- SITION SENSOR.	Is the crankshaft position sen- sor installation bolt tightened securely?	Go to step 5 .	Tighten the crank- shaft position sen- sor installation bolt securely.
5	 CHECK CRANKSHAFT POSITION SENSOR. 1) Remove the crankshaft position sensor. 2) Measure the resistance between connector terminals of crankshaft position sensor. Terminals No. 1 - No. 2: 	Is the resistance between 1 and 4 kΩ?	Repair the poor contact of crank- shaft position sen- sor connector.	Replace the crank- shaft position sen- sor. <ref. to<br="">FU(H6DO)-19, Crankshaft Posi- tion Sensor.></ref.>

BY:DTC P0336 CRANKSHAFT POSITION SENSOR "A" CIRCUIT RANGE/PER-FORMANCE

DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

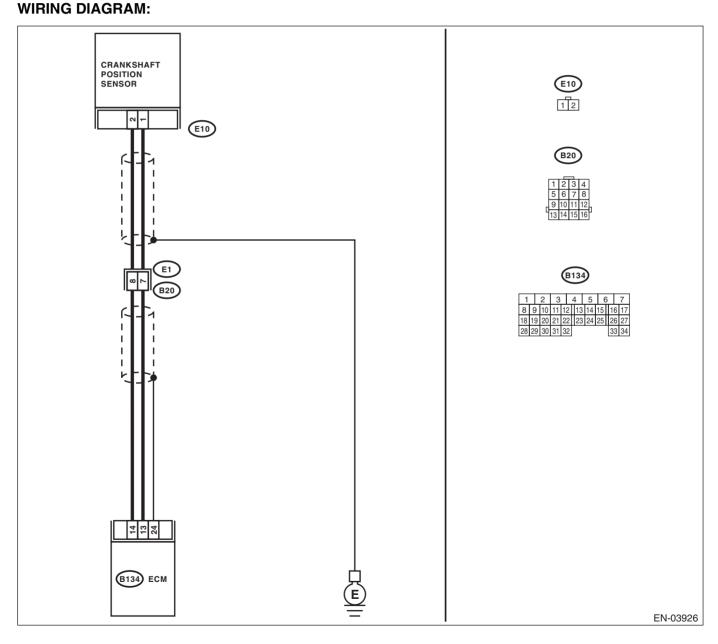
• GENERAL DESCRIPTION <Ref. to GD(H6DO)-118, DTC P0336 CRANKSHAFT POSITION SENSOR "A" CIRCUIT RANGE/PERFORMANCE, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Engine stalls.
- Failure of engine to start

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
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 PLATE.	Are the crankshaft plate teeth cracked or damaged?	Replace the crank- shaft plate.	Go to step 4.
4	CHECK INSTALLATION CONDITION OF TIMING CHAIN. Turn the crankshaft, and align alignment mark on crank sprocket with alignment mark on cyl- inder block.	Is the timing chain dislocated from its proper position?	Correct the instal- lation condition of timing chain. <ref. to ME(H6DO)-44, Timing Chain Assembly.></ref. 	Replace the crank- shaft position sen- sor. <ref. to<br="">FU(H6DO)-19, Crankshaft Posi- tion Sensor.></ref.>

BZ:DTC P0340 CAMSHAFT POSITION SENSOR "A" CIRCUIT (BANK 1 OR SIN-GLE SENSOR)

DTC DETECTING CONDITION:

Immediately at fault recognition

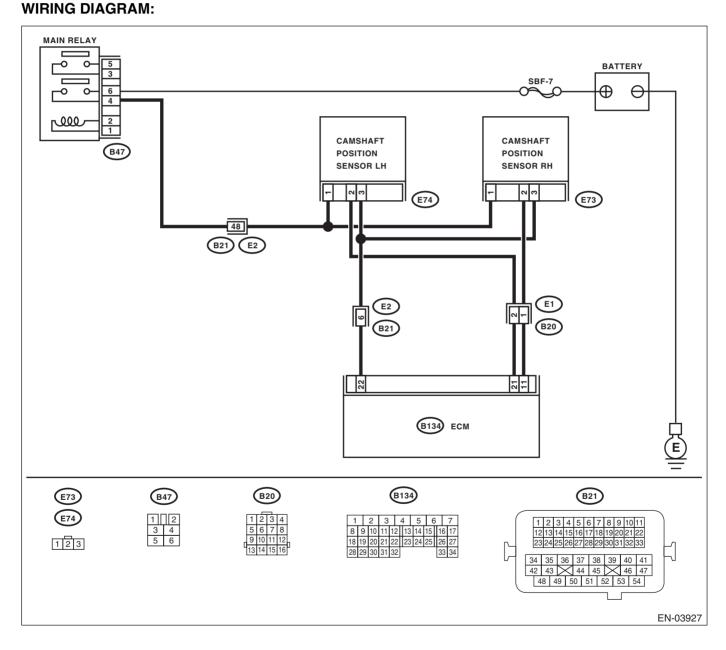
• GENERAL DESCRIPTION <Ref. to GD(H6DO)-120, DTC P0340 CAMSHAFT POSITION SENSOR "A" CIRCUIT (BANK 1 OR SINGLE SENSOR), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Engine stalls.
- Failure of engine to start

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
2	 CHECK POWER SUPPLY OF CAMSHAFT POSITION SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from camshaft position sensor. 3) Measure the voltage between camshaft position sensor connector and engine ground. Connector & terminal (E73) No. 1 (+) — Engine ground (-): 		Repair the battery short circuit between main relay connector and camshaft position sensor connector.	Go to step 3 .
3	 CHECK POWER SUPPLY OF CAMSHAFT POSITION SENSOR. 1) Turn the ignition switch to ON. 2) Measure the voltage between camshaft position sensor connector and engine ground. <i>Connector & terminal</i> (E73) No. 1 (+) — Engine ground (-): 	Is the voltage more than 10 V?	Go to step 4.	Repair the open or ground short cir- cuit between main relay connector and camshaft position sensor connector.
4	 CHECK HARNESS BETWEEN CAMSHAFT POSITION SENSOR CONNECTOR AND ECM. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM. 3) Measure the resistance between camshaft position sensor connector and ECM. <i>Connector & terminal</i> (E73) No. 2 — (B134) No. 11: (E73) No. 3 — (B134) No. 22: 	Is the resistance less than 1 Ω ?	Go to step 5 .	Repair the open circuit between camshaft position sensor and ECM.
5	CHECK HARNESS BETWEEN CAMSHAFT POSITION SENSOR CONNECTOR AND ECM. Measure the resistance between camshaft position sensor connector and engine ground. Connector & terminal (E73) No. 2 — Engine ground:	Is the resistance more than 1 $M\Omega$?	Go to step 6 .	Repair the ground short circuit between camshaft position sensor and ECM.
6	CHECK CONDITION OF CAMSHAFT POSI- TION SENSOR.	Is the camshaft position sensor installation bolt tightened securely?	Go to step 7.	Tighten the cam- shaft position sen- sor installation bolt securely.
7	CHECK CAMSHAFT POSITION SENSOR. Check waveform of camshaft position sensor. <ref. control<br="" en(h6do)(diag)-17,="" engine="" to="">Module (ECM) I/O Signal.></ref.>	Is there any abnormality in waveform?	Replace the cam- shaft position sen- sor. <ref. to<br="">FU(H6DO)-20, Camshaft Position Sensor.></ref.>	Go to step 8.
8	CHECK POOR CONTACT. Check the poor contact of ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact of ECM connector.	Replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>

CA:DTC P0345 CAMSHAFT POSITION SENSOR "A" CIRCUIT (BANK 2) DTC DETECTING CONDITION:

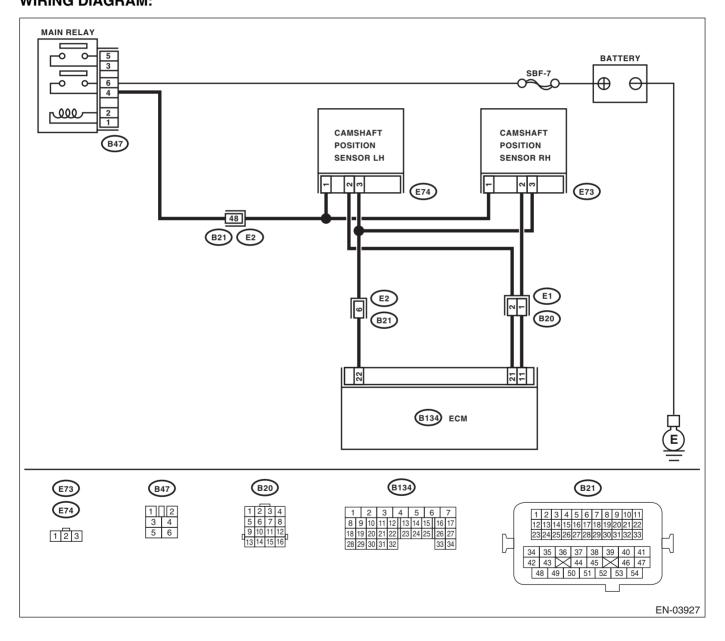
- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-122, DTC P0345 CAMSHAFT POSITION SENSOR "A" CIRCUIT (BANK 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Engine stalls.
- Failure of engine to start

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
2	 CHECK POWER SUPPLY OF CAMSHAFT POSITION SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from camshaft position sensor. 3) Measure the voltage between camshaft position sensor connector and engine ground. Connector & terminal (E74) No. 1 (+) — Engine ground (-): 		Repair the battery short circuit between main relay connector and camshaft position sensor connector.	Go to step 3 .
3	 CHECK POWER SUPPLY OF CAMSHAFT POSITION SENSOR. 1) Turn the ignition switch to ON. 2) Measure the voltage between camshaft position sensor connector and engine ground. <i>Connector & terminal</i> (E74) No. 1 (+) — Engine ground (-): 	Is the voltage more than 10 V?	Go to step 4.	Repair the open or ground short cir- cuit between main relay connector and camshaft position sensor connector.
4	 CHECK HARNESS BETWEEN CAMSHAFT POSITION SENSOR CONNECTOR AND ECM. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM. 3) Measure the resistance between camshaft position sensor connector and ECM. Connector & terminal (E74) No. 2 — (B134) No. 21: (E74) No. 3 — (B134) No. 22: 	Is the resistance less than 1 Ω ?	Go to step 5.	Repair the open circuit between camshaft position sensor and ECM.
5	CHECK HARNESS BETWEEN CAMSHAFT POSITION SENSOR CONNECTOR AND ECM. Measure the resistance between camshaft position sensor connector and engine ground. Connector & terminal (E74) No. 2 — Engine ground:	Is the resistance more than 1 $M\Omega$?	Go to step 6 .	Repair the ground short circuit between camshaft position sensor and ECM.
6	CHECK CONDITION OF CAMSHAFT POSI- TION SENSOR.	Is the camshaft position sensor installation bolt tightened securely?	Go to step 7.	Tighten the cam- shaft position sen- sor installation bolt securely.
7	CHECK CAMSHAFT POSITION SENSOR. Check waveform of camshaft position sensor. <ref. control<br="" en(h6do)(diag)-17,="" engine="" to="">Module (ECM) I/O Signal.></ref.>	Is there any abnormality in waveform?	Replace the cam- shaft position sen- sor. <ref. to<br="">FU(H6DO)-20, Camshaft Position Sensor.></ref.>	Go to step 8.
8	CHECK POOR CONTACT. Check the poor contact of ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact of ECM connector.	Replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>

CB:DTC P0420 CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (BANK 1) DTC DETECTING CONDITION:

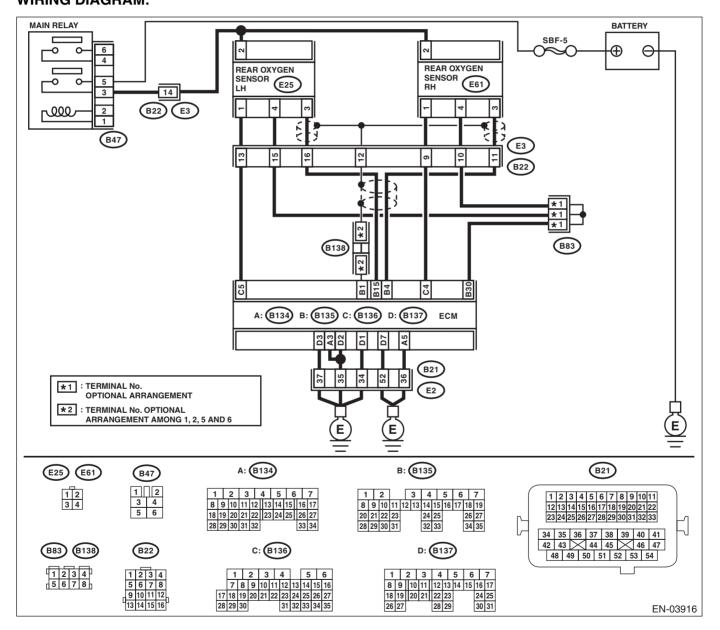
- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION < Ref. to GD(H6DO)-123, DTC P0420 CATALYST SYSTEM EFFICIENCY BE-LOW THRESHOLD (BANK 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Engine stalls.
- Idle mixture is out of specifications.

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



EN(H6DO)(diag)-236

	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0420.</ref.>	Go to step 2.
2	CHECK EXHAUST SYSTEM.	Is there any fault in exhaust	Repair or replace	Go to step 3.
	 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 catalytic converter Loose part and improper installation of front oxygen (A/F) sensor or rear oxygen sensor 	system?	the exhaust sys- tem. <ref. to<br="">EX(H6DO)-2, General Descrip- tion.></ref.>	
3	CHECK WAVEFORM DATA ON SUBARU SELECT MONITOR (WHILE DRIVING). 1) Drive the vehicle at a constant speed of 80 - 112 km/h (50 - 70 MPH). 2) Keep the condition of step 1) for 5 minutes, then read the waveform data in a driving condi- tion using Subaru Select Monitor. Rear O2 Sensor I.E A/F Sensor #1 	Is normal waveform pattern displayed?	Contact with your SOA Service Cen- ter. NOTE: The probable cause is consid- ered as the deteri- oration of multiple parts.	Go to step 4.
	A/F Sensor #1			

EN(H6DO)(diag)-237

	Step	Check	Yes	No
4	CHECK WAVEFORM DATA ON SUBARU	Is normal waveform pattern	Go to step 10.	Go to step 5.
	SELECT MONITOR (WHILE IDLING).	displayed?	•	•
	1) Idle the engine.			
	2) Under the condition of step 1), read the			
	waveform data using Subaru Select Monitor.			
	Rear 02 Sensor			
	TIME[\$] Ø 10 20 30 40			
	Rear 02			
	Sensor			
	TIME[≤] Ø 1Ø 2Ø 3Ø 4Ø			
	EN-04681			
5	CHECK REAR OXYGEN SENSOR VOLT- AGE.	Is the voltage more than 490 mV?	Go to step 9.	Go to step 6.
	1) Warm-up the engine until engine coolant			
	temperature is above 70°C (158°F), and keep the engine speed at 3,000 rpm. (Max. 2 min-			
	utes)			
	2) Read the voltage of rear oxygen (A/F) sen-			
	sor using Subaru Select Monitor.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE".			
	Ref. to EN(H6DO)(diag)-27, Subaru Select			
	Monitor.>			
6			Dry the water thor-	Go to step 7.
7	TOR AND COUPLING CONNECTOR.	tor?	oughly.	Co to star 9
7	CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR.	Is the resistance more than 3 Ω ?	Repair the open circuit of harness	Go to step 8 .
	1) Turn the ignition switch to OFF.	22.	between ECM and	
	2) Disconnect the connector from ECM and		rear oxygen sen-	
	rear oxygen sensor.		sor connector.	
	3) Measure the resistance of harness			
	between ECM and rear oxygen sensor con- nector.			
	Connector & terminal			
	(B135) No. 15 — (E25) No. 3:			
	(B135) No. 30 — (E25) No. 4:			
	(B135) No. 4 — (E61) No. 3: (B135) No. 20 (E61) No. 4:			
	(B135) No. 30 — (E61) No. 4:	<u> </u>		

	Step	Check	Yes	No
8	 CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR. 1) Turn the ignition switch to ON. 2) Measure the voltage between rear oxygen sensor connector and chassis ground. <i>Connector & terminal</i> (E25) No. 3 (+) — Chassis ground (-): (E61) No. 3 (+) — Chassis ground (-): 	Is the voltage 0.2 — 0.5 V?	Go to step 11.	Repair the har- ness and connec- tor. NOTE: Repair the follow- ing. • Open circuit in harness between rear oxygen sen- sor and ECM con- nector • Poor contact in rear oxygen sen- sor and ECM con- nector • Poor contact in ECM connector
9	 CHECK REAR OXYGEN SENSOR VOLT- AGE. 1) Warm-up the engine until engine coolant temperature is above 70°C (158°F), and rap- idly reduce the engine speed from 3,000 rpm. 2) Read the voltage of rear oxygen (A/F) sen- sor using Subaru Select Monitor. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. 		Contact with your SOA Service Cen- ter. NOTE: The probable cause is consid- ered as the deteri- oration of multiple parts.	Go to step 6 .
10	CHECK CATALYTIC CONVERTER.	Is the catalytic converter dam- aged?	Replace the cata- lytic converter. <ref. to<br="">EC(H6DO)-3, Front Catalytic Converter.></ref.>	Contact with your SOA Service Cen- ter. NOTE: The probable cause is consid- ered as the deteri- oration of multiple parts.
11	 CHECK REAR OXYGEN SENSOR SHIELD. 1) Turn the ignition switch to OFF. 2) Bare the harness sensor shield on the body side of rear oxygen sensor connector. 3) Measure the resistance between sensor shield and chassis ground. 	Is resistance less than 1 Ω ?	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>	Repair the open circuit of rear oxy- gen sensor har- ness.

CC:DTC P0442 EVAPORATIVE EMISSION CONTROL SYSTEM LEAK DETECTED (SMALL LEAK)

DTC DETECTING CONDITION:

Two consecutive driving cycles with fault

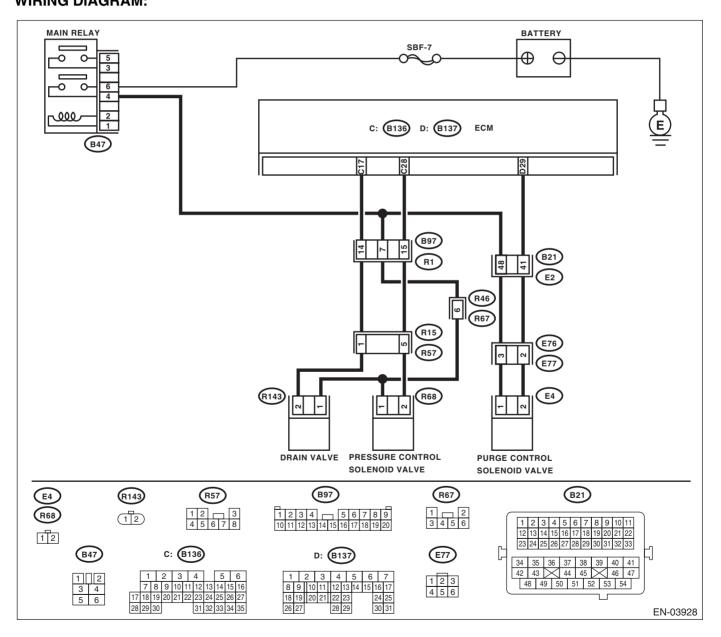
• GENERAL DESCRIPTION < Ref. to GD(H6DO)-125, DTC P0442 EVAPORATIVE EMISSION CONTROL SYSTEM LEAK DETECTED (SMALL LEAK), Diagnostic Trouble Code (DTC) Detecting Criteria.>

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, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
2	 CHECK FUEL FILLER CAP. 1) Turn the 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 has caught while tightening. 	Is the fuel filler cap tightened securely?	Go to step 3 .	Tighten fuel filler cap securely.
3	CHECK FUEL FILLER CAP.	Is the fuel filler cap genuine?	Go to step 4.	Replace with a 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. to<br="">FU(H6DO)-46, Fuel Filler Pipe.></ref.>	Go to step 5.
5	 CHECK DRAIN VALVE. 1) Connect the test mode connector. 2) Turn the ignition switch to ON. 3) Operate the drain valve. NOTE: Drain valve operation can be executed using Subaru Select Monitor. Regarding the procedures, refer to "Compulsory Valve Operation Check Mode". <ref. check="" compulsory="" en(h6do)(diag)-46,="" mode.="" operation="" to="" valve=""></ref.> 		Go to step 6 .	Replace the drain valve. <ref. to<br="">EC(H6DO)-14, Drain Valve.></ref.>
6	CHECK PURGE CONTROL SOLENOID VALVE. Operate the purge control solenoid valve. NOTE: Purge control solenoid valve operation can be executed using Subaru Select Monitor. Re- garding the procedures, refer to "Compulsory Valve Operation Check Mode". <ref. to<br="">EN(H6DO)(diag)-46, Compulsory Valve Opera- tion Check Mode.></ref.>		Go to step 7.	Replace the purge control solenoid valve. <ref. to<br="">EC(H6DO)-6, Purge Control Solenoid Valve.></ref.>
7	CHECK PRESSURE CONTROL SOLENOID VALVE. Operate the pressure control solenoid valve. NOTE: The pressure control solenoid valve operation can be executed using the Subaru Select Mon- itor. Regarding the procedures, refer to "Com- pulsory Valve Operation Check Mode". <ref. to<br="">EN(H6DO)(diag)-46, Compulsory Valve Opera- tion Check Mode.></ref.>		Go to step 8.	Replace the pres- sure control sole- noid valve. <ref. to EC(H6DO)-11, Pressure Control Solenoid Valve.></ref.

	Step	Check	Yes	No
8	CHECK EVAPORATIVE EMISSION CON- TROL SYSTEM LINE. Turn the ignition switch to OFF.	Is there a hole of more than 1.0 mm (0.04 in) dia. on evapora- tion line?	Repair or replace the evaporation line. <ref. to<br="">FU(H6DO)-56, Fuel Delivery, Return and Evapo- ration Lines.></ref.>	Go to step 9.
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(H6DO)-5, Canister.></ref. 	Go to step 10 .
10	CHECK FUEL TANK. Remove the fuel tank. <ref. fu(h6do)-39,<br="" to="">Fuel Tank.></ref.>	Is the fuel tank damaged or is there any hole of more than 1.0 mm (0.04 in) dia. in it?	Repair or replace the fuel tank. <ref. to FU(H6DO)-39, Fuel Tank.></ref. 	Go to step 11.
11	CHECK ANY OTHER MECHANICAL TROU- BLE IN EVAPORATIVE EMISSION CON- TROL SYSTEM.	Is there any hole of more than 1.0 mm (0.04 in) dia., crack, 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.

CD:DTC P0447 EVAPORATIVE EMISSION CONTROL SYSTEM VENT CONTROL CIRCUIT OPEN

DTC DETECTING CONDITION:

• Immediately at fault recognition

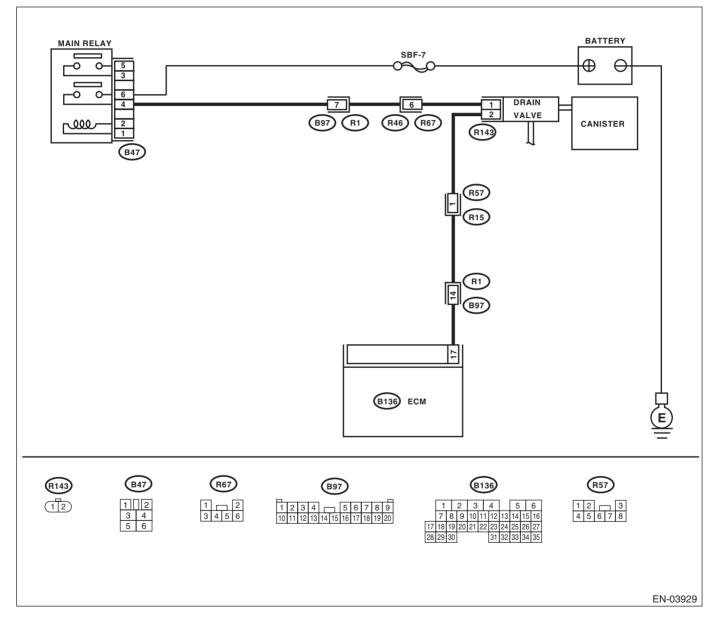
• GENERAL DESCRIPTION < Ref. to GD(H6DO)-140, DTC P0447 EVAPORATIVE EMISSION CONTROL SYSTEM VENT CONTROL CIRCUIT OPEN, Diagnostic Trouble Code (DTC) Detecting Criteria.>

STATEINI VENT CONTROL CIRCUIT OPEN, DIAGNOSTIC TROUDIE CODE (DTC) DE

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK OUTPUT SIGNAL OF ECM.	Is the voltage more than 10 V?	Go to step 2.	Go to step 3.
	1) Turn the ignition switch to ON.	<u>.</u>		
	2) Measure the voltage between ECM and			
	chassis ground.			
	Connector & terminal			
	(B136) No. 17 (+) — Chassis ground (–):			
2	CHECK POOR CONTACT.	Is there poor contact in ECM	Repair the poor	Even if the mal-
	Check the poor contact of ECM connector.	connector?	contact of ECM connector.	function indicator light illuminates, the circuit has returned to a nor- mal condition at this time. (How- ever, the possibility of poor contact still remains.) NOTE: In this case, repair the following item: • Poor contact in drain valve con- nector • Poor contact in ECM connector • Poor contact in
0		la tha vasiatanaa maaya than 1	Ca ta atam A	coupling connector
3	 CHECK HARNESS BETWEEN DRAIN VALVE AND ECM CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from drain valve and ECM. 3) Measure the resistance of harness between drain valve connector and chassis ground. Connector & terminal (R143) No. 2 — Chassis ground: 	Is the resistance more than 1 MΩ?	Go to step 4.	Repair the ground short circuit of 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. <i>Connector & terminal</i> (B136) No. 17 — (R143) No. 2:	Is the resistance less than 1 Ω?	Go to step 5.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit in harness between ECM and drain valve connector • Poor contact in coupling connector
5	CHECK DRAIN VALVE.	la the registeres between 10	Co to otor 6	
5	CHECK DRAIN VALVE. Measure the resistance between drain valve terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance between 10 and 100 Ω?	Go to step 6 .	Replace the drain valve. <ref. to<br="">EC(H6DO)-14, Drain Valve.></ref.>

	Step	Check	Yes	No
6	 CHECK POWER SUPPLY TO DRAIN VALVE. 1) Turn the ignition switch to ON. 2) Measure the voltage between drain valve and chassis ground. Connector & terminal (R143) No. 1 (+) — Chassis ground (-): 	Is the voltage more than 10 V?	Go to step 7.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit in harness between main relay and drain valve • Poor contact in coupling connector • Poor contact in main relay connec- tor
7	CHECK POOR CONTACT. Check for poor contact in the drain valve con- nector.	Is there poor contact in drain valve connector?	Repair poor con- tact in drain valve connector.	Contact with SOA Service Center.

CE:DTC P0448 EVAPORATIVE EMISSION CONTROL SYSTEM VENT CONTROL CIRCUIT SHORTED

DTC DETECTING CONDITION:

• Immediately at fault recognition

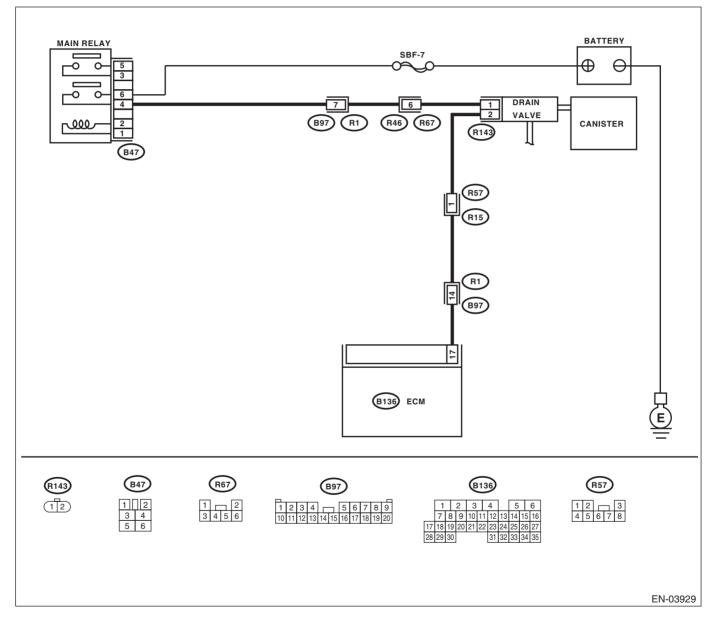
GENERAL DESCRIPTION < Ref. to GD(H6DO)-142, DTC P0448 EVAPORATIVE EMISSION CONTROL
 SYSTEM VENT CONTROL CIRCLUIT SHOPTED, Disgnastic Trouble Code (DTC), Detecting Criteria

SYSTEM VENT CONTROL CIRCUIT SHORTED, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK INPUT SIGNAL OF ECM.	Is the voltage 0 — 10 V?	Go to step 2.	Even if the mal-
	1) Turn the ignition switch to OFF.			function indicator
	2) Connect the test mode connector at the			light illuminates,
	lower portion of instrument panel (on the			the circuit has
	driver's side).			returned to a nor-
	Turn the ignition switch to ON.			mal condition at
	Measure the voltage between ECM and			this time. In this
	chassis ground while operating the drain valve.			case, repair the
	NOTE:			poor contact in
	Drain valve operation can be executed using			ECM connector.
	Subaru Select Monitor. Regarding the proce-			
	dures, refer to "Compulsory Valve Operation			
	Check Mode". <ref. en(h6do)(diag)-46,<="" td="" to=""><td></td><td></td><td></td></ref.>			
	Compulsory Valve Operation Check Mode.>			
	Connector & terminal			
	(B136) No. 17 (+) — Chassis ground (–):			
2	CHECK INPUT SIGNAL OF ECM.	Is the voltage more than 10 V?	Go to step 4.	Go to step 3.
	1) Turn the ignition switch to ON.			
	2) Measure the voltage between ECM and			
	chassis ground.			
	Connector & terminal			
	(B136) No. 17 (+) — Chassis ground (–):		D	5
3	CHECK POOR CONTACT.	Is there poor contact in ECM	Repair the poor	Replace the ECM.
	Check the poor contact of ECM connector.	connector?	contact of ECM	<ref. td="" to<=""></ref.>
			connector.	FU(H6DO)-33,
				Engine Control
			D	Module (ECM).>
4	CHECK HARNESS BETWEEN DRAIN	Is the voltage more than 10 V?		Go to step 5.
	VALVE AND ECM CONNECTOR.		short circuit in har-	
	1) Turn the ignition switch to OFF.		ness between	
	2) Disconnect the connector from the drain		ECM and drain	
	valve.		valve connector.	
	3) Turn the ignition switch to ON.4) Measure the voltage between ECM and		After repair, replace the ECM.	
	chassis ground.		<ref. td="" to<=""><td></td></ref.>	
	Connector & terminal		FU(H6DO)-33,	
	(B136) No. 17 (+) — Chassis ground (–):		Engine Control	
			Module (ECM).>	
5	CHECK DRAIN VALVE.	Is the resistance less than 1	Replace the drain	Go to step 6.
ľ	1) Turn the ignition switch to OFF.	Ω ?	valve <ref. td="" to<=""><td></td></ref.>	
	 Measure the resistance between drain 		EC(H6DO)-14,	
	valve terminals.		Drain Valve.> and	
	Terminals		ECM <ref. td="" to<=""><td></td></ref.>	
	No. 1 — No. 2:		FU(H6DO)-33,	
			Engine Control	
			Module (ECM).>.	
6	CHECK POOR CONTACT.	Is there poor contact in ECM	Repair the poor	Replace the ECM.
[Check the poor contact of ECM connector.	connector?	contact of ECM	<ref. td="" to<=""></ref.>
			connector.	FU(H6DO)-33,
				Engine Control
1				Module (ECM).>

CF:DTC P0451 EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR

DTC DETECTING CONDITION:

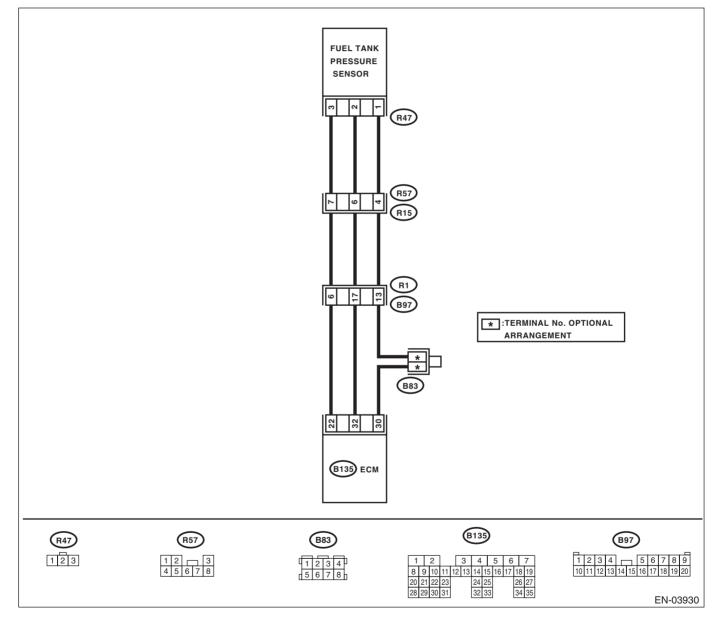
• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-144, DTC P0451 EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2 .
2	CHECK FUEL FILLER CAP.1) Turn the 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 ai ventilation hoses and pipes between fuel fille pipe and fuel tank 	r	Repair or replace the hoses and pipes.	Replace the fuel tank pressure sen- sor. <ref. to<br="">EC(H6DO)-10, Fuel Tank Pres- sure Sensor.></ref.>

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

DTC DETECTING CONDITION:

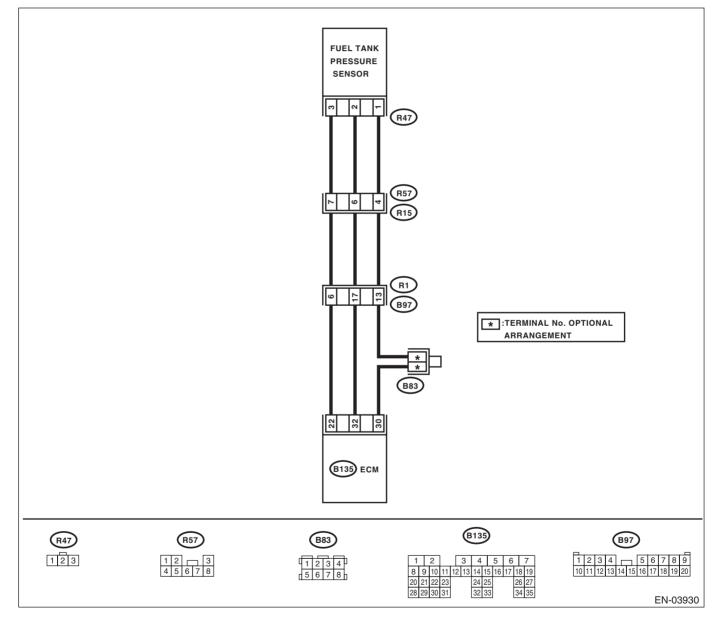
• Immediately at fault recognition

• GENERAL DESCRIPTION < Ref. to GD(H6DO)-146, DTC P0452 EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR LOW INPUT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK CURRENT DATA.	Is the measured value less	Go to step 2.	Even if the mal-
	1) Turn the ignition switch to OFF.	than -2.8 kPa (-21.0 mmHg, -		function indicator
	2) Remove the fuel filler cap.	0.827 inHg)?		light illuminates,
	3) Install the fuel filler cap.			the circuit has
	4) Turn the ignition switch to ON.			returned to a nor-
	5) Read the data of fuel tank pressure sensor			mal condition at
	signal using Subaru Select Monitor.			this time.
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". < Ref.			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.>			
2	CHECK POWER SUPPLY TO FUEL TANK	Is the voltage more than 4.5 V?	Go to step 4.	Go to step 3.
	PRESSURE SENSOR.	3		
	Measure the voltage between ECM connector			
	and chassis ground.			
	Connector & terminal			
	(B135) No. 22 (+) — Chassis ground (–):			
3	CHECK POWER SUPPLY TO FUEL TANK	Is the voltage more than 4.5 V?	Repair the poor	Contact with SOA
	PRESSURE SENSOR.	, v	contact of ECM	Service Center.
	Measure the voltage between ECM connector		connector.	
	and chassis ground.			
	Connector & terminal			
	(B135) No. 22 (+) — Chassis ground (–):			
4	CHECK INPUT SIGNAL OF ECM.	Is the voltage less than 0.2 V?	Go to step 6.	Go to step 5.
	Measure the voltage between ECM and chas-			
	sis ground.			
	Connector & terminal			
	(B135) No. 32 (+) — Chassis ground (–):			
5	CHECK INPUT SIGNAL FOR ECM (USING	Does the measured value	Repair the poor	Go to step 6.
	SUBARU SELECT MONITOR).	change by shaking the ECM	contact of ECM	
	Read the data of fuel tank pressure sensor sig-	harness and connector?	connector.	
	nal using Subaru Select Monitor.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". < Ref.			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.>			
6	CHECK HARNESS BETWEEN ECM AND	Is the voltage more than 4.5 V?	Go to step 7.	Repair the har-
	COUPLING CONNECTOR IN REAR WIRING			ness and connec-
	HARNESS.			tor.
	1) Turn the ignition switch to OFF.			NOTE:
	2) Remove the rear seat cushion.			In this case, repair
	3) Separate rear wiring harness and fuel tank			the following item:
	cord.			 Open circuit in
	4) Turn the ignition switch to ON.			harness between
	5) Measure the voltage between the rear wir-			ECM and rear wir-
	ing harness connector and chassis ground.			ing harness con-
	Connector & terminal			nector
	(R15) No. 7 (+) — Chassis ground (–):			 Poor contact in
				coupling connector

	Step	Check	Yes	No
7	 CHECK HARNESS BETWEEN ECM AND COUPLING CONNECTOR IN REAR WIRING HARNESS. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Measure the resistance of harness between ECM and rear wiring harness con- nector. Connector & terminal (B135) No. 30 — (R15) No. 4: 		Go to step 8.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit in harness between ECM and rear wir- ing harness con- nector • Poor contact in coupling connector • Poor contact in joint connector
8	CHECK HARNESS BETWEEN ECM AND COUPLING CONNECTOR IN REAR WIRING HARNESS. Measure the resistance of harness between rear wiring harness connector and chassis ground. Connector & terminal (R15) No. 4 — Chassis ground:	Is the resistance more than 1 MΩ?	Go to step 9 .	Repair the ground short circuit of har- ness between ECM and rear wir- ing harness con- nector.
9	 CHECK FUEL TANK CORD. 1) Disconnect the connector from fuel tank pressure sensor. 2) Measure the resistance of fuel tank cord. Connector & terminal (R57) No. 7 — (R47) No. 3: 	Is the resistance less than 1 Ω ?	Go to step 10.	Repair the open circuit in fuel tank cord.
10	CHECK FUEL TANK CORD. Measure the resistance of fuel tank cord. Connector & terminal (R57) No. 4 — (R47) No. 1:	Is the resistance less than 1 Ω ?	Go to step 11.	Repair the 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. 2 — Chassis ground:	Is the resistance more than 1 $M\Omega$?	Go to step 12.	Repair the ground short circuit of fuel tank cord.
12	CHECK POOR CONTACT. Check for poor contact in fuel tank pressure sensor connector.	Is there poor contact in fuel tank pressure sensor connec- tor?	Repair the poor contact in fuel tank pressure sensor connector.	Replace the fuel tank pressure sen- sor. <ref. to<br="">EC(H6DO)-10, Fuel Tank Pres- sure Sensor.></ref.>

CH:DTC P0453 EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR HIGH INPUT

DTC DETECTING CONDITION:

Immediately at fault recognition

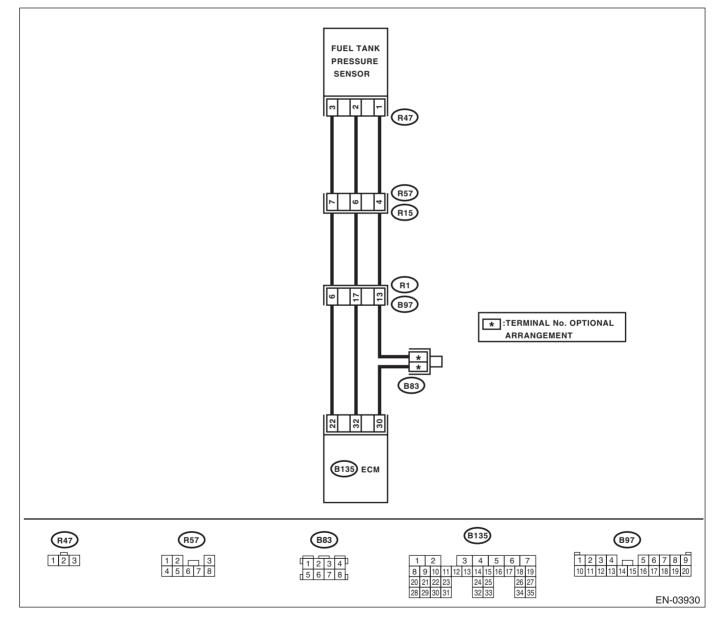
GENERAL DESCRIPTION < Ref. to GD(H6DO)-148, DTC P0453 EVAPORATIVE EMISSION CONTROL

SYSTEM PRESSURE SENSOR HIGH INPUT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK CURRENT DATA.	Is the measured value 2.8 kPa	Go to step 11.	Go to step 2.
	 Turn the ignition switch to OFF. 	(21.0 mmHg, 0.827 inHg) or		
	Remove the fuel filler cap.	more?		
	Install the fuel filler cap.			
	Turn the ignition switch to ON.			
	5) Read the data of fuel tank pressure sensor			
	signal using Subaru Select Monitor.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". < Ref.			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.>			
2	CHECK POWER SUPPLY TO FUEL TANK	Is the voltage more than 4.5 V?	Go to step 4.	Go to step 3.
	PRESSURE SENSOR.			
	Measure the voltage between ECM connector			
	and chassis ground.			
	Connector & terminal			
	(B135) No. 22 (+) — Chassis ground (–):			
3	CHECK POWER SUPPLY TO FUEL TANK	Does the measured value	Repair the poor	Replace the ECM.
	PRESSURE SENSOR.	change by shaking the ECM	contact of ECM	<ref. td="" to<=""></ref.>
	Measure the voltage between ECM connector	harness and connector?	connector.	FU(H6DO)-33,
	and chassis ground.			Engine Control
	Connector & terminal			Module (ECM).>
	(B135) No. 22 (+) — Chassis ground (–):			
4	CHECK INPUT SIGNAL OF ECM.	Is the voltage less than 0.2 V?	Go to step 6.	Go to step 5.
	Measure the voltage between ECM and chas-			
	sis ground.			
	Connector & terminal			
	(B135) No. 32 (+) — Chassis ground (–):		D	
5	CHECK INPUT SIGNAL FOR ECM (USING	Does the measured value	Repair the poor	Go to step 6.
	SUBARU SELECT MONITOR).	change by shaking the ECM	contact of ECM	
	Read the data of fuel tank pressure sensor sig-	narness and connector?	connector.	
	nal using Subaru Select Monitor.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". < Ref.			
	to EN(H6DO)(diag)-27, Subaru Select Moni- tor.>			
6	CHECK HARNESS BETWEEN ECM AND	Is the voltage more than 4.5 V?	Go to step 7	Repair the har-
ľ	COUPLING CONNECTOR IN REAR WIRING			ness and connec-
	HARNESS.			tor.
	1) Turn the ignition switch to OFF.			NOTE:
	2) Remove the rear seat cushion.			In this case, repair
	3) Separate rear wiring harness and fuel tank			the following item:
	cord.			 Open circuit in
	 4) Turn the ignition switch to ON. 			harness between
	5) Measure the voltage between the rear wir-			ECM and rear wir-
	ing harness connector and chassis ground.			ing harness con-
	Connector & terminal			nector
	(R15) No. 7 (+) — Chassis ground (–):			 Poor contact in
	· · · · · · · · · · · · · · · · · · ·			coupling connector
		l	1	

	Step	Check	Yes	No
7	 CHECK HARNESS BETWEEN ECM AND COUPLING CONNECTOR IN REAR WIRING HARNESS. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Measure the resistance of harness between ECM and rear wiring harness connector. Connector & terminal (B135) No. 32 — (R15) No. 6: (B135) No. 30 — (R15) No. 4: 	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 item: • Open circuit in harness between ECM and rear wir- ing harness con- nector • Poor contact in coupling connector
8	 CHECK FUEL TANK CORD. 1) Disconnect the connector from the fuel tank pressure sensor. 2) Measure the resistance of fuel tank cord. Connector & terminal (R57) No. 6 — (R47) No. 2: 	Is the resistance less than 1 Ω ?	Go to step 9 .	Repair the open circuit in fuel tank cord.
9	CHECK FUEL TANK CORD. Measure the resistance of fuel tank cord. Connector & terminal (R57) No. 4 — (R47) No. 1:	Is the resistance less than 1 Ω ?	Go to step 10 .	Repair the open circuit in fuel tank cord.
10	CHECK POOR CONTACT. Check for poor contact in fuel tank pressure sensor connector.	Is there poor contact in fuel tank pressure sensor connec- tor?	Repair the poor contact in fuel tank pressure sensor connector.	Replace the fuel tank pressure sen- sor. <ref. to<br="">EC(H6DO)-10, Fuel Tank Pres- sure Sensor.></ref.>
11	 CHECK HARNESS BETWEEN ECM AND FUEL TANK PRESSURE SENSOR CONNEC- TOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from fuel tank pressure sensor. 3) Turn the ignition switch to ON. 4) Read the data of fuel tank pressure sensor signal using Subaru Select Monitor. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. 	more?	Repair battery short circuit of har- ness between ECM and fuel tank pressure sensor connector.	Replace the fuel tank pressure sen- sor. <ref. to<br="">EC(H6DO)-10, Fuel Tank Pres- sure Sensor.></ref.>

CI: DTC P0456 EVAPORATIVE EMISSION CONTROL SYSTEM LEAK DETECTED (VERY SMALL LEAK)

DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

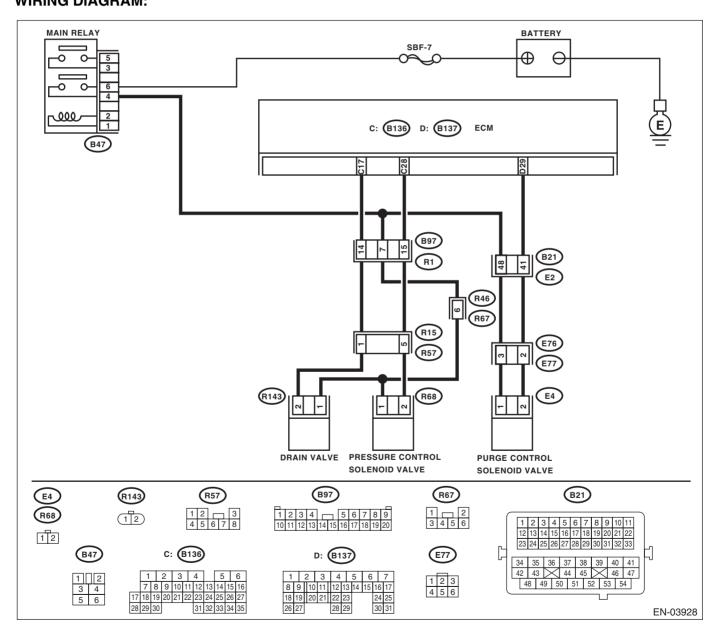
• GENERAL DESCRIPTION < Ref. to GD(H6DO)-149, DTC P0456 EVAPORATIVE EMISSION CONTROL

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, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
2	 CHECK FUEL FILLER CAP. 1) Turn the 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 genuine?	Go to step 4.	Replace with a 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. to<br="">FU(H6DO)-46, Fuel Filler Pipe.></ref.>	Go to step 5.
5	 CHECK DRAIN VALVE. 1) Connect the test mode connector. 2) Turn the ignition switch to ON. 3) Operate the drain valve. NOTE: Drain valve operation can be executed using Subaru Select Monitor. Regarding the procedures, refer to "Compulsory Valve Operation Check Mode". <ref. check="" compulsory="" en(h6do)(diag)-46,="" mode.="" operation="" to="" valve=""></ref.> 	Does the drain valve operate?	Go to step 6.	Replace the drain valve. <ref. to<br="">EC(H6DO)-14, Drain Valve.></ref.>
6	CHECK PURGE CONTROL SOLENOID VALVE. Operate the purge control solenoid valve. NOTE: Purge control solenoid valve operation can be executed using Subaru Select Monitor. Re- garding the procedures, refer to "Compulsory Valve Operation Check Mode". <ref. to<br="">EN(H6DO)(diag)-46, Compulsory Valve Opera- tion Check Mode.></ref.>		Go to step 7.	Replace the purge control solenoid valve. <ref. to<br="">EC(H6DO)-6, Purge Control Solenoid Valve.></ref.>
7	CHECK PRESSURE CONTROL SOLENOID VALVE. Operate the pressure control solenoid valve. NOTE: The pressure control solenoid valve operation can be executed using the Subaru Select Mon- itor. Regarding the procedures, refer to "Com- pulsory Valve Operation Check Mode". <ref. to<br="">EN(H6DO)(diag)-46, Compulsory Valve Opera- tion Check Mode.></ref.>	Does the pressure control solenoid valve operate?	Go to step 8.	Replace the pres- sure control sole- noid valve. <ref. to EC(H6DO)-6, Purge Control Solenoid Valve.></ref.

	Step	Check	Yes	No
8	CHECK EVAPORATIVE EMISSION CON- TROL SYSTEM LINE. Turn the ignition switch to OFF.	Is there a hole of more than 0.5 mm (0.020 in) dia. in evapora- tion line?	Repair or replace the evaporation line. <ref. to<br="">FU(H6DO)-56, Fuel Delivery, Return and Evapo- ration Lines.></ref.>	Go to step 9.
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(H6DO)-5, Canister.></ref. 	Go to step 10.
10	CHECK FUEL TANK. Remove the fuel tank. <ref. fu(h6do)-39,<br="" to="">Fuel Tank.></ref.>	Is the fuel tank damaged or is there any hole of more than 0.5 mm (0.020 in) dia. in it?	Repair or replace the fuel tank. <ref. to FU(H6DO)-39, Fuel Tank.></ref. 	Go to step 11.
11	CHECK ANY OTHER MECHANICAL TROU- BLE IN EVAPORATIVE EMISSION CON- TROL SYSTEM.	Is there any hole of more than 0.5 mm (0.020 in) dia., crack, 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.

CJ:DTC P0457 EVAPORATIVE EMISSION CONTROL SYSTEM LEAK DETECTED (FUEL CAP LOOSE/OFF)

DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

GENERAL DESCRIPTION < Ref. to GD(H6DO)-149, DTC P0457 EVAPORATIVE EMISSION CONTROL

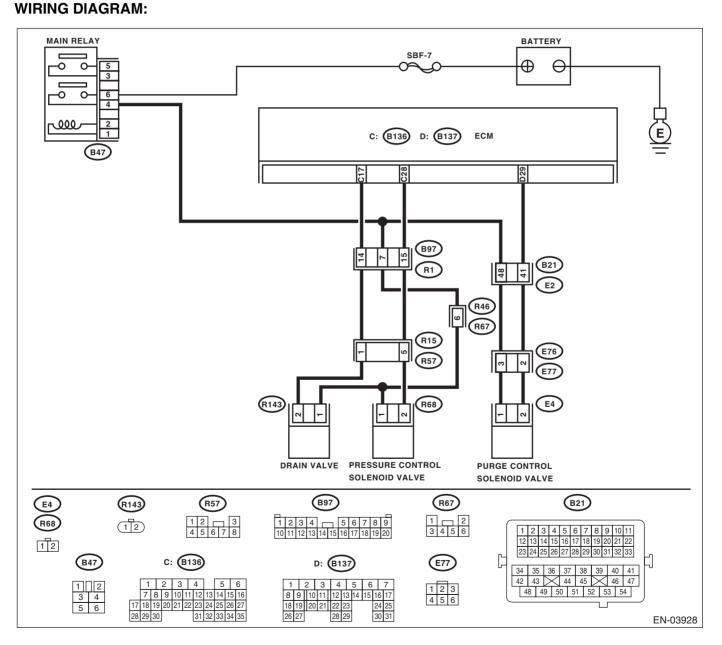
SYSTEM LEAK DETECTED (FUEL CAP LOOSE/OFF), Diagnostic Trouble Code (DTC) Detecting Criteria.> **TROUBLE SYMPTOM:**

Fuel odor

- Fuel odor
- Fuel filler cap is loose or not installed.

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
2	 CHECK FUEL FILLER CAP. 1) Turn the 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 has caught while tightening. 	Is the fuel filler cap tightened securely?	Go to step 3 .	Tighten fuel filler cap securely.
3	CHECK FUEL FILLER CAP.	Is the fuel filler cap genuine?	Go to step 4.	Replace with a 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. to<br="">FU(H6DO)-46, Fuel Filler Pipe.></ref.>	Go to step 5.
5	 CHECK DRAIN VALVE. 1) Connect the test mode connector. 2) Turn the ignition switch to ON. 3) Operate the drain valve. NOTE: Drain valve operation can be executed using Subaru Select Monitor. Regarding the procedures, refer to "Compulsory Valve Operation Check Mode". <ref. check="" compulsory="" en(h6do)(diag)-46,="" mode.="" operation="" to="" valve=""></ref.> 	Does the drain valve operate?	Go to step 6 .	Replace the drain valve. <ref. to<br="">EC(H6DO)-14, Drain Valve.></ref.>
6	CHECK PURGE CONTROL SOLENOID VALVE. Operate the purge control solenoid valve. NOTE: Purge control solenoid valve operation can be executed using Subaru Select Monitor. Re- garding the procedures, refer to "Compulsory Valve Operation Check Mode". <ref. to<br="">EN(H6DO)(diag)-46, Compulsory Valve Opera- tion Check Mode.></ref.>	Does the purge control sole- noid valve operate?	Go to step 7.	Replace the purge control solenoid valve. <ref. to<br="">EC(H6DO)-6, Purge Control Solenoid Valve.></ref.>
7	CHECK PRESSURE CONTROL SOLENOID VALVE. Operate the pressure control solenoid valve. NOTE: The pressure control solenoid valve operation can be executed using the Subaru Select Mon- itor. Regarding the procedures, refer to "Com- pulsory Valve Operation Check Mode". <ref. to<br="">EN(H6DO)(diag)-46, Compulsory Valve Opera- tion Check Mode.></ref.>	Does the pressure control solenoid valve operate?	Go to step 8.	Replace the pres- sure control sole- noid valve. <ref. to EC(H6DO)-6, Purge Control Solenoid Valve.></ref.
8	CHECK CANISTER.	Is the canister damaged?	Repair or replace the canister. <ref. to EC(H6DO)-5, Canister.></ref. 	Go to step 9 .

	Step	Check	Yes	No
9	CHECK FUEL TANK. Remove the fuel tank. <ref. fu(h6do)-39,<br="" to="">Fuel Tank.></ref.>	Is the fuel tank damaged?	Repair or replace the fuel tank. <ref. to FU(H6DO)-39, Fuel Tank.></ref. 	Go to step 10 .
10	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, misconnection of hoses or pipes in evaporative emission control system?	Repair or replace the hoses or pipes.	Contact with SOA Service Center.

CK:DTC P0458 EVAPORATIVE EMISSION SYSTEM PURGE CONTROL VALVE CIRCUIT LOW

DTC DETECTING CONDITION:

Two consecutive driving cycles with fault

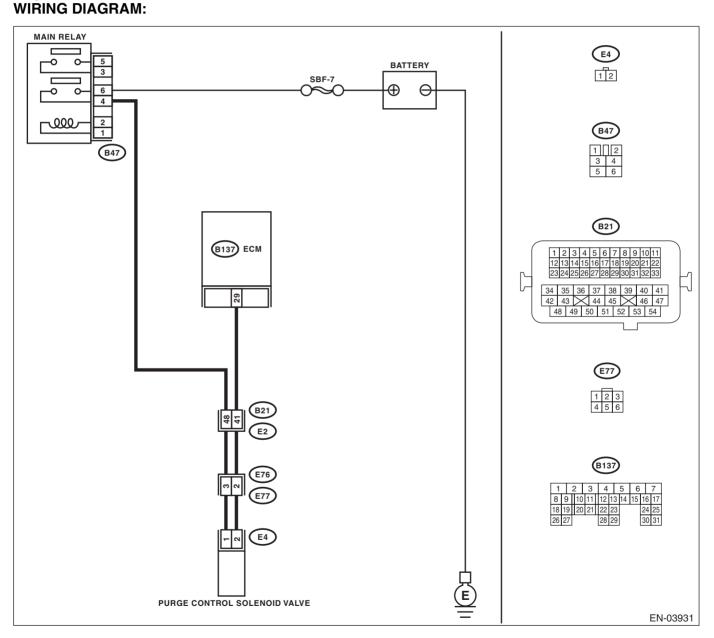
• GENERAL DESCRIPTION <Ref. to GD(H6DO)-150, DTC P0458 EVAPORATIVE EMISSION SYSTEM PURGE CONTROL VALVE CIRCUIT LOW, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Erroneous idling

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	 CHECK OUTPUT SIGNAL OF ECM. 1) Turn the ignition switch to ON. 2) Measure the voltage between ECM and chassis ground. Connector & terminal (B137) No. 29 (+) — Chassis ground (-): 		Even if the mal- function indicator light illuminates, the circuit has returned to a nor- mal condition at this time.	Go to step 2.
2	 CHECK HARNESS BETWEEN PURGE CONTROL SOLENOID VALVE AND ECM CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from purge control solenoid valve and ECM. 3) Measure the resistance of harness between purge control solenoid valve connector and engine ground. Connector & terminal (E4) No. 2 — Engine ground: 	Is the resistance more than 1 MΩ?	Go to step 3.	Repair the ground short circuit of har- ness between ECM and purge control solenoid valve connector.
3	CHECK HARNESS BETWEEN PURGE CON- TROL SOLENOID VALVE AND ECM CON- NECTOR. Measure the resistance of harness between ECM and purge control solenoid valve. <i>Connector & terminal</i> (B137) No. 29 — (E4) No. 2:	Is the resistance less than 1 Ω?	Go to step 4.	Repair the open circuit of harness between ECM and purge control sole- noid valve connec- tor. NOTE: In this case, repair the following item: • Open circuit in harness between ECM and purge control solenoid valve connector • Poor contact in coupling connector
4	 CHECK PURGE CONTROL SOLENOID VALVE. 1) Remove the purge control solenoid valve. 2) Measure the resistance between purge control solenoid valve terminals. Terminals No. 1 — No. 2: 	Is the resistance between 10 and 100 Ω?	Go to step 5.	Replace the purge control solenoid valve. <ref. to<br="">EC(H6DO)-6, Purge Control Solenoid Valve.></ref.>
5	 TROL SOLENOID VALVE. 1) Turn the ignition switch to ON. 2) Measure the voltage between purge control solenoid valve and engine ground. Connector & terminal (E4) No. 1 (+) — Engine ground (-): 	Is the voltage more than 10 V?	Go to step 6 .	Repair the open circuit of harness between main relay and purge control solenoid valve connector.
6	CHECK POOR CONTACT. Check poor contact of purge control solenoid valve connector.	Is there poor contact of purge control solenoid valve connec- tor?	Repair the poor contact of purge control solenoid valve connector.	Replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>

CL:DTC P0459 EVAPORATIVE EMISSION SYSTEM PURGE CONTROL VALVE CIRCUIT HIGH

DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

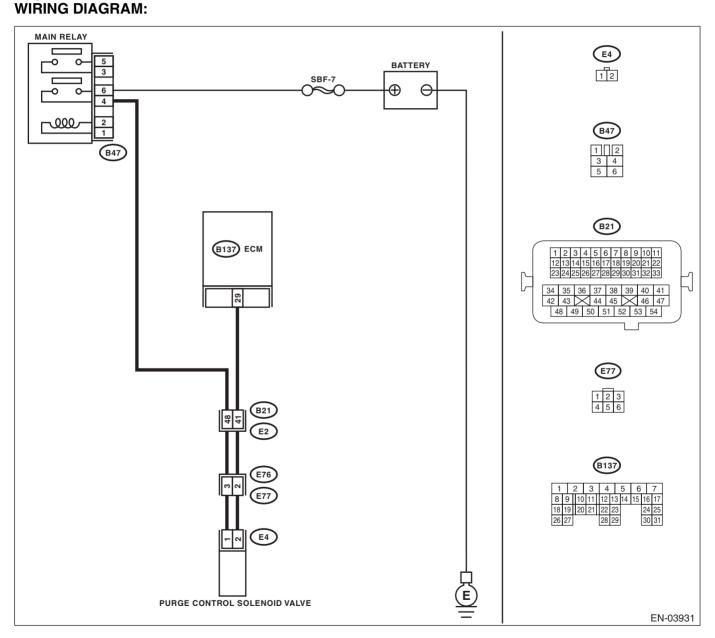
• GENERAL DESCRIPTION <Ref. to GD(H6DO)-152, DTC P0459 EVAPORATIVE EMISSION SYSTEM PURGE CONTROL VALVE CIRCUIT HIGH, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Erroneous idling

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK OUTPUT SIGNAL OF ECM.	Is the voltage 0 — 10 V?	Go to step 2.	Even if the mal-
	1) Turn the ignition switch to OFF.	5	'	function indicator
	2) Connect the test mode connector at the			light illuminates,
	lower portion of instrument panel (on the			the circuit has
	driver's side).			returned to a nor-
	3) Turn the ignition switch to ON.			mal condition at
	4) Measure the voltage between ECM and			this time. In this
	chassis ground while operating the purge con-			case, repair the
	trol solenoid valve.			poor contact in
	NOTE:			ECM connector.
	Purge control solenoid valve operation can be			
	executed using Subaru Select Monitor. Re-			
	garding the procedures, refer to "Compulsory			
	Valve Operation Check Mode". <ref. td="" to<=""><td></td><td></td><td></td></ref.>			
	EN(H6DO)(diag)-46, Compulsory Valve Opera-			
	tion Check Mode.>			
	Connector & terminal			
	(B137) No. 29 (+) — Chassis ground (–):			
2	CHECK OUTPUT SIGNAL OF ECM.	Is the voltage more than 10 V?	Go to step 4.	Go to step 3.
	 Turn the ignition switch to ON. 	-		-
	2) Measure the voltage between ECM and			
	chassis ground.			
	Connector & terminal			
	(B137) No. 29 (+) — Chassis ground (–):			
3	CHECK POOR CONTACT.	Is there poor contact in ECM	Repair the poor	Replace the ECM.
	Check the poor contact of ECM connector.	connector?	contact of ECM	<ref. td="" to<=""></ref.>
			connector.	FU(H6DO)-33,
				Engine Control
				Module (ECM).>
4	CHECK HARNESS BETWEEN PURGE CON-	Is the voltage more than 10 V?	Repair the battery	Go to step 5.
	TROL SOLENOID VALVE AND ECM CON-		short circuit of har-	
	NECTOR.		ness between	
	 Turn the ignition switch to OFF. 		ECM and purge	
	2) Disconnect the connector from purge con-		control solenoid	
	trol solenoid valve.		valve connector.	
	3) Turn the ignition switch to ON.		After repair,	
	4) Measure the voltage between ECM and		replace the ECM.	
	chassis ground.		<ref. td="" to<=""><td></td></ref.>	
	Connector & terminal		FU(H6DO)-33,	
	(B137) No. 29 (+) — Chassis ground (–):		Engine Control	
			Module (ECM).>	Cata star C
5	CHECK PURGE CONTROL SOLENOID	Is the resistance less than 1	Replace the purge	Go to step 6.
	VALVE.	Ω?	control solenoid	
	 Turn the ignition switch to OFF. Measure the resistance between purge 		valve <ref. td="" to<=""><td></td></ref.>	
	2) Measure the resistance between purge control solenoid valve terminals.		EC(H6DO)-6, Burge Control	
	Terminals		Purge Control Solenoid Valve.>	
	No. 1 — No. 2:		and ECM <ref. td="" to<=""><td></td></ref.>	
	140. 1 - 140. 2.		FU(H6DO)-33,	
			Engine Control	
			Module (ECM).>.	
6	CHECK POOR CONTACT.	Is there poor contact in ECM	Repair the poor	Replace the ECM.
	Check the poor contact of ECM connector.	connector?	contact of ECM	<ref. th="" to<=""></ref.>
			connector.	FU(H6DO)-33,
				Engine Control
				Module (ECM).>

CM:DTC P0461 FUEL LEVEL SENSOR "A" CIRCUIT RANGE/PERFORMANCE DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-154, DTC P0461 FUEL LEVEL SENSOR "A" CIRCUIT RANGE/PERFORMANCE, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

Step	Check	Yes	No
1 CHECK FOR ANY OTHER DTC ON DIS-	Is any other DTC displayed?	Check the appro-	Replace the fuel
PLAY.		priate DTC using	level sensor and
		the "List of Diag-	fuel sub level sen-
		nostic Trouble	sor. <ref. th="" to<=""></ref.>
		Code (DTC)".	FU(H6DO)-51,
		<ref. th="" to<=""><th>Fuel Level Sen-</th></ref.>	Fuel Level Sen-
		EN(H6DO)(diag)-	sor.> <ref. th="" to<=""></ref.>
		70, List of Diag-	FU(H6DO)-52,
		nostic Trouble	Fuel Sub Level
		Code (DTC).>	Sensor.>
		NOTE:	
		In this case, it is	
		not necessary to	
		inspect DTC P0461.	

CN:DTC P0462 FUEL LEVEL SENSOR "A" CIRCUIT LOW

NOTE:

For the diagnostic procedure, refer to DTC P0463. <Ref. to EN(H6DO)(diag)-266, DTC P0463 FUEL LEVEL SENSOR "A" CIRCUIT HIGH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

CO:DTC P0463 FUEL LEVEL SENSOR "A" CIRCUIT HIGH

DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-158, DTC P0463 FUEL LEVEL SENSOR "A" CIRCUIT HIGH, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS-	Is DTC P0462 or P0463 dis-	Check the combi-	Temporary poor
	PLAY.	played on the Subaru Select	nation meter.	contact occurs.
		Monitor?	<ref. idi-14,<="" th="" to=""><th></th></ref.>	
			Combination	
			Meter.>	

CP:DTC P0464 FUEL LEVEL SENSOR CIRCUIT INTERMITTENT

DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-160, DTC P0464 FUEL LEVEL SENSOR CIRCUIT IN-TERMITTENT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS-	Is DTC P0464 displayed on the	Check the combi-	Temporary poor
	PLAY.			contact occurs.
			<ref. idi-14,<="" th="" to=""><th></th></ref.>	
			Combination	
			Meter.>	

CQ:DTC P0483 FAN RATIONALITY CHECK

DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

GENERAL DESCRIPTION < Ref. to GD(H6DO)-163, DTC P0483 FAN RATIONALITY CHECK, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Occurrence of noise
- Overheating

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, 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.

	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS-	Is any other DTC displayed?	Check the appro-	Check radiator fan,
	PLAY.		priate DTC using	fan motor and
			the "List of Diag-	thermostat and if
			nostic Trouble	thermostat is
			Code (DTC)".	stuck, replace
			<ref. th="" to<=""><th>thermostat. <ref.< th=""></ref.<></th></ref.>	thermostat. <ref.< th=""></ref.<>
			EN(H6DO)(diag)-	to CO(H6DO)-18,
			70, List of Diag-	Radiator Main Fan
			nostic Trouble	and Fan Motor.>
			Code (DTC).>	<ref. th="" to<=""></ref.>
				CO(H6DO)-21,
				Radiator Sub Fan
				and Fan Motor.>

CR:DTC P0500 VEHICLE SPEED SENSOR "A"

DTC DETECTING CONDITION:

• Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-164, DTC P0500 VEHICLE SPEED SENSOR "A", Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK DTC OF TCM. Check DTC of TCM.	Is DTC of VDC displayed?	Perform the diag- nosis according to DTC. <ref. to<br="">ABS(diag)-34, List of Diagnostic Trou- ble Code (DTC).></ref.>	

CS:DTC P0506 IDLE AIR CONTROL SYSTEM RPM LOWER THAN EXPECTED DTC DETECTING CONDITION:

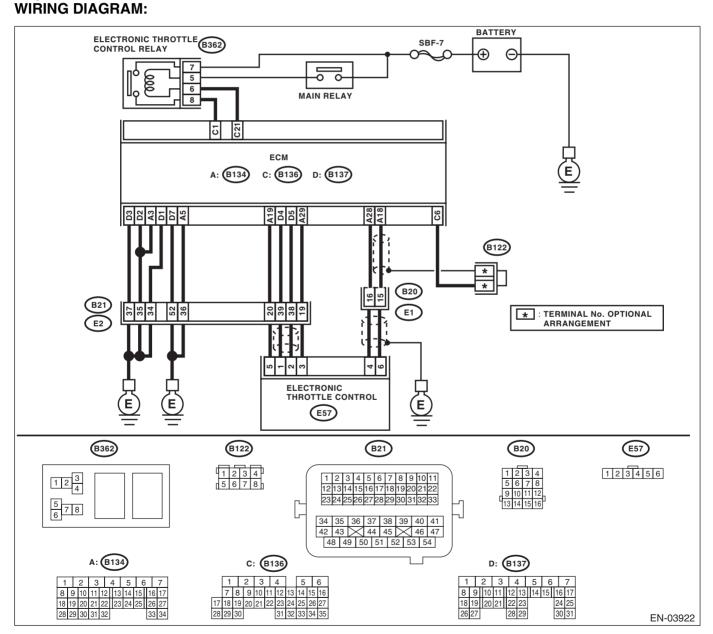
- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-166, DTC P0506 IDLE AIR CONTROL SYSTEM RPM LOWER THAN EXPECTED, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Hard to start the engine.
- · Engine does not start.
- Erroneous idling
- Engine stalls.

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0506.</ref.>	
2	CHECK AIR CLEANER ELEMENT.1) Turn the ignition switch to OFF.2) Check the air cleaner element.	Is there excessive clogging on air cleaner element.	Replace the air cleaner element. <ref. to<br="">IN(H6DO)-4, Air Cleaner Element.></ref.>	Go to step 3.
3	 CHECK ELECTRONIC THROTTLE CONTROL. 1) Turn the ignition switch to OFF. 2) Remove the electronic throttle control. 3) Check the electronic throttle control. 	Are foreign matter found inside electronic throttle control?	Remove foreign matter from elec- tronic throttle con- trol.	Perform the diag- nosis of DTC P2101.

CT:DTC P0507 IDLE AIR CONTROL SYSTEM RPM HIGHER THAN EXPECTED DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-168, DTC P0507 IDLE AIR CONTROL SYSTEM RPM HIGHER THAN EXPECTED, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Engine keeps running at higher speed than specified idle speed.

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:

ELECTRONIC THROTTLE BATTERY SBF-7 CONTROL RELAY Ð Θ 5 0 C 6 MAIN RELAY 8 ü 5 ЕСМ A: (B134) C: (B136) D: (B137) A19 D4 D5 A29 A28 A18 D3 D1 D7 A5 A5 ဗ္ပ B122 * (B20) B21 E2 E1 36 36 37 34 19 38 39 39 * : TERMINAL No. OPTIONAL ARRANGEMENT ELECTRONIC THROTTLE CONTROL Ε (E57) (B362) (B122) (B21) (B20) (E57) 1 2 3 4 5 6 7 8 123456 1234 1 2 3 4 5 6 7 8 9 10 11 123 5678 1213141516171819202122 23 24 25 26 27 28 29 30 31 32 33 578 13 14 15 16 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 A: (B134) C: (B136 D: (B137) 1 2 3 4 5 6 7 2 3 4 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 8 9 10 11 12 13 14 15 16 17 7 8 9 10 11 12 13 14 15 16 18 19 20 21 22 23 24 25 17 18 19 20 21 22 23 24 25 26 27 18 19 20 21 22 23 24 25 26 27 33 34 26 27 30 31 28 29 30 31 32 28 29 30 31 32 33 34 35 28 29 EN-03922

	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0507.</ref.>	
2	 CHECK AIR INTAKE SYSTEM. 1) Turn the ignition switch to ON. 2) Start and idle the engine. 3) Check the following items. Loose installation of intake manifold and throttle body Cracks of intake manifold gasket and throttle body gasket Disconnection of vacuum hoses 	Is there any fault in air intake system?	Repair air suction and leaks.	Go to step 3.
3	 CHECK ELECTRONIC THROTTLE CONTROL. 1) Turn the ignition switch to OFF. 2) Remove the electronic throttle control. 3) Check the electronic throttle control. 	Are foreign matter found inside electronic throttle control?	Remove foreign matter from elec- tronic throttle con- trol.	Perform the diag- nosis of DTC P2101.

CU:DTC P0512 STARTER REQUEST CIRCUIT

DTC DETECTING CONDITION:

Immediately at fault recognition

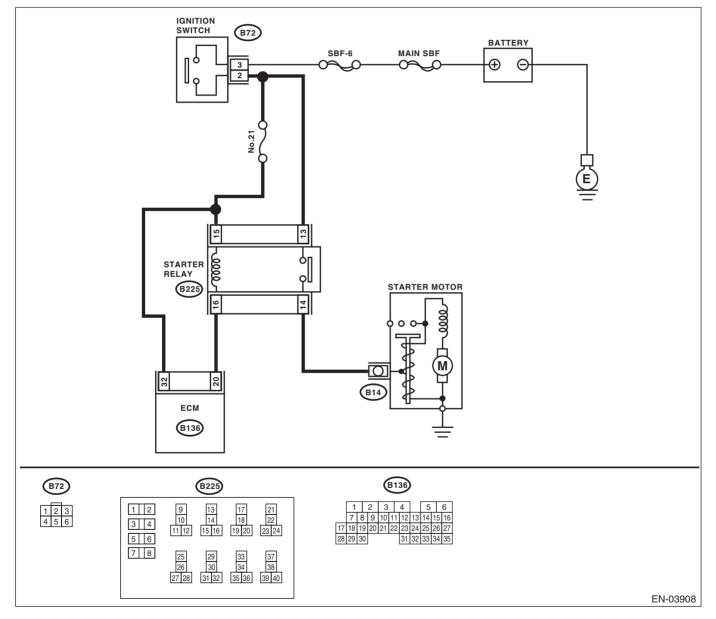
GENERAL DESCRIPTION <Ref. to GD(H6DO)-170, DTC P0512 STARTER REQUEST CIRCUIT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Failure of engine to start

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK OPERATION OF STARTER MOTOR. Turn the ignition switch to ON. NOTE: Place the inhibitor switch in each position.	Does the starter motor oper- ate?	short circuit in starter motor cir- cuit.	Check the starter motor circuit. <ref. to EN(H6DO)(diag)- 58, STARTER MOTOR CIRCUIT, Diagnostics for Engine Starting Failure.></ref.

CV:DTC P0519 IDLE AIR CONTROL SYSTEM PERFORMANCE DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-172, DTC P0519 IDLE AIR CONTROL SYSTEM PER-FORMANCE, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Engine keeps running at higher speed than specified idle speed.

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).> NOTE: In this case, it is not necessary to inspect DTC P0519.</ref.>	Go to step 2.
2	 CHECK AIR INTAKE SYSTEM. 1) Turn the ignition switch to ON. 2) Start and idle the engine. 3) Check the following items. Loose installation of intake manifold and throttle body Cracks of intake manifold gasket and throttle body gasket Disconnection of vacuum hoses 	Is there any fault in air intake system?	Repair air suction and leaks.	Go to step 3.
3	 CHECK ELECTRONIC THROTTLE CONTROL. 1) Turn the ignition switch to OFF. 2) Remove the electronic throttle control. 3) Check the electronic throttle control. 	Are foreign matter found inside electronic throttle control?		Perform the diag- nosis of DTC P2101.

CW:DTC P0600 SERIAL COMMUNICATION LINK

NOTE:

For the diagnostic procedure, refer to LAN section. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

EN(H6DO)(diag)-274

CX:DTC P0604 INTERNAL CONTROL MODULE RANDOM ACCESS MEMORY

(RAM) ERROR

DTC DETECTING CONDITION:

Immediately at fault recognition

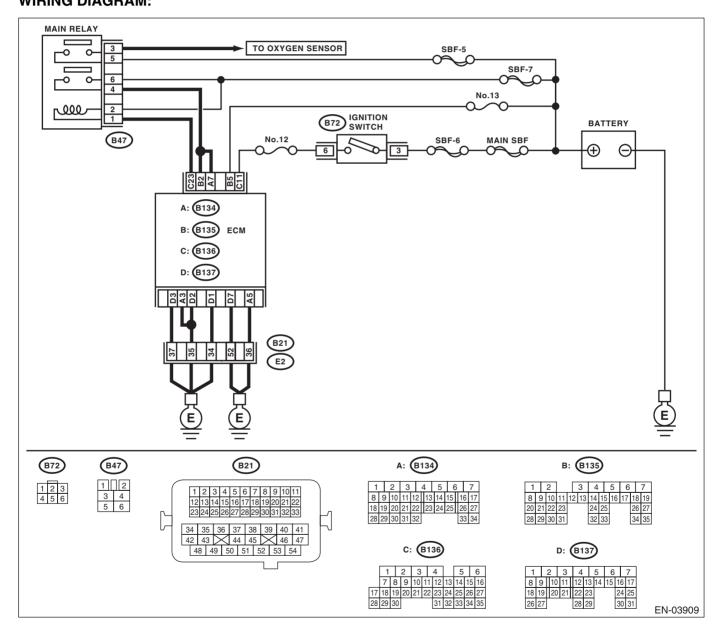
 GENERAL DESCRIPTION <Ref. to GD(H6DO)-174, DTC P0604 INTERNAL CONTROL MODULE RAN-DOM ACCESS MEMORY (RAM) ERROR, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Engine does not start.
- Engine stalls.

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



EN(H6DO)(diag)-275

	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Temporary poor contact occurs.

CY:DTC P0605 INTERNAL CONTROL MODULE READ ONLY MEMORY (ROM) ERROR

NOTE:

For the diagnostic procedure, refer to DTC P0607. <Ref. to EN(H6DO)(diag)-277, DTC P0607 CONTROL MODULE PERFORMANCE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

CZ:DTC P0607 CONTROL MODULE PERFORMANCE

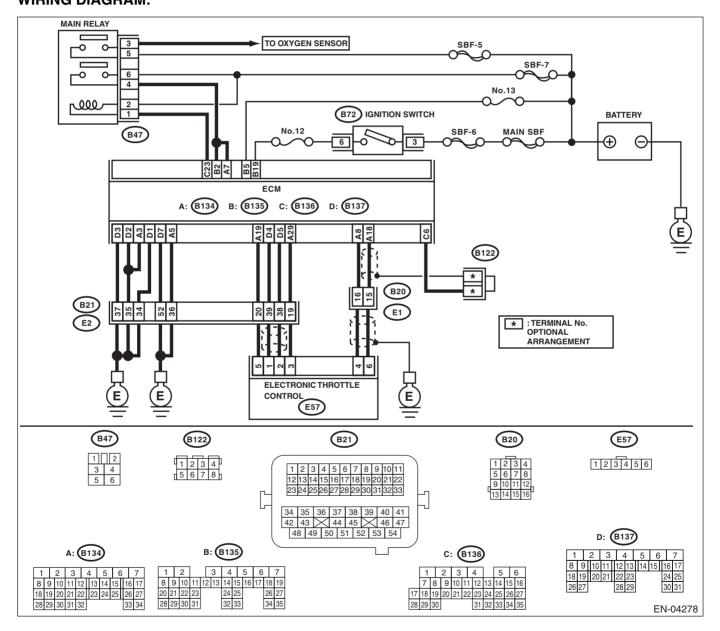
- DTC DETECTING CONDITION:
- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-177, DTC P0607 CONTROL MODULE PERFORMANCE, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



ENGINE (DIAGNOSTICS)

	Step	Check	Yes	No
1	 CHECK INPUT VOLTAGE OF ECM. 1) Turn the ignition switch to ON. 2) Measure the voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 7 (+) — Chassis ground (-): (B135) No. 2 (+) — Chassis ground (-): 	Is the voltage 10 — 13 V?	Go to step 2 .	Repair the open or ground short cir- cuit of power sup- ply circuit.
2	 CHECK INPUT VOLTAGE OF ECM. 1) Start the engine. 2) Measure the voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 7 (+) — Chassis ground (-): (B135) No. 2 (+) — Chassis ground (-): 	Is the voltage 13 — 15 V?	Go to step 3.	Repair the open or ground short cir- cuit of power sup- ply circuit.
3	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from the ECM and electronic throttle control. 3) Measure the resistance of harness between ECM and electronic throttle control connector. Connector & terminal (E57) No. 5 — (B134) No. 19: (E57) No. 3 — (B134) No. 29: 	Is the resistance less than 1 Ω ?	Go to step 4.	Repair the open circuit of harness between ECM and electronic throttle control connector.
4	CHECK ECM GROUND HARNESS. Measure the voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 3 (+) — Chassis ground (-): (B134) No. 5 (+) — Chassis ground (-): (B137) No. 1 (+) — Chassis ground (-): (B137) No. 2 (+) — Chassis ground (-): (B137) No. 3 (+) — Chassis ground (-): (B137) No. 7 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>	 Repair the follow- ing items. Further tighten the engine ground terminals. Poor contact in ECM connector Poor contact in coupling connector

DA:DTC P0638 THROTTLE ACTUATOR CONTROL RANGE/PERFORMANCE (BANK 1)

NOTE:

For the diagnostic procedure, refer to DTC P2101. <Ref. to EN(H6DO)(diag)-331, DTC P2101 THROTTLE ACTUATOR CONTROL MOTOR CIRCUIT RANGE/PERFORMANCE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

DB:DTC P0691 FAN 1 CONTROL CIRCUIT LOW

DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-183, DTC P0691 FAN 1 CONTROL CIRCUIT LOW, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Radiator fan does not operate properly.
- Overheating

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS-	Is DTC P0691 displayed?	Check the radiator	Temporary poor
	PLAY.		fan system. <ref. to CO(H6DO)-7, Radiator Fan Sys- tem.></ref. 	contact occurs.

DC:DTC P0692 FAN 1 CONTROL CIRCUIT HIGH

DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-184, DTC P0692 FAN 1 CONTROL CIRCUIT HIGH, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Radiator fan does not operate properly.
- Overheating

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

Step	Check	Yes	No
1 CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is DTC P0692 displayed?	Check the radiator fan system. <ref. to CO(H6DO)-7, Radiator Fan Sys- tem.></ref. 	

DD:DTC P0700 TRANSMISSION CONTROL SYSTEM (MIL REQUEST)

NOTE:

For the diagnostic procedure, refer to AT section. <Ref. to 5AT(diag)-2, Basic Diagnostic Procedure.>

DE:DTC P1152 O2 SENSOR CIRCUIT RANGE/PERFORMANCE (LOW) (BANK1 SENSOR1)

NOTE:

For diagnostic procedure, refer to DTC P1153. <Ref. to EN(H6DO)(diag)-280, DTC P1153 O2 SENSOR CIRCUIT RANGE/PERFORMANCE (HIGH) (BANK1 SENSOR1), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

DF:DTC P1153 O2 SENSOR CIRCUIT RANGE/PERFORMANCE (HIGH) (BANK1 SENSOR1)

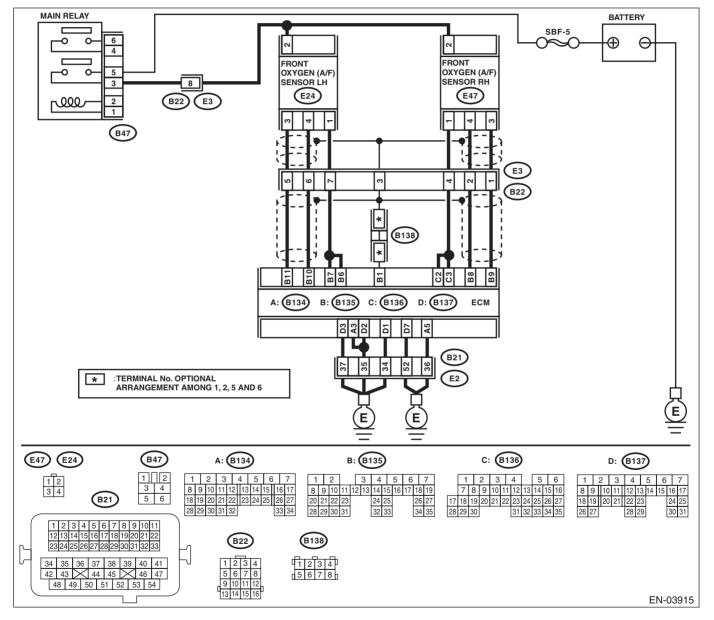
DTC DETECTING CONDITION:

· Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-188, 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, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Inspect the relevant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to EN(H6DO)(diag)- 70, List of Diagnos- tic Trouble Code (DTC).></ref. 	Go to step 2.
2	CHECK FRONT OXYGEN (A/F) SENSOR CONNECTOR AND COUPLING CONNECTOR.	Does water enter the connec- tor?	Dry the water thor- oughly.	Go to step 3.
3	 CHECK FRONT OXYGEN (A/F) SENSOR DATA. 1) Start the engine. 2) While observing the Subaru Select Monitor or general scan tool screen, warm-up the engine until engine coolant temperature is above 75°C (167°F). If the engine is already warmed-up, operate at idle speed for at least 1 minute. 3) Read data of front oxygen (A/F) sensor signal using the Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	0.86 — 1.15 at idle?	Go to step 4.	Go to step 5 .
4	 CHECK REAR OXYGEN SENSOR SIGNAL. 1) Race engine at speeds from idling to 3,000 rpm for a total of 5 cycles. NOTE: To increase engine speed to 3,000 rpm, slowly depress accelerator pedal, taking approximately 5 seconds, and quickly release accelerator pedal to decrease engine speed. 2) Operate the LED operation mode for engine. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "LED OPERATION MODE FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> 		Check front oxy- gen (A/F) sensor circuit.	Check rear oxygen sensor circuit. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>
5	 CHECK EXHAUST SYSTEM. Check exhaust system parts. NOTE: Check the following items. Looseness of part installation Damage (crack, hole etc.) of parts Looseness of the front oxygen (A/F) sensor Looseness or ill fitting of parts between front oxygen (A/F) sensor 	Is there any fault in exhaust system?	Repair or replace faulty parts.	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(H6DO)-29, Front Oxygen (A/F) Sensor.></ref.>

DG:DTC P1154 O2 SENSOR CIRCUIT RANGE/PERFORMANCE (LOW) (BANK 2 SENSOR 1)

NOTE:

For diagnostic procedure, refer to DTC P1155. <Ref. to EN(H6DO)(diag)-282, DTC P1155 O2 SENSOR CIRCUIT RANGE/PERFORMANCE (HIGH) (BANK 2 SENSOR 1), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

DH:DTC P1155 O2 SENSOR CIRCUIT RANGE/PERFORMANCE (HIGH) (BANK 2 SENSOR 1)

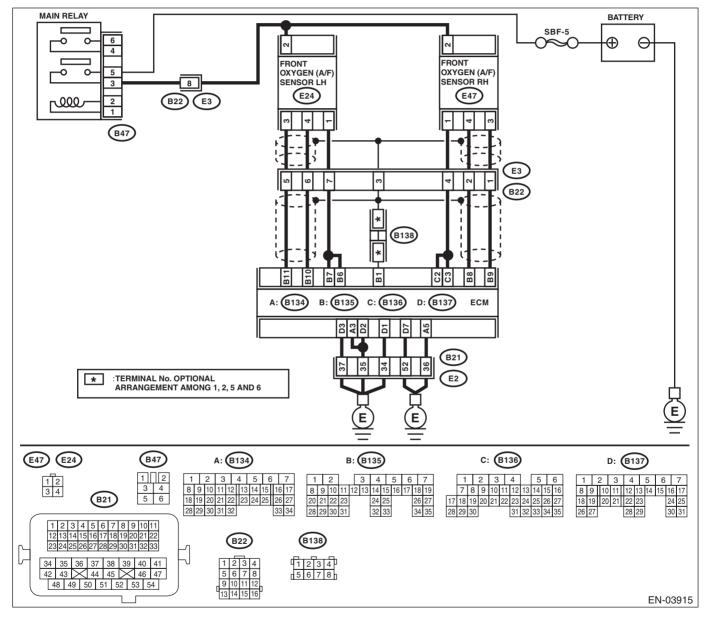
DTC DETECTING CONDITION:

· Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-189, DTC P1155 O2 SENSOR CIRCUIT RANGE/PER-FORMANCE (HIGH) (BANK 2 SENSOR 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Inspect the relevant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to EN(H6DO)(diag)- 70, List of Diagnos- tic Trouble Code (DTC).></ref. 	Go to step 2.
2	CHECK FRONT OXYGEN (A/F) SENSOR CONNECTOR AND COUPLING CONNECTOR.	Does water enter the connec- tor?	Dry the water thor- oughly.	Go to step 3.
3	 CHECK FRONT OXYGEN (A/F) SENSOR DATA. 1) Start the engine. 2) While observing the Subaru Select Monitor or general scan tool screen, warm-up the engine until engine coolant temperature is above 75°C (167°F). If the engine is already warmed-up, operate at idle speed for at least 1 minute. 3) Read data of front oxygen (A/F) sensor signal using the Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	0.86 — 1.15 at idle?	Go to step 4.	Go to step 5.
4	 CHECK REAR OXYGEN SENSOR SIGNAL. 1) Race engine at speeds from idling to 3,000 rpm for a total of 5 cycles. NOTE: To increase engine speed to 3,000 rpm, slowly depress accelerator pedal, taking approximately 5 seconds, and quickly release accelerator pedal to decrease engine speed. 2) Operate the LED operation mode for engine. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "LED OPERATION MODE FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> 		Check front oxy- gen (A/F) sensor circuit.	Check rear oxygen sensor circuit. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>
5	CHECK EXHAUST SYSTEM. Check exhaust system parts. NOTE: Check the following items. • Looseness of part installation • Damage (crack, hole etc.) of parts • Looseness of the front oxygen (A/F) sensor • Looseness or ill fitting of parts between front oxygen (A/F) sensor and rear oxygen sensor	Is there any fault in exhaust system?	Repair or replace faulty parts.	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(H6DO)-29, Front Oxygen (A/F) Sensor.></ref.>

DI: DTC P1160 RETURN SPRING FAILURE

NOTE:

For the diagnostic procedure, refer to DTC P2101. <Ref. to EN(H6DO)(diag)-331, DTC P2101 THROTTLE ACTUATOR CONTROL MOTOR CIRCUIT RANGE/PERFORMANCE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

EN(H6DO)(diag)-283

DJ:DTC P1400 FUEL TANK PRESSURE CONTROL SOLENOID VALVE CIRCUIT LOW

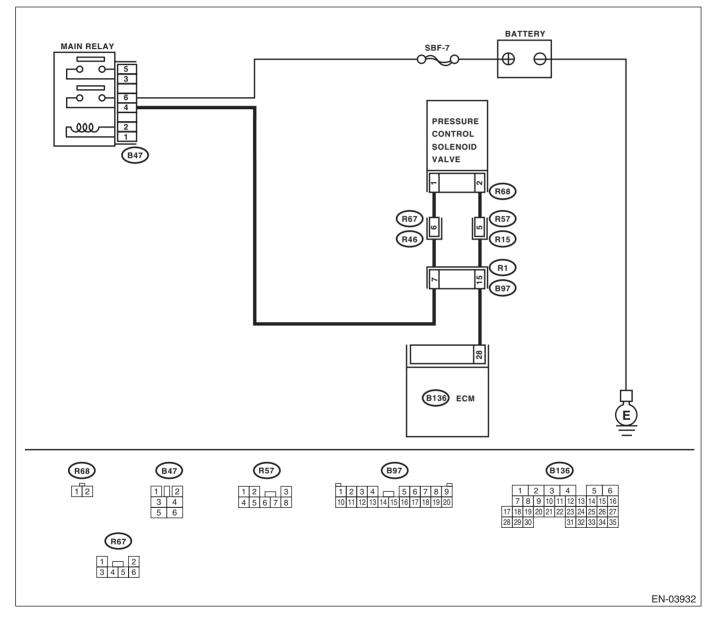
DTC DETECTING CONDITION:

Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-192, DTC P1400 FUEL TANK PRESSURE CONTROL SOLENOID VALVE CIRCUIT LOW, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	 CHECK OUTPUT SIGNAL OF ECM. 1) Turn the ignition switch to ON. 2) Measure the voltage between ECM and chassis ground. Connector & terminal (B136) No. 28 (+) — Chassis ground (-): 	Is the voltage more than 10 V?		Go to step 3.
2	CHECK POOR CONTACT. Check the poor contact of ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact of ECM connector.	Contact with SOA Service Center.
3	 CHECK HARNESS BETWEEN PRESSURE CONTROL SOLENOID VALVE AND ECM CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from the pressure control solenoid valve and ECM. 3) Measure the resistance of harness between pressure control solenoid valve connector and chassis ground. Connector & terminal (R68) No. 2 — Chassis ground: 	Is the resistance more than 1 MΩ?	Go to step 4.	Repair the ground short circuit of har- ness between ECM and pressure control solenoid valve connector.
4	CHECK HARNESS BETWEEN PRESSURE CONTROL SOLENOID VALVE AND ECM CONNECTOR. Measure the resistance of harness between ECM and pressure control solenoid valve con- nector. Connector & terminal (B136) No. 28 — (R68) No. 2:	Is the resistance less than 1 Ω?	Go to step 5.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit in harness between ECM and pressure control solenoid valve connector • Poor contact in coupling connector
5	CHECK PRESSURE CONTROL SOLENOID VALVE. Measure the resistance between pressure control solenoid valve terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance between 10 and 100 Ω ?	Go to step 6 .	Replace the pres- sure control sole- noid valve. <ref. to EC(H6DO)-11, Pressure Control Solenoid Valve.></ref.
6	 CHECK POWER SUPPLY TO THE PRES- SURE CONTROL SOLENOID VALVE. 1) Turn the ignition switch to ON. 2) Measure the voltage between pressure control solenoid valve and chassis ground. <i>Connector & terminal</i> (<i>R68</i>) No. 1 (+) — Chassis ground (-): 	Is the voltage more than 10 V?	Go to step 7.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit in harness between main relay and pressure control solenoid valve con- nector • Poor contact in coupling connector • Poor contact in main relay connec- tor

	Step	Check	Yes	No
7	CHECK POOR CONTACT.	Is there poor contact of the	Repair the poor	Contact with SOA
	Check poor contact of pressure control sole- noid valve connector.		contact of pres- sure control sole- noid valve connector.	Service Center.

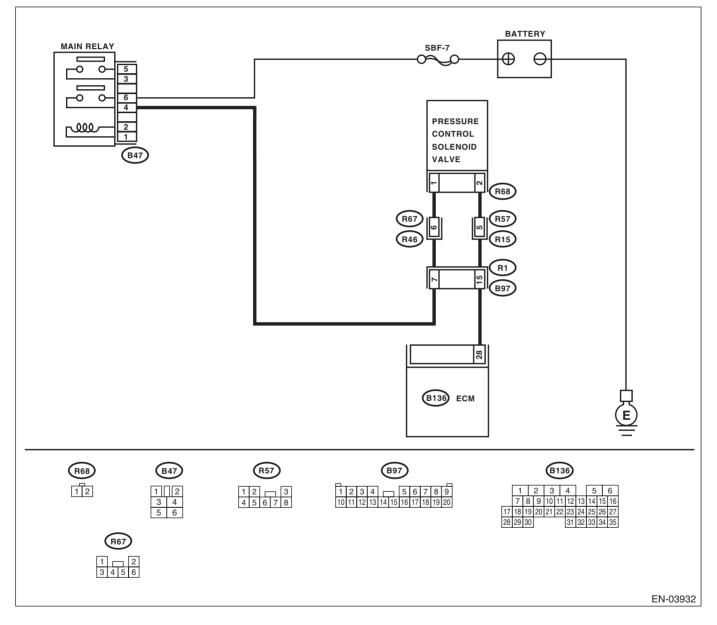
DK:DTC P1420 FUEL TANK PRESSURE CONTROL SOL. VALVE CIRCUIT HIGH DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-194, DTC P1420 FUEL TANK PRESSURE CONTROL SOL. VALVE CIRCUIT HIGH, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	 CHECK INPUT SIGNAL OF ECM. 1) Turn the ignition switch to OFF. 2) Connect the test mode connector at the lower portion of instrument panel (on the driver's side). 3) Turn the ignition switch to ON. 4) Measure the voltage between ECM and chassis ground while operating the pressure control solenoid valve. NOTE: The pressure control solenoid valve operation can be executed using the Subaru Select Monitor. Regarding the procedures, refer to "Compulsory Valve Operation Check Mode". <ref. check="" compulsory="" en(h6do)(diag)-46,="" mode.="" operation="" to="" valve=""></ref.> Connector & terminal (B136) No. 28 (+) — Chassis ground (-): 	Does the voltage change between 0 — 10 V?	Go to step 2.	Even if the mal- function indicator light illuminates, the circuit has returned to a nor- mal condition at this time. In this case, repair the poor contact in ECM connector.
2	 CHECK INPUT SIGNAL OF ECM. 1) Turn the ignition switch to ON. 2) Measure the voltage between ECM and chassis ground. Connector & terminal (B136) No. 28 (+) — Chassis ground (-): 	Is the voltage more than 10 V?	Go to step 4 .	Go to step 3.
3	CHECK POOR CONTACT. Check the poor contact of ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact of ECM connector.	Replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>
4	 CHECK HARNESS BETWEEN PRESSURE CONTROL SOLENOID VALVE AND ECM CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the pressure control solenoid valve. 3) Turn the ignition switch to ON. 4) Measure the voltage between ECM and chassis ground. Connector & terminal (B136) No. 28 (+) — Chassis ground (-): 	Is the voltage more than 10 V?	Repair the battery short circuit of har- ness between ECM and pressure control solenoid valve connector. After repair, replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>	Go to step 5.
5	 CHECK PRESSURE CONTROL SOLENOID VALVE. 1) Turn the ignition switch to OFF. 2) Measure the resistance between pressure control solenoid valve terminals. Terminals No. 1 — No. 2: 	Is the resistance less than 1 Ω ?	Replace the purge control solenoid valve <ref. to<br="">EC(H6DO)-11, Pressure Control Solenoid Valve.>and ECM <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.></ref.>	Go to step 6 .
6	CHECK POOR CONTACT. Check the poor contact of ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact of ECM connector.	Replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).></ref.>

DL:DTC P1443 VENT CONTROL SOLENOID VALVE FUNCTION PROBLEM DTC DETECTING CONDITION:

Immediately at fault recognition

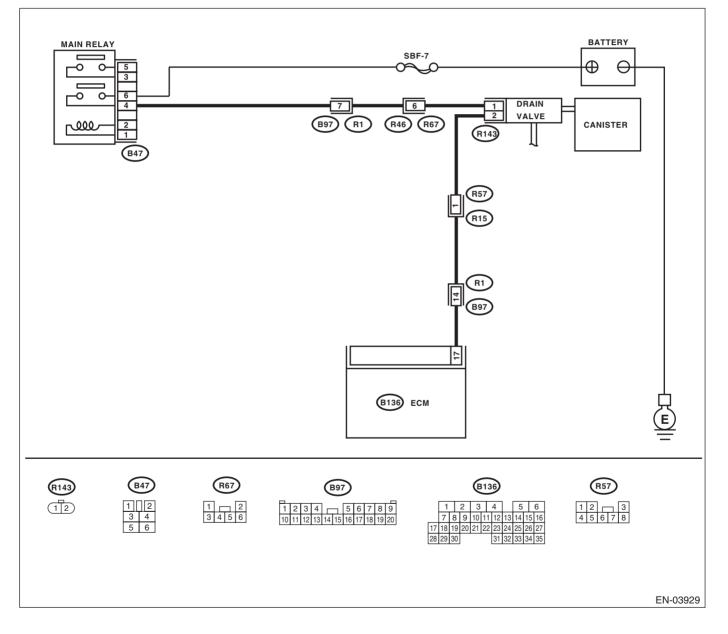
• GENERAL DESCRIPTION <Ref. to GD(H6DO)-196, DTC P1443 VENT CONTROL SOLENOID VALVE FUNCTION PROBLEM, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Improper fuel supply

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Check the appro- priate DTC using the "List of Diag- nostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
2	CHECK DRAIN HOSE. Check the drain hose for clogging.	Is there clogging in the drain hose?	Replace the drain hose.	Go to step 3.
3	 CHECK DRAIN VALVE OPERATION. 1) Turn the ignition switch to OFF. 2) Connect the test mode connector at the lower portion of instrument panel (on the driver's side). 3) Turn the ignition switch to ON. 4) Operate the drain valve. NOTE: Drain valve operation can be executed using Subaru Select Monitor. Regarding the procedures, refer to "Compulsory Valve Operation Check Mode". 		Contact with SOA Service Center.	Replace the drain valve. <ref. to<br="">EC(H6DO)-14, Drain Valve.></ref.>

DM:DTC P1518 STARTER SWITCH CIRCUIT LOW INPUT

DTC DETECTING CONDITION:

Immediately at fault recognition

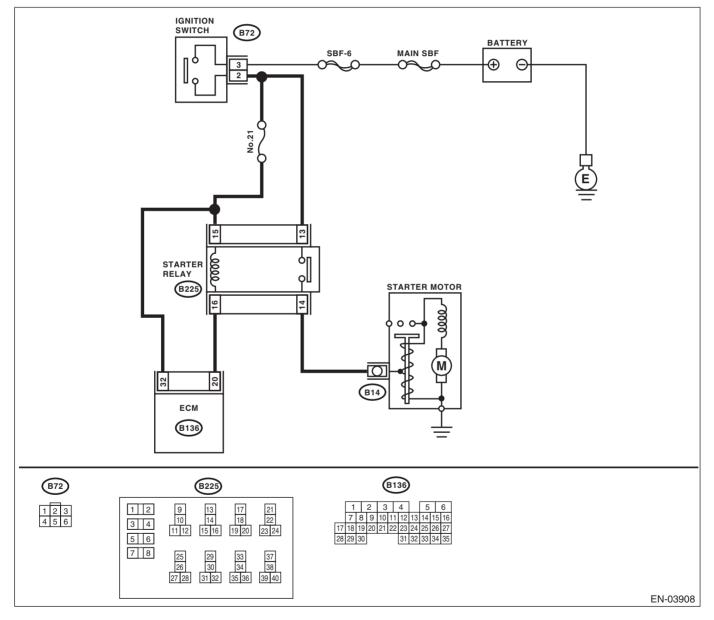
 GENERAL DESCRIPTION <Ref. to GD(H6DO)-198, DTC P1518 STARTER SWITCH CIRCUIT LOW IN-PUT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Failure of engine to start

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	5	when ignition switch is turned to START?	ness and connec- tor.	MOTOR CIRCUIT, Diagnostics for Engine Starting Failure.>

DN:DTC P1560 BACK-UP VOLTAGE CIRCUIT MALFUNCTION

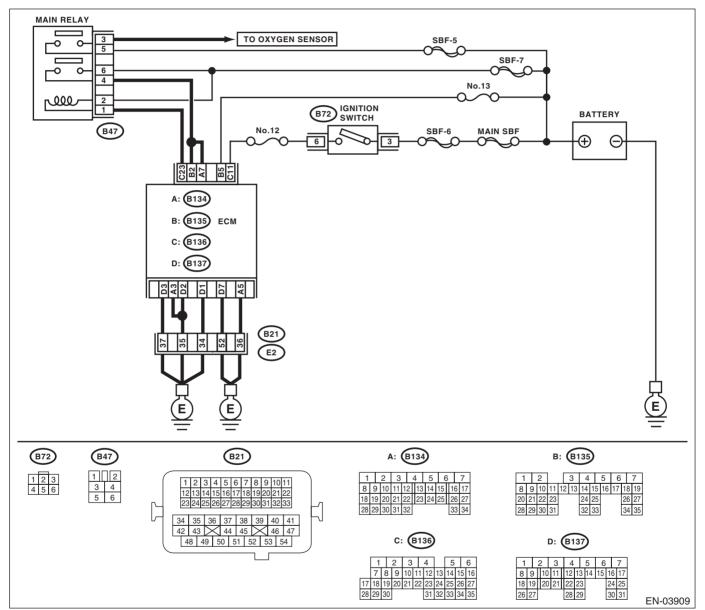
DTC DETECTING CONDITION:

Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-199, DTC P1560 BACK-UP VOLTAGE CIRCUIT MAL-FUNCTION, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	 CHECK INPUT SIGNAL OF ECM. 1) Turn the ignition switch to OFF. 2) Measure the voltage between ECM and chassis ground. Connector & terminal (B135) No. 5 (+) — Chassis ground (-): 	Is the voltage more than 10 V?	Repair the poor contact of ECM connector.	Go to step 2.
2	 CHECK HARNESS BETWEEN ECM AND MAIN FUSE BOX CONNECTOR. 1) Disconnect the connectors from ECM. 2) Measure the resistance of harness between ECM and chassis ground. Connector & terminal (B135) No. 5 — Chassis ground: 	Is the resistance less than 10 Ω ?	Repair the ground short circuit of har- ness between ECM connector and battery termi- nal.	Go to step 3.
3	CHECK FUSE No. 13.	Is the fuse blown out?	Replace the fuse.	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • Open circuit in harness between ECM and battery • Poor contact in ECM connector • Poor contact in battery terminal

DO:DTC P2088 INTAKE CAMSHAFT POSITION ACTUATOR CONTROL CIRCUIT LOW (BANK 1)

DTC DETECTING CONDITION:

Immediately at fault recognition

GENERAL DESCRIPTION < Ref. to GD(H6DO)-201, DTC P2088 INTAKE CAMSHAFT POSITION ACTU-

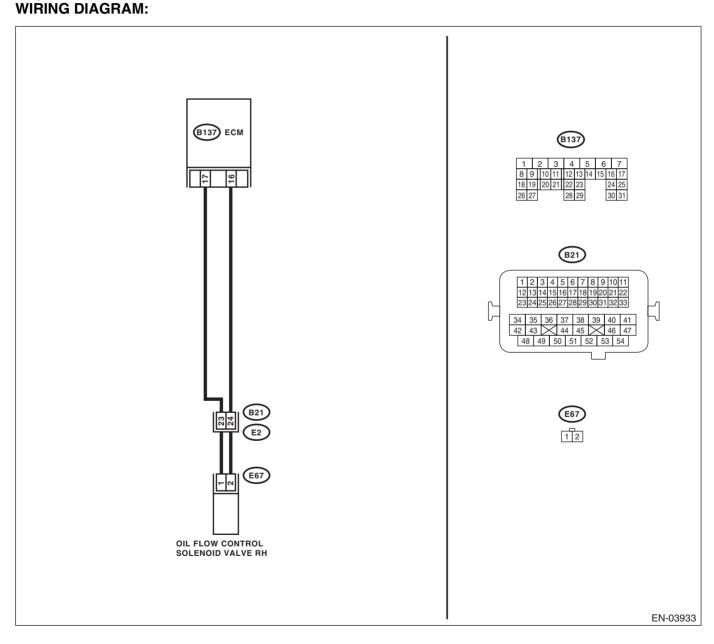
ATOR CONTROL CIRCUIT LOW (BANK 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Erroneous idling

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN ECM AND OIL FLOW CONTROL SOLENOID VALVE. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM and oil flow control solenoid valve. 3) Measure the resistance between ECM and oil flow control solenoid valve. Connector & terminal (B137) No. 17 — (E67) No. 1: (B137) No. 16 — (E67) No. 2:	Is the resistance less than 1 Ω ?	Go to step 2 .	Repair the open circuit of harness between ECM and oil flow control solenoid valve connector. NOTE: In this case, repair the following item: • Open circuit of harness between ECM and oil flow control solenoid valve connector • Poor contact in coupling connector
2	 CHECK OIL FLOW CONTROL SOLENOID VALVE. 1) Remove the oil flow control solenoid valve connector. 2) Measure the resistance between oil flow control solenoid valve terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i> 	Is the resistance between 6 and 12 Ω?	Repair the poor contact of ECM and oil flow con- trol solenoid valve.	Replace the oil flow control sole- noid valve. <ref. to ME(H6DO)-77, Oil Flow Control Solenoid Valve.></ref.

DP:DTC P2089 INTAKE CAMSHAFT POSITION ACTUATOR CONTROL CIRCUIT HIGH (BANK 1)

DTC DETECTING CONDITION:

• Immediately at fault recognition

GENERAL DESCRIPTION < Ref. to GD(H6DO)-203, DTC P2089 INTAKE CAMSHAFT POSITION ACTU-

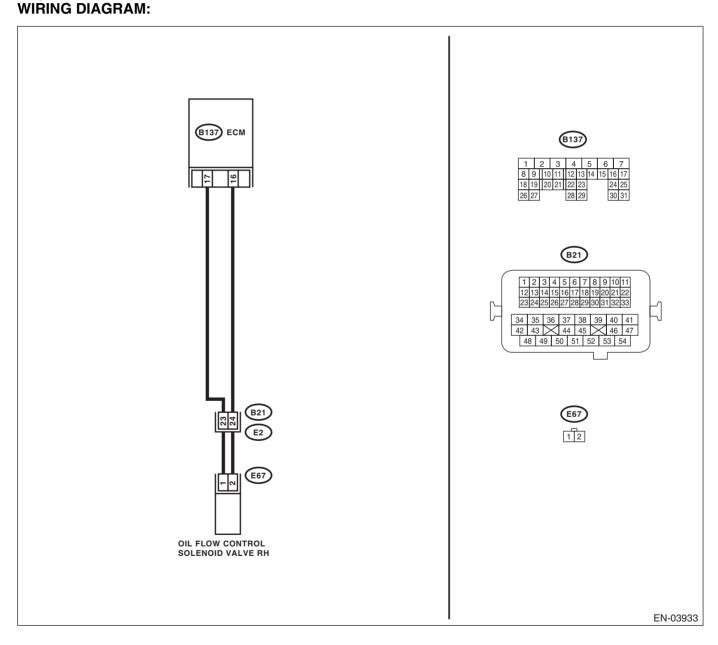
ATOR CONTROL CIRCUIT HIGH (BANK 1), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Erroneous idling

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	 CHECK HARNESS BETWEEN ECM AND OIL FLOW CONTROL SOLENOID VALVE. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM and oil flow control solenoid valve. 3) Measure the resistance between oil flow control solenoid valve and engine ground. <i>Connector & terminal</i> (E67) No. 1 — Engine ground: (E67) No. 2 — Engine ground: 	Is the resistance more than 1 M Ω ?	Go to step 2 .	Repair the short circuit between ECM and oil flow control solenoid valve connector.
2	 CHECK OIL FLOW CONTROL SOLENOID VALVE. 1) Remove the oil flow control solenoid valve connector. 2) Measure the resistance between oil flow control solenoid valve terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i> 	Is the resistance between 6 and 12 Ω ?	Repair the poor contact of ECM and oil flow con- trol solenoid valve.	Replace the oil flow control sole- noid valve. <ref. to ME(H6DO)-77, Oil Flow Control Solenoid Valve.></ref.

DQ:DTC P2092 INTAKE CAMSHAFT POSITION ACTUATOR CONTROL CIRCUIT LOW (BANK 2)

DTC DETECTING CONDITION:

• Immediately at fault recognition

GENERAL DESCRIPTION < Ref. to GD(H6DO)-204, DTC P2092 INTAKE CAMSHAFT POSITION ACTU-

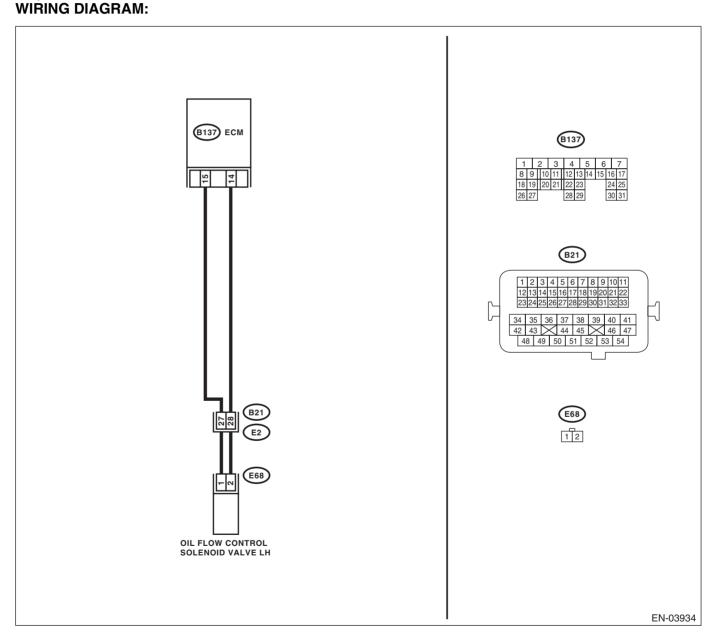
ATOR CONTROL CIRCUIT LOW (BANK 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Erroneous idling

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	 CHECK HARNESS BETWEEN ECM AND OIL FLOW CONTROL SOLENOID VALVE. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM and oil flow control solenoid valve. 3) Measure the resistance between ECM and oil flow control solenoid valve. <i>Connector & terminal</i> (B137) No. 15 — (E68) No. 1: (B137) No. 14 — (E68) No. 2: 	Is the resistance less than 1 Ω ?	Go to step 2.	Repair the open circuit of harness between ECM and oil flow control solenoid valve connector. NOTE: In this case, repair the following item: • Open circuit of harness between ECM and oil flow control solenoid valve connector • Poor contact in coupling connector
2	 CHECK OIL FLOW CONTROL SOLENOID VALVE. 1) Remove the oil flow control solenoid valve connector. 2) Measure the resistance between oil flow control solenoid valve terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i> 	Is the resistance between 6 and 12 Ω?	Repair the poor contact of ECM and oil flow con- trol solenoid valve.	Replace the oil flow control sole- noid valve. <ref. to ME(H6DO)-77, Oil Flow Control Solenoid Valve.></ref.

DR:DTC P2093 INTAKE CAMSHAFT POSITION ACTUATOR CONTROL CIRCUIT HIGH (BANK 2)

DTC DETECTING CONDITION:

• Immediately at fault recognition

GENERAL DESCRIPTION < Ref. to GD(H6DO)-204, DTC P2093 INTAKE CAMSHAFT POSITION ACTU-

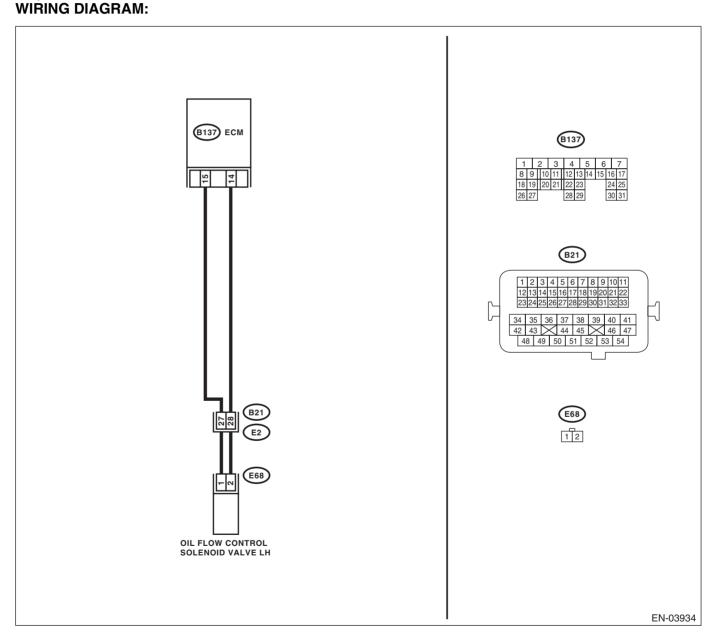
ATOR CONTROL CIRCUIT HIGH (BANK 2), Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

Erroneous idling

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



	Step	Check	Yes	No
1	 CHECK HARNESS BETWEEN ECM AND OIL FLOW CONTROL SOLENOID VALVE. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM and oil flow control solenoid valve. 3) Measure the resistance between oil flow control solenoid valve and engine ground. <i>Connector & terminal</i> (E68) No. 1 — Engine ground: (E68) No. 2 — Engine ground: 	Is the resistance more than 1 M Ω ?	Go to step 2.	Repair the short circuit between ECM and oil flow control solenoid valve connector.
2	 CHECK OIL FLOW CONTROL SOLENOID VALVE. 1) Remove the oil flow control solenoid valve connector. 2) Measure the resistance between oil flow control solenoid valve terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i> 	Is the resistance between 6 and 12 Ω?	Repair the poor contact of ECM and oil flow con- trol solenoid valve.	Replace the oil flow control sole- noid valve. <ref. to ME(H6DO)-77, Oil Flow Control Solenoid Valve.></ref.

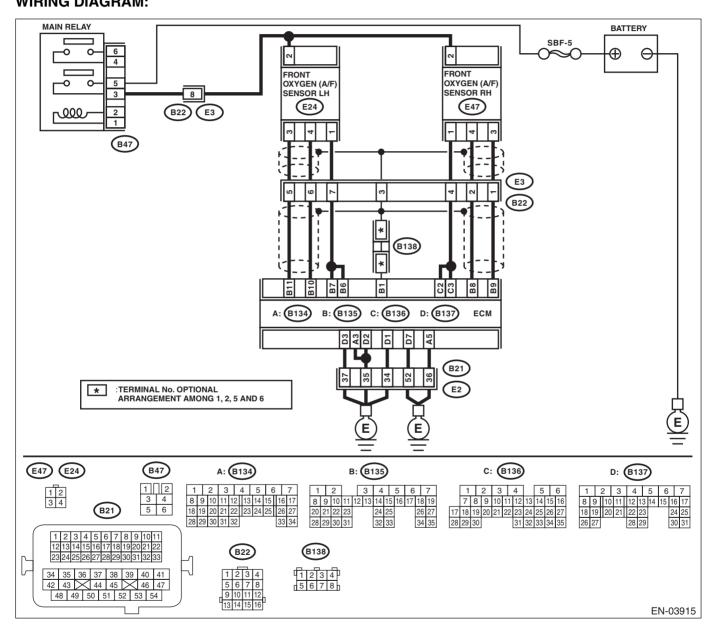
DS:DTC P2096 POST CATALYST FUEL TRIM SYSTEM TOO LEAN BANK 1 DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

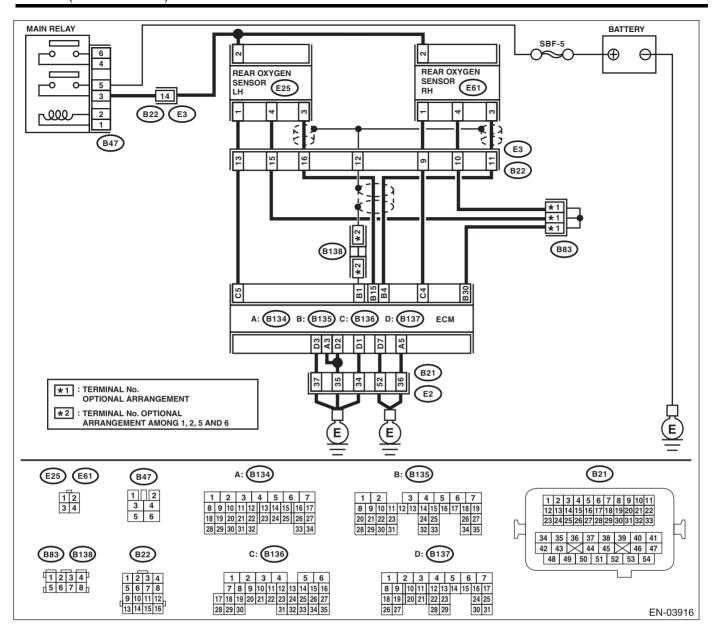
• GENERAL DESCRIPTION <Ref. to GD(H6DO)-205, DTC P2096 POST CATALYST FUEL TRIM SYS-TEM TOO LEAN BANK 1, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



Diagnostic Procedure with Diagnostic Trouble Code (DTC) ENGINE (DIAGNOSTICS)



Step	Check	Yes	No
1 CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
 2 CHECK FRONT OXYGEN (A/F) SENSOR DATA. 1) Start the engine. 2) While observing the Subaru Select Monitor or general scan tool screen, warm-up the engine until engine coolant temperature is above 75°C (167°F). If the engine is already warmed-up, operate at idle speed for at least 1 minute. 3) Read data of front oxygen (A/F) sensor signal using the Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	0.86 — 1.15 at idle?	Go to step 3.	Go to step 4.
 CHECK REAR OXYGEN SENSOR SIGNAL. Race engine at speeds from idling to 3,000 rpm for a total of 5 cycles. NOTE: To increase engine speed to 3,000 rpm, slowly depress accelerator pedal, taking approximately 5 seconds, and quickly release accelerator pedal to decrease engine speed. Operate the LED operation mode for engine. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "LED OPERATION MODE FOR ENGINE". < <l< td=""><td>Does the LED of {Rear O2 Rich Signal} blink?</td><td>Check front oxy- gen (A/F) sensor circuit.</td><td>Check rear oxygen sensor circuit. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.></td></l<>	Does the LED of {Rear O2 Rich Signal} blink?	Check front oxy- gen (A/F) sensor circuit.	Check rear oxygen sensor circuit. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>
 4 CHECK EXHAUST SYSTEM. Check exhaust system parts. NOTE: Check the following items. Looseness of part installation Damage (crack, hole etc.) of parts Looseness of the front oxygen (A/F) sensor Looseness or ill fitting of parts between front oxygen (A/F) sensor and rear oxygen sensor 		Repair or replace faulty parts.	Go to step 5 .
5 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 6 .

EN(H6DO)(diag)-305

	Step	Check	Yes	No
6	CHECK FUEL PRESSURE. WARNING: • Place "NO FIRE" signs near the working area. • Be careful not to spill fuel. Measure the fuel pressure while disconnecting pressure regulator vacuum hose from intake manifold. <ref. fuel<br="" inspection,="" me(h6do)-26,="" to="">Pressure.> WARNING: Release fuel pressure before removing the fuel pressure gauge.</ref.>		Go to step 7.	 Repair the follow- ing item. Fuel pressure is too high: Clogged fuel line or bent hose Fuel pressure is too low: Improper fuel pump discharge Clogged fuel supply line
7	CHECK FUEL PRESSURE. After connecting the pressure regulator vac- uum hose, measure fuel pressure. <ref. fuel<br="" inspection,="" me(h6do)-26,="" to="">Pressure.> WARNING: Release fuel pressure before removing the fuel pressure gauge. NOTE: If the measured value at this step is out of spec- ification, check or replace pressure regulator and pressure regulator vacuum hose.</ref.>		Go to step 8.	Repair the follow- ing item. Fuel pressure is too high: • Faulty pressure regulator • Clogged fuel line or bent hose Fuel pressure is too low: • Faulty pressure regulator • Improper fuel pump discharge • Clogged fuel supply line
8	 CHECK ENGINE COOLANT TEMPERATURE SENSOR. 1) Start the engine and warm-up completely. 2) Read the data of engine coolant tempera- ture sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	(140°F)?	Go to step 9 .	Replace the engine coolant temperature sen- sor. <ref. to<br="">FU(H6DO)-18, Engine Coolant Temperature Sen- sor.></ref.>

	Step	Check	Yes	No
9	-	Is the measured value 3.1 — 4.3 g/s (0.41 — 0.57 lb/m)?	Yes Go to step 10.	No Replace the mass air flow and intake air temperature sensor. <ref. to<br="">FU(H6DO)-24, Mass Air Flow and Intake Air Temper- ature Sensor.></ref.>
10	TEMPERATURE SENSOR.	Subtract the ambient tempera- ture from intake air tempera-	Go to step 11.	Check the mass air flow and intake
	 Start the engine and warm-up engine until coolant temperature is greater than 60°C (140°F). Place the shift lever in neutral position. Turn the A/C switch to OFF. Turn all the accessory switches to OFF. Open the front hood. Measure the ambient temperature. Read the data of mass air flow and intake air temperature sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" li="" moni-<="" select="" subaru="" to=""> </ref.>			air temperature sensor. <ref. to<br="">FU(H6DO)-24, Mass Air Flow and Intake Air Temper- ature Sensor.></ref.>
	tor.> • General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual".			
11	CHECK FRONT OXYGEN (A/F) SENSOR CONNECTOR AND COUPLING CONNEC- TOR.	Does water enter the connec- tor?	Dry the water thor- oughly.	Go to step 12.
12	 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 and front oxygen (A/F) sensor connector. 3) Measure the resistance of harness between ECM and front oxygen (A/F) sensor connector. Connector & terminal (B135) No. 8 — Chassis ground: (B135) No. 9 — Chassis ground: 	Is the resistance more than 1 $M\Omega$?	Go to step 13 .	Repair the ground short circuit of har- ness between ECM and front oxygen (A/F) sen- sor connector.

	Step	Check	Yes	No
13	CHECK HARNESS BETWEEN ECM AND	Is the voltage more than 8 V?	Go to step 14.	Repair the battery
	FRONT OXYGEN (A/F) SENSOR CONNEC-	C C		short circuit of har-
	TOR.			ness between
	 Turn the ignition switch to ON. 			ECM and front
	2) Disconnect the connector from front oxygen			oxygen (A/F) sen-
	(A/F) sensor.			sor connector.
	3) Measure the voltage of harness between			
	ECM connector and chassis ground.			
	Connector & terminal			
	(B135) No. 8 (+) — Chassis ground (–):			
	(B135) No. 9 (+) — Chassis ground (–):			
14	CHECK HARNESS BETWEEN ECM AND	Is the resistance less than 1	Go to step 15.	Repair the open
	FRONT OXYGEN (A/F) SENSOR CONNEC-	Ω?		circuit of harness
	TOR.			between ECM and
	 Turn the ignition switch to OFF. 			front oxygen (A/F)
	2) Disconnect the connector from ECM and			sensor connector.
	front oxygen (A/F) sensor connector.			
	3) Measure the resistance of harness			
	between ECM and front oxygen (A/F) sensor			
	connector.			
	Connector & terminal			
	(B135) No. 8 — (E47) No. 4:			
15	(B135) No. 9 — (E47) No. 3:		O a ta atam 10	O a ta atau 10
15	CHECK REAR OXYGEN SENSOR DATA.	Is the voltage more than 490	Go to step 19.	Go to step 16.
	1) Warm-up the engine until engine coolant	mV?		
	temperature is above 70°C (158°F), and keep			
	the engine speed at 3,000 rpm. (Max. 2 min- utes)			
	,			
	2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan			
	tool.			
	NOTE: • Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". <ref.< td=""><td></td><td></td><td></td></ref.<>			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.>			
	General scan tool			
	For detailed operation procedures, refer to the			
	"General Scan Tool Instruction Manual".			
16	CHECK REAR OXYGEN SENSOR CONNEC-	Does water enter the connec-	Dry the water thor-	Go to step 17.
	TOR AND COUPLING CONNECTOR.	tor?	oughly.	
17	CHECK HARNESS BETWEEN ECM AND	Is the resistance more than 3	Repair the open	Go to step 18.
	REAR OXYGEN SENSOR CONNECTOR.	Ω?	circuit of harness	
	 Turn the ignition switch to OFF. 		between ECM and	
	Disconnect the connector from ECM and		rear oxygen sen-	
	rear oxygen sensor.		sor connector.	
	 Measure the resistance of harness 			
	between ECM and rear oxygen sensor con-			
	nector.			
	Connector & terminal			
	(B135) No. 4 — (E61) No. 3:			
	(B135) No. 30 — (E61) No. 4:			

	Step	Check	Yes	No
18	 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 resistance between the rear oxygen sensor harness connector and chassis ground. Connector & terminal (E61) No. 3 (+) — Chassis ground (-): 	Is the voltage 0.2 — 0.5 V?	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • 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
19	 CHECK REAR OXYGEN SENSOR DATA. 1) Warm-up the engine until engine coolant temperature is above 70°C (158°F), and drop the engine speed suddenly from 3,000 rpm. 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	Is the voltage less than 250 mV?	Go to step 20.	Go to step 16 .
20	 CHECK FRONT OXYGEN (A/F) SENSOR AND REAR OXYGEN SENSOR DATA. 1) Warm-up the engine until engine coolant temperature is above 70°C (158°F), and leave it for 5 minutes or more with idling. 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 		Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(H6DO)-29, Front Oxygen (A/F) Sensor.></ref.>	Go to step 17.

ENGINE (DIAGNOSTICS)

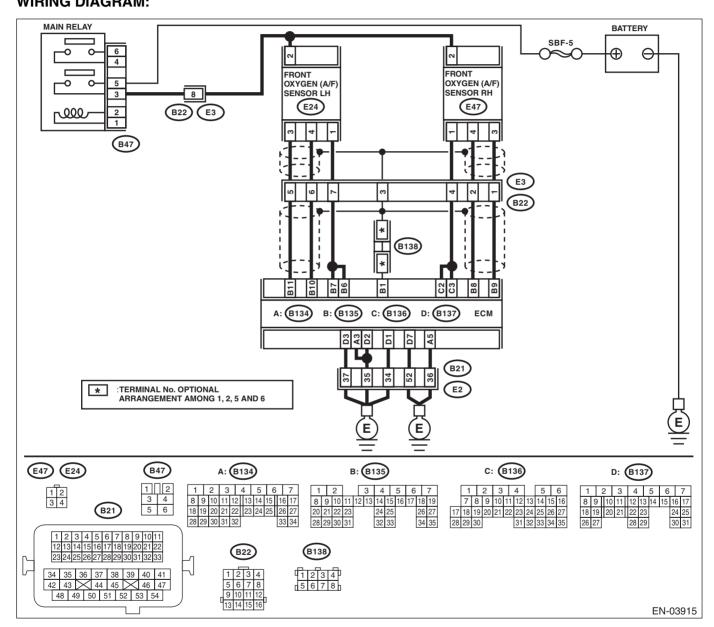
DT:DTC P2097 POST CATALYST FUEL TRIM SYSTEM TOO RICH BANK 1 DTC DETECTING CONDITION:

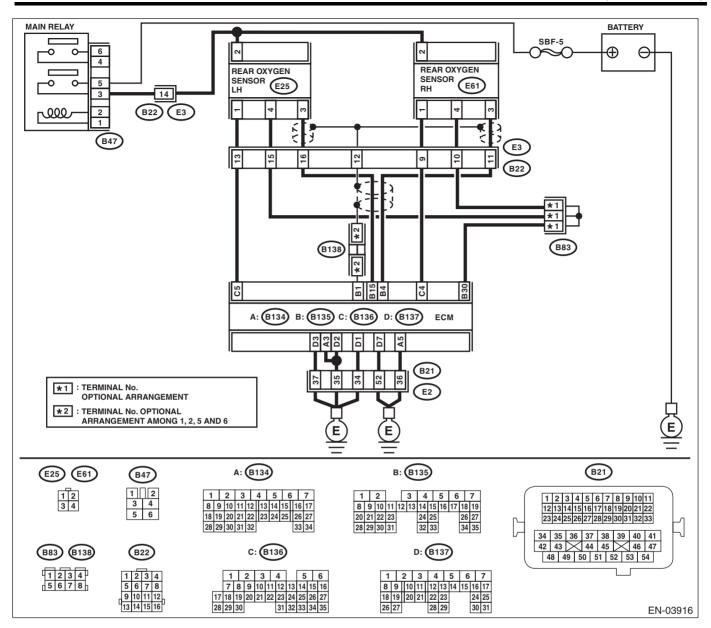
• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-207, 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, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:





ENGINE (DIAGNOSTICS)

	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
2	 CHECK FRONT OXYGEN (A/F) SENSOR DATA. 1) Start the engine. 2) While observing the Subaru Select Monitor or general scan tool screen, warm-up the engine until engine coolant temperature is above 75°C (167°F). If the engine is already warmed-up, operate at idle speed for at least 1 minute. 3) Read data of front oxygen (A/F) sensor signal using the Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	0.86 — 1.15 at idle?	Go to step 3.	Go to step 4.
3	CHECK REAR OXYGEN SENSOR SIGNAL. 1) Race engine at speeds from idling to 3,000 rpm for a total of 5 cycles. NOTE: To increase engine speed to 3,000 rpm, slowly depress accelerator pedal, taking approximate- ly 5 seconds, and quickly release accelerator pedal to decrease engine speed. 2) Operate the LED operation mode for engine. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "LED OPERATION MODE FOR ENGINE". <ref. en(h6do)(diag)-27,="" select<br="" subaru="" to="">Monitor.></ref.>		Check front oxy- gen (A/F) sensor circuit.	Check rear oxygen sensor circuit. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>
4	CHECK EXHAUST SYSTEM. Check exhaust system parts. NOTE: Check the following items. • Looseness of part installation • Damage (crack, hole etc.) of parts • Looseness of the front oxygen (A/F) sensor • Looseness or ill fitting of parts between front oxygen (A/F) sensor and rear oxygen sensor	Is there any fault in exhaust system?	Repair or replace faulty parts.	Go to step 5.
5	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 6 .

EN(H6DO)(diag)-312

	Step	Check	Yes	No
6	CHECK FUEL PRESSURE. WARNING: • Place "NO FIRE" signs near the working area. • Be careful not to spill fuel. Measure the fuel pressure while disconnecting pressure regulator vacuum hose from intake manifold. <ref. fuel<br="" inspection,="" me(h6do)-26,="" to="">Pressure.> WARNING: Release fuel pressure before removing the fuel pressure gauge.</ref.>	Is the measured value 333 — 363 kPa (3.4 — 3.7 kgf/cm ² , 48 — 53 psi)?	Go to step 7.	Repair the follow- ing item. Fuel pressure is too high: • Clogged fuel line or bent hose Fuel pressure is too low: • Improper fuel pump discharge • Clogged fuel supply line
7	CHECK FUEL PRESSURE. After connecting the pressure regulator vac- uum hose, measure fuel pressure. <ref. fuel<br="" inspection,="" me(h6do)-26,="" to="">Pressure.> WARNING: Release fuel pressure before removing the fuel pressure gauge. NOTE: If the measured value at this step is out of spec- ification, check or replace pressure regulator and pressure regulator vacuum hose.</ref.>	Is the measured value 279 — 309 kPa (2.85 — 3.15 kg/cm ² , 40 — 45 psi)?	Go to step 8.	Repair the follow- ing item. Fuel pressure is too high: • Faulty pressure regulator • Clogged fuel line or bent hose Fuel pressure is too low: • Faulty pressure regulator • Improper fuel pump discharge • Clogged fuel supply line
8	 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 general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General scan tool 	Is the temperature above 60°C (140°F)?	Go to step 9 .	Replace the engine coolant temperature sen- sor. <ref. to<br="">FU(H6DO)-18, Engine Coolant Temperature Sen- sor.></ref.>

	Step	Check	Yes	No
9	CHECK MASS AIR FLOW AND INTAKE AIR	Is the measured value 3.1 —	Go to step 10.	Replace the mass
	TEMPERATURE SENSOR.	4.3 g/s (0.41 — 0.57 lb/m)?		air flow and intake
	 Start the engine and warm-up engine until 			air temperature
	coolant temperature is greater than 60°C			sensor. <ref. td="" to<=""></ref.>
	(140°F).			FU(H6DO)-24,
	2) Place the shift lever in neutral position.			Mass Air Flow and
	3) Turn the A/C switch to OFF.			Intake Air Temper-
	4) Turn all the accessory switches to OFF.			ature Sensor.>
	5) Read the data of mass air flow and intake			
	air temperature sensor signal using Subaru			
	Select Monitor or general scan tool.			
	NOTE: • Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". < Ref.			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.> General scan tool 			
	For detailed operation procedures, refer to the			
	"General Scan Tool Instruction Manual".			
10		Subtract the ambient tempera-	Go to step 11.	Check the mass
10	TEMPERATURE SENSOR.	ture from intake air tempera-		air flow and intake
	 Start the engine and warm-up engine until 	ture. Is the obtained value –10		air temperature
	coolant temperature is greater than 60°C	-50° C (-18 -90° F)?		sensor. <ref. td="" to<=""></ref.>
	(140°F).	- 50 0 (-10 - 50 1)!		FU(H6DO)-24,
	2) Place the shift lever in neutral position.			Mass Air Flow and
	3) Turn the A/C switch to OFF.			Intake Air Temper-
	4) Turn all the accessory switches to OFF.			ature Sensor.>
	5) Open the front hood.			
	6) Measure the ambient temperature.			
	7) Read the data of mass air flow and intake			
	air temperature sensor signal using Subaru			
	Select Monitor or general scan tool.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". < Ref.			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.>			
	 General scan tool 			
	For detailed operation procedures, refer to the			
	"General Scan Tool Instruction Manual".			
11	CHECK FRONT OXYGEN (A/F) SENSOR	Does water enter the connec-	Dry the water thor-	Go to step 12.
	CONNECTOR AND COUPLING CONNEC-	tor?	oughly.	
	TOR.			-
12	CHECK HARNESS BETWEEN ECM AND	Is the resistance more than 1	Go to step 13.	Repair the ground
	FRONT OXYGEN (A/F) SENSOR CONNEC-	ΜΩ?		short circuit of har-
	TOR.			ness between
	1) Turn the ignition switch to OFF.			ECM and front
	2) Disconnect the connector from ECM and			oxygen (A/F) sen-
	front oxygen (A/F) sensor connector.			sor connector.
	3) Measure the resistance of harness			
	between ECM and front oxygen (A/F) sensor			
	connector.			
	Connector & terminal			
	(B135) No. 8 — Chassis ground:			
	(B135) No. 9 — Chassis ground:			

	Step	Check	Yes	No
13	CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC-	Is the voltage more than 8 V?	Go to step 14.	Repair the battery short circuit of har-
	TOR.			ness between
	 Turn the ignition switch to ON. 			ECM and front
	2) Disconnect the connector from front oxygen			oxygen (A/F) sen-
	(A/F) sensor.			sor connector.
	3) Measure the voltage of harness between			
	ECM connector and chassis ground.			
	Connector & terminal			
	(B135) No. 8 (+) — Chassis ground (–): (B135) No. 9 (+) — Chassis ground (–):			
14	CHECK HARNESS BETWEEN ECM AND	Is the resistance less than 1	Go to step 15.	Repair the open
14	FRONT OXYGEN (A/F) SENSOR CONNEC-	Ω ?	do to step 13.	circuit of harness
	TOR.			between ECM and
	 Turn the ignition switch to OFF. 			front oxygen (A/F)
	2) Disconnect the connector from ECM and			sensor connector.
	front oxygen (A/F) sensor connector.			
	3) Measure the resistance of harness			
	between ECM and front oxygen (A/F) sensor			
	connector.			
	Connector & terminal			
	(B135) No. 8 — (E47) No. 4:			
15	(B135) No. 9 — (E47) No. 3: CHECK REAR OXYGEN SENSOR DATA.	le the veltage mare than 400	Co to stop 10	Cata stan 16
15	1) Warm-up the engine until engine coolant	Is the voltage more than 490 mV?	Go to step 19.	Go to step 16 .
	temperature is above 70°C (158°F), and keep			
	the engine speed at 3,000 rpm. (Max. 2 min-			
	utes)			
	2) Read the data of rear oxygen sensor signal			
	using Subaru Select Monitor or general scan			
	tool.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". < Ref.			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.> • General scan tool			
	For detailed operation procedures, refer to the			
	"General Scan Tool Instruction Manual".			
16	CHECK REAR OXYGEN SENSOR CONNEC-	Does water enter the connec-	Dry the water thor-	Go to step 17.
	TOR AND COUPLING CONNECTOR.	tor?	oughly.	
17	CHECK HARNESS BETWEEN ECM AND	Is the resistance more than 3	Repair the open	Go to step 18.
	REAR OXYGEN SENSOR CONNECTOR.	Ω?	circuit of harness	
	1) Turn the ignition switch to OFF.		between ECM and	
	2) Disconnect the connector from ECM and		rear oxygen sen-	
	rear oxygen sensor. 3) Measure the resistance of harness		sor connector.	
	between ECM and rear oxygen sensor con- nector.			
	Connector & terminal			
	(B135) No. 4 — (E61) No. 3:			
	(B135) No. 30 — (E61) No. 4:			
l		1	1	

	Step	Check	Yes	No
18	 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 resistance between the rear oxygen sensor harness connector and chassis ground. Connector & terminal (E61) No. 3 (+) — Chassis ground (-): 	Is the voltage 0.2 — 0.5 V?	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • 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
19	 CHECK REAR OXYGEN SENSOR DATA. 1) Warm-up the engine until engine coolant temperature is above 70°C (158°F), and drop the engine speed suddenly from 3,000 rpm. 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General scan tool 	Is the voltage less than 250 mV?	Go to step 20 .	Go to step 16 .
20	 "General Scan Tool Instruction Manual". CHECK FRONT OXYGEN (A/F) SENSOR AND REAR OXYGEN SENSOR DATA. 1) Warm-up the engine until engine coolant temperature is above 70°C (158°F), and leave it for 5 minutes or more with idling. 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. General scan tool For detailed operation procedures, refer to the "General Scan tool 	Is the voltage more than 0.8 V for more than 5 minutes during idling?	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(H6DO)-29, Front Oxygen (A/F) Sensor.></ref.>	Go to step 17.

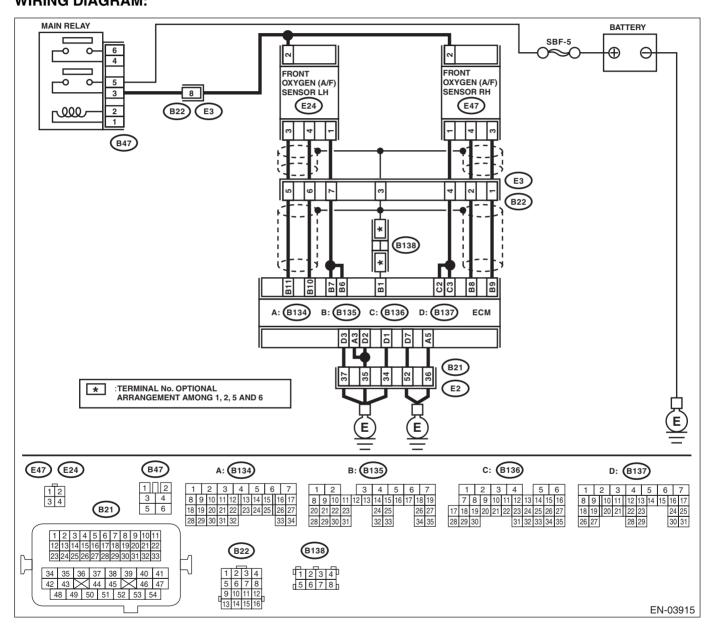
DU:DTC P2098 POST CATALYST FUEL TRIM SYSTEM TOO LEAN BANK 2 DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

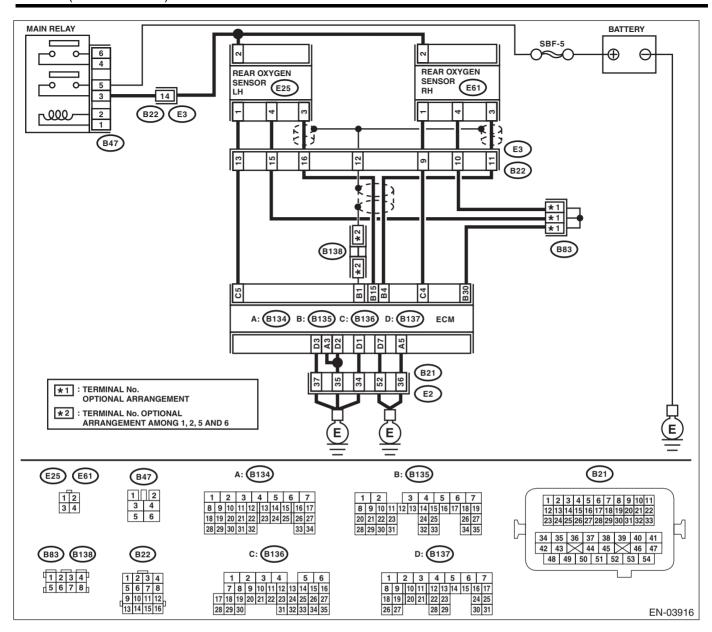
• GENERAL DESCRIPTION <Ref. to GD(H6DO)-208, DTC P2098 POST CATALYST FUEL TRIM SYS-TEM TOO LEAN BANK 2, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



Diagnostic Procedure with Diagnostic Trouble Code (DTC) ENGINE (DIAGNOSTICS)



Step	Check	Yes	No
1 CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
 2 CHECK FRONT OXYGEN (A/F) SENSOR DATA. 1) Start the engine. 2) While observing the Subaru Select Monitor or general scan tool screen, warm-up the engine until engine coolant temperature is above 75°C (167°F). If the engine is already warmed-up, operate at idle speed for at least 1 minute. 3) Read data of front oxygen (A/F) sensor signal using the Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	0.86 — 1.15 at idle?	Go to step 3.	Go to step 4.
 CHECK REAR OXYGEN SENSOR SIGNAL. Race engine at speeds from idling to 3,000 rpm for a total of 5 cycles. NOTE: To increase engine speed to 3,000 rpm, slowly depress accelerator pedal, taking approximately 5 seconds, and quickly release accelerator pedal to decrease engine speed. Operate the LED operation mode for engine. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "LED OPERATION MODE FOR ENGINE". < <l< td=""><td>Does the LED of {Rear O2 Rich Signal} blink?</td><td>Check front oxy- gen (A/F) sensor circuit.</td><td>Check rear oxygen sensor circuit. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.></td></l<>	Does the LED of {Rear O2 Rich Signal} blink?	Check front oxy- gen (A/F) sensor circuit.	Check rear oxygen sensor circuit. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>
 4 CHECK EXHAUST SYSTEM. Check exhaust system parts. NOTE: Check the following items. Looseness of part installation Damage (crack, hole etc.) of parts Looseness of the front oxygen (A/F) sensor Looseness or ill fitting of parts between front oxygen (A/F) sensor and rear oxygen sensor 		Repair or replace faulty parts.	Go to step 5 .
5 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 6 .

EN(H6DO)(diag)-319

	Step	Check	Yes	No
6	CHECK FUEL PRESSURE. WARNING: • Place "NO FIRE" signs near the working area. • Be careful not to spill fuel. Measure the fuel pressure while disconnecting pressure regulator vacuum hose from intake manifold. <ref. fuel<br="" inspection,="" me(h6do)-26,="" to="">Pressure.> WARNING: Release fuel pressure before removing the fuel pressure gauge.</ref.>		Go to step 7.	 Repair the follow- ing item. Fuel pressure is too high: Clogged fuel line or bent hose Fuel pressure is too low: Improper fuel pump discharge Clogged fuel supply line
7	CHECK FUEL PRESSURE. After connecting the pressure regulator vac- uum hose, measure fuel pressure. <ref. fuel<br="" inspection,="" me(h6do)-26,="" to="">Pressure.> WARNING: Release fuel pressure before removing the fuel pressure gauge. NOTE: If the measured value at this step is out of spec- ification, check or replace pressure regulator and pressure regulator vacuum hose.</ref.>		Go to step 8.	Repair the follow- ing item. Fuel pressure is too high: • Faulty pressure regulator • Clogged fuel line or bent hose Fuel pressure is too low: • Faulty pressure regulator • Improper fuel pump discharge • Clogged fuel supply line
8	 CHECK ENGINE COOLANT TEMPERATURE SENSOR. 1) Start the engine and warm-up completely. 2) Read the data of engine coolant tempera- ture sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	(140°F)?	Go to step 9 .	Replace the engine coolant temperature sen- sor. <ref. to<br="">FU(H6DO)-18, Engine Coolant Temperature Sen- sor.></ref.>

	Step	Check	Yes	No
9		Is the measured value 3.1 —	Go to step 10.	Replace the mass
	TEMPERATURE SENSOR.	4.3 g/s (0.41 — 0.57 lb/m)?		air flow and intake
	1) Start the engine and warm-up engine until			air temperature
	coolant temperature is greater than 60°C			sensor. <ref. td="" to<=""></ref.>
	(140°F).			FU(H6DO)-24,
	2) Place the shift lever in neutral position.			Mass Air Flow and
	3) Turn the A/C switch to OFF.			Intake Air Temper-
	4) Turn all the accessory switches to OFF.			ature Sensor.>
	5) Read the data of mass air flow and intake			
	air temperature sensor signal using Subaru			
	Select Monitor or general scan tool.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". <ref.< td=""><td></td><td></td><td></td></ref.<>			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.>			
	General scan tool			
	For detailed operation procedures, refer to the			
	"General Scan Tool Instruction Manual".			
10	CHECK MASS AIR FLOW AND INTAKE AIR	Subtract the ambient tempera-	Go to step 11.	Check the mass
	TEMPERATURE SENSOR.	ture from intake air tempera-		air flow and intake
	1) Start the engine and warm-up engine until	ture. Is the obtained value -10		air temperature
	coolant temperature is greater than 60°C	— 50°C (–18 — 90°F)?		sensor. <ref. td="" to<=""></ref.>
	(140°F).			FU(H6DO)-24,
	2) Place the shift lever in neutral position.			Mass Air Flow and
	 3) Turn the A/C switch to OFF. 4) Turn all the appropriate writeheas to OFF. 			Intake Air Temper- ature Sensor.>
	4) Turn all the accessory switches to OFF.			ature Sensor.>
	5) Open the front hood.			
	6) Measure the ambient temperature.7) Read the data of mass air flow and intake			
	air temperature sensor signal using Subaru Select Monitor or general scan tool.			
	-			
	NOTE: • Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". <ref.< td=""><td></td><td></td><td></td></ref.<>			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.>			
	General scan tool			
	For detailed operation procedures, refer to the			
	"General Scan Tool Instruction Manual".			
11	CHECK FRONT OXYGEN (A/F) SENSOR	Does water enter the connec-	Dry the water thor-	Go to step 12
• •	CONNECTOR AND COUPLING CONNEC-	tor?	oughly.	0.0 to 0.0p .=.
	TOR.			
12	CHECK HARNESS BETWEEN ECM AND	Is the resistance more than 1	Go to step 13.	Repair the ground
	FRONT OXYGEN (A/F) SENSOR CONNEC-	$M\Omega$?		short circuit of har-
	TOR.			ness between
	 Turn the ignition switch to OFF. 			ECM and front
	2) Disconnect the connector from ECM and			oxygen (A/F) sen-
	front oxygen (A/F) sensor connector.			sor connector.
	3) Measure the resistance of harness			
	between ECM and front oxygen (A/F) sensor			
	connector.			
	Connector & terminal			
	(B135) No. 10 — Chassis ground:			
	(B135) No. 11 — Chassis ground:	1	1	1

	Step	Check	Yes	No
13	CHECK HARNESS BETWEEN ECM AND	Is the voltage more than 8 V?	Go to step 14.	Repair the battery
	FRONT OXYGEN (A/F) SENSOR CONNEC-	5	•	short circuit of har-
	TOR.			ness between
	1) Turn the ignition switch to ON.			ECM and front
	2) Disconnect the connector from front oxygen			oxygen (A/F) sen-
	(A/F) sensor.			sor connector.
	3) Measure the voltage of harness between			
	ECM connector and chassis ground.			
	Connector & terminal			
	(B135) No. 10 (+) — Chassis ground (–):			
	(B135) No. 11 (+) — Chassis ground (–):			
14	CHECK HARNESS BETWEEN ECM AND	Is the resistance less than 1	Go to step 15.	Repair the open
	FRONT OXYGEN (A/F) SENSOR CONNEC-	Ω?		circuit of harness
	TOR.			between ECM and
	1) Turn the ignition switch to OFF.			front oxygen (A/F)
	2) Disconnect the connector from ECM and			sensor connector.
	front oxygen (A/F) sensor connector.			
	3) Measure the resistance of harness			
	between ECM and front oxygen (A/F) sensor			
	connector.			
	Connector & terminal			
	(B135) No. 10 — (E24) No. 4:			
	(B135) No. 11 — (E24) No. 3:			
15	CHECK REAR OXYGEN SENSOR DATA.	Is the voltage more than 490	Go to step 19.	Go to step 16.
	1) Warm-up the engine until engine coolant	mV?	•	•
	temperature is above 70°C (158°F), and keep			
	the engine speed at 3,000 rpm. (Max. 2 min-			
	utes)			
	2) Read the data of rear oxygen sensor signal			
	using Subaru Select Monitor or general scan			
	tool.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". < Ref.			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.>			
	General scan tool			
	For detailed operation procedures, refer to the			
	"General Scan Tool Instruction Manual".			
16	CHECK REAR OXYGEN SENSOR CONNEC-	Does water enter the connec-	Dry the water thor-	Go to step 17.
	TOR AND COUPLING CONNECTOR.	tor?	oughly.	
17	CHECK HARNESS BETWEEN ECM AND	Is the resistance more than 3	Repair the open	Go to step 18.
	REAR OXYGEN SENSOR CONNECTOR.	Ω?	circuit of harness	
	 Turn the ignition switch to OFF. 		between ECM and	
	2) Disconnect the connector from ECM and		rear oxygen sen-	
	rear oxygen sensor.		sor connector.	
	3) Measure the resistance of harness			
	between ECM and rear oxygen sensor con-			
	nector.			
	Connector & terminal			
	(B135) No. 15 — (E25) No. 3:			
	(B135) No. 30 — (E25) No. 4:			

	Step	Check	Yes	No
18	 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 resistance between the rear oxygen sensor harness connector and chassis ground. Connector & terminal (E25) No. 3 (+) — Chassis ground (-): 	Is the voltage 0.2 — 0.5 V?	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • 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
19	 CHECK REAR OXYGEN SENSOR DATA. 1) Warm-up the engine until engine coolant temperature is above 70°C (158°F), and drop the engine speed suddenly from 3,000 rpm. 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	Is the voltage less than 250 mV?	Go to step 20.	Go to step 16 .
20	 CHECK FRONT OXYGEN (A/F) SENSOR AND REAR OXYGEN SENSOR DATA. 1) Warm-up the engine until engine coolant temperature is above 70°C (158°F), and leave it for 5 minutes or more with idling. 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 		Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(H6DO)-29, Front Oxygen (A/F) Sensor.></ref.>	Go to step 17.

ENGINE (DIAGNOSTICS)

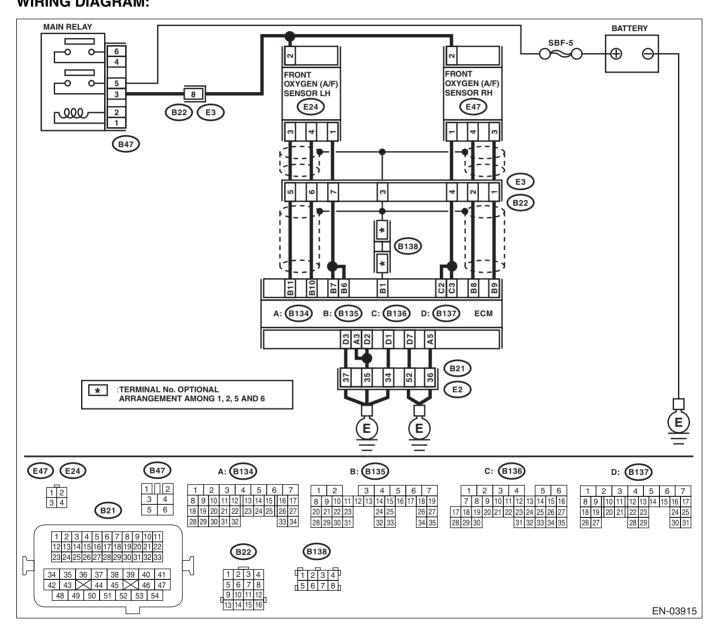
DV:DTC P2099 POST CATALYST FUEL TRIM SYSTEM TOO RICH BANK 2 DTC DETECTING CONDITION:

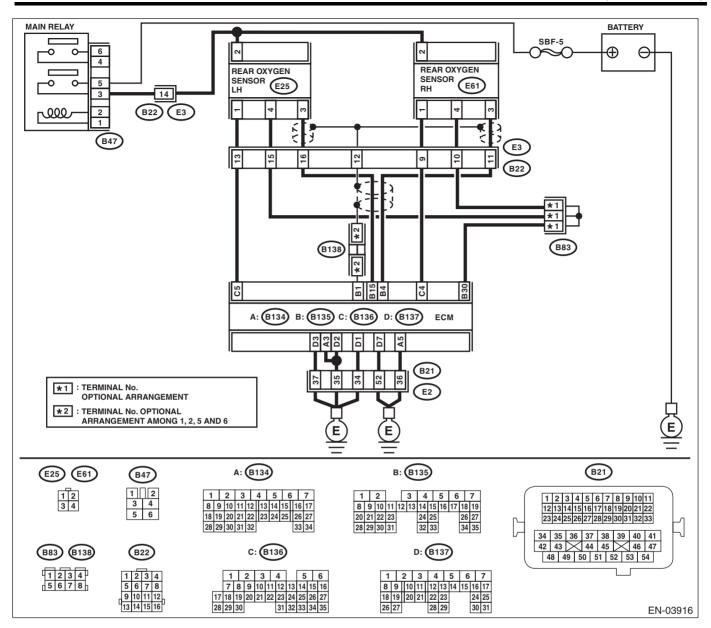
• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-208, DTC P2099 POST CATALYST FUEL TRIM SYS-TEM TOO RICH BANK 2, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:





ENGINE (DIAGNOSTICS)

	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	Inspect the rele- vant DTC using "List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)- 70, List of Diag- nostic Trouble Code (DTC).></ref.>	Go to step 2.
2	 CHECK FRONT OXYGEN (A/F) SENSOR DATA. 1) Start the engine. 2) While observing the Subaru Select Monitor or general scan tool screen, warm-up the engine until engine coolant temperature is above 75°C (167°F). If the engine is already warmed-up, operate at idle speed for at least 1 minute. 3) Read data of front oxygen (A/F) sensor signal using the Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	0.86 — 1.15 at idle?	Go to step 3.	Go to step 4.
3	 CHECK REAR OXYGEN SENSOR SIGNAL. 1) Race engine at speeds from idling to 3,000 rpm for a total of 5 cycles. NOTE: To increase engine speed to 3,000 rpm, slowly depress accelerator pedal, taking approximately 5 seconds, and quickly release accelerator pedal to decrease engine speed. 2) Operate the LED operation mode for engine. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "LED OPERATION MODE FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> 		Check front oxy- gen (A/F) sensor circuit.	Check rear oxygen sensor circuit. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>
4	 CHECK EXHAUST SYSTEM. Check exhaust system parts. NOTE: Check the following items. Looseness of part installation Damage (crack, hole etc.) of parts Looseness of the front oxygen (A/F) sensor Looseness or ill fitting of parts between front oxygen (A/F) sensor and rear oxygen sensor 	Is there any fault in exhaust system?	Repair or replace faulty parts.	Go to step 5.
5	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 6 .

EN(H6DO)(diag)-326

	Step	Check	Yes	No
6	CHECK FUEL PRESSURE. WARNING: • Place "NO FIRE" signs near the working area. • Be careful not to spill fuel. Measure the fuel pressure while disconnecting pressure regulator vacuum hose from intake manifold. <ref. fuel<br="" inspection,="" me(h6do)-26,="" to="">Pressure.> WARNING: Release fuel pressure before removing the fuel pressure gauge.</ref.>		Go to step 7.	Repair the follow- ing item. Fuel pressure is too high: • Clogged fuel line or bent hose Fuel pressure is too low: • Improper fuel pump discharge • Clogged fuel supply line
7	CHECK FUEL PRESSURE. After connecting the pressure regulator vac- uum hose, measure fuel pressure. <ref. fuel<br="" inspection,="" me(h6do)-26,="" to="">Pressure.> WARNING: Release fuel pressure before removing the fuel pressure gauge. NOTE: If the measured value at this step is out of spec- ification, check or replace pressure regulator and pressure regulator vacuum hose.</ref.>	Is the measured value 279 — 309 kPa (2.85 — 3.15 kg/cm ² , 40 — 45 psi)?	Go to step 8.	Repair the follow- ing item. Fuel pressure is too high: • Faulty pressure regulator • Clogged fuel line or bent hose Fuel pressure is too low: • Faulty pressure regulator • Improper fuel pump discharge • Clogged fuel supply line
8	 CHECK ENGINE COOLANT TEMPERATURE SENSOR. 1) Start the engine and warm-up completely. 2) Read the data of engine coolant tempera- ture sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. General scan tool For detailed operation procedures, refer to the "General scan tool Instruction Manual". 	(140°F)?	Go to step 9 .	Replace the engine coolant temperature sen- sor. <ref. to<br="">FU(H6DO)-18, Engine Coolant Temperature Sen- sor.></ref.>

	Step	Check	Yes	No
9	 CHECK MASS AIR FLOW AND INTAKE AIR TEMPERATURE SENSOR. 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 the accessory switches to OFF. 5) Read the data of mass air flow and intake air temperature sensor signal using Subaru Select Monitor or general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. • General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	Is the measured value 3.1 — 4.3 g/s (0.41 — 0.57 lb/m)?	Go to step 10.	Replace the mass air flow and intake air temperature sensor. <ref. to<br="">FU(H6DO)-24, Mass Air Flow and Intake Air Temper- ature Sensor.></ref.>
10			Go to step 11.	Check the mass air flow and intake air temperature sensor. <ref. to<br="">FU(H6DO)-24, Mass Air Flow and Intake Air Temper- ature Sensor.></ref.>
11	CHECK FRONT OXYGEN (A/F) SENSOR CONNECTOR AND COUPLING CONNEC- TOR.	Does water enter the connec- tor?	Dry the water thor- oughly.	Go to step 12 .
12	 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 and front oxygen (A/F) sensor connector. 3) Measure the resistance of harness between ECM and front oxygen (A/F) sensor connector. Connector & terminal (B135) No. 10 — Chassis ground: (B135) No. 11 — Chassis ground: 	Is the resistance more than 1 $M\Omega$?	Go to step 13 .	Repair the ground short circuit of har- ness between ECM and front oxygen (A/F) sen- sor connector.

	Step	Check	Yes	No
13	 CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC- TOR. 1) Turn the ignition switch to ON. 2) Disconnect the connector from front oxygen (A/F) sensor. 3) Measure the voltage of harness between ECM connector and chassis ground. Connector & terminal (B135) No. 10 (+) — Chassis ground (-): (B135) No. 11 (+) — Chassis ground (-): (B135) No. 11 (+) — Chassis ground (-): 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 and front oxygen (A/F) sensor connector. 	Check Is the voltage more than 8 V?	Yes Go to step 14. Go to step 15.	No Repair the battery short circuit of har- ness between ECM and front oxygen (A/F) sen- sor connector. Repair the open circuit of harness between ECM and front oxygen (A/F) sensor connector.
	 3) Measure the resistance of harness between ECM and front oxygen (A/F) sensor connector. Connector & terminal (B135) No. 10 — (E24) No. 4: (B135) No. 11 — (E24) No. 3: 			
15	 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 3,000 rpm. (Max. 2 minutes) 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 		Go to step 19.	Go to step 16 .
16	CHECK REAR OXYGEN SENSOR CONNEC- TOR AND COUPLING CONNECTOR.	Does water enter the connec- tor?	Dry the water thor-	Go to step 17.
17	 CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM and rear oxygen sensor. 3) Measure the resistance of harness between ECM and rear oxygen sensor con- nector. Connector & terminal (B135) No. 15 — (E25) No. 3: (B135) No. 30 — (E25) No. 4: 	Is the resistance more than 3 Ω ?	oughly. Repair the open circuit of harness between ECM and rear oxygen sen- sor connector.	Go to step 18.

	Step	Check	Yes	No
18	 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 resistance between the rear oxygen sensor harness connector and chassis ground. Connector & terminal (E25) No. 3 (+) — Chassis ground (-): 	Is the voltage 0.2 — 0.5 V?	Replace the rear oxygen sensor. <ref. to<br="">FU(H6DO)-31, Rear Oxygen Sen- sor.></ref.>	Repair the har- ness and connec- tor. NOTE: In this case, repair the following item: • 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
19	 CHECK REAR OXYGEN SENSOR DATA. 1) Warm-up the engine until engine coolant temperature is above 70°C (158°F), and drop the engine speed suddenly from 3,000 rpm. 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	Is the voltage less than 250 mV?	Go to step 20 .	Go to step 16 .
20	 CHECK FRONT OXYGEN (A/F) SENSOR AND REAR OXYGEN SENSOR DATA. 1) Warm-up the engine until engine coolant temperature is above 70°C (158°F), and leave it for 5 minutes or more with idling. 2) Read the data of rear oxygen sensor signal using Subaru Select Monitor or general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. General scan tool For detailed operation procedures, refer to the "General Scan Tool Instruction Manual". 	Is the voltage more than 0.8 V for more than 5 minutes during idling?	Replace the front oxygen (A/F) sen- sor. <ref. to<br="">FU(H6DO)-29, Front Oxygen (A/F) Sensor.></ref.>	Go to step 17.

ENGINE (DIAGNOSTICS)

DW:DTC P2101 THROTTLE ACTUATOR CONTROL MOTOR CIRCUIT RANGE/ PERFORMANCE

DTC DETECTING CONDITION:

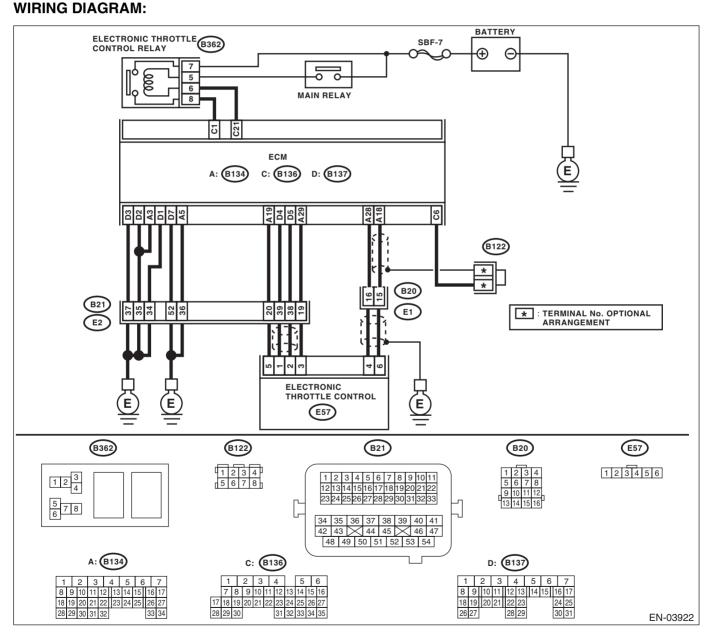
- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-209, DTC P2101 THROTTLE ACTUATOR CONTROL MOTOR CIRCUIT RANGE/PERFORMANCE, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- · Erroneous idling
- Poor driving performance
- Engine stalls.

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



EN(H6DO)(diag)-331

	Step	Check	Yes	No
1	CHECK ELECTRONIC THROTTLE CON-	Is the resistance less than 1	Go to step 2.	Replace the elec-
	TROL RELAY.	Ω?		tronic throttle con-
	1) Turn the ignition switch to OFF.			trol relay.
	2) Remove the electronic throttle control relay.			
	3) Connect the battery to terminals No. 5 and			
	No. 6 of electronic throttle control relay.			
	4) Measure the resistance between electronic			
	throttle control relay terminals. <i>Terminals</i>			
	No. 7 — No. 8:			
2	CHECK POWER SUPPLY OF ELECTRONIC	Is the voltage more than 10 V?	Go to step 3	Repair the open or
-	THROTTLE CONTROL RELAY.			ground short cir-
	1) Turn the ignition switch to ON.			cuit of power sup-
	2) Measure the voltage between electronic			ply circuit.
	throttle control relay connector and chassis			
	ground.			
	Connector & terminal			
	(B362) No. 7 (+) — Chassis ground (–):			
	(B362) No. 5 (+) — Chassis ground (–):			
3	CHECK HARNESS BETWEEN ECM AND	Is the voltage more than 10 V?	Repair the power	Go to step 4.
	ELECTRONIC THROTTLE CONTROL RE-		supply short circuit	
	LAY.		of harness	
	1) Turn the ignition switch to OFF.		between ECM and	
	2) Disconnect the connectors from ECM.		electronic throttle	
	3) Turn the ignition switch to ON.		control.	
	4) Measure the voltage between electronic			
	throttle control relay connector and chassis			
	ground. Connector & terminal			
	(B362) No. 6 (+) — Chassis ground (–):			
4	CHECK HARNESS BETWEEN ECM AND	Is the resistance more than 1	Go to step 5.	Repair the ground
	ELECTRONIC THROTTLE CONTROL RE-	ΜΩ?	I.	short circuit of har-
	LAY.			ness between
	 Turn the ignition switch to OFF. 			ECM and elec-
	2) Measure the resistance between electronic			tronic throttle con-
	throttle control relay connector and chassis			trol relay.
	ground.			
	Connector & terminal			
	(B362) No. 6 — Chassis ground:			
	(B362) No. 8 — Chassis ground:		-	
5	CHECK HARNESS BETWEEN ECM AND	Is the resistance less than 1	Go to step 6.	Repair the open
	ELECTRONIC THROTTLE CONTROL RE-	Ω?		circuit of harness
	LAY.			between ECM and
	Measure the resistance between ECM connec- tor and electronic throttle control relay connec-			electronic throttle control relay.
	tor.			control relay.
	Connector & terminal			
	(B136) No. 21 — (B362) No. 6:			
	(B136) No. 1 — (B362) No. 8:			
6	CHECK SENSOR OUTPUT.	Is the voltage more than 0.4 V?	Go to step 7.	Go to step 9.
	1) Connect all connectors.		· · · · · ·	
1	2) Turn the ignition switch to ON.			
	3) Read the data of main throttle sensor signal			
	3) Read the data of main throttle sensor signal using Subaru Select Monitor.			
	using Subaru Select Monitor.			
	,			
	using Subaru Select Monitor. NOTE:			
	using Subaru Select Monitor. NOTE: Subaru Select Monitor			
	using Subaru Select Monitor. NOTE: Subaru Select Monitor For detailed operation procedure, refer to			

	Step	Check	Yes	No
7	CHECK SENSOR OUTPUT.	Is the voltage more than 0.8 V?		Go to step 9.
	Read the data of sub throttle sensor signal	5	, i	1
	using Subaru Select Monitor.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". < Ref.			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.>			
8	CHECK POOR CONTACT.	Is there poor contact?	Repair the poor	Go to step 13.
	Check poor contact in connector between		contact.	
	ECM and electronic throttle control.			
9	CHECK HARNESS BETWEEN ECM AND	Is the resistance less than 1	Go to step 10.	Repair the open
	ELECTRONIC THROTTLE CONTROL.	Ω?		circuit of harness
	1) Turn the ignition switch to OFF.			connector.
	 Disconnect the connectors from ECM. Disconnect the connectors from electronic 			
	 Disconnect the connectors from electronic throttle control. 			
	4) Measure the resistance between ECM con-			
	nector and electronic throttle control connector.			
	Connector & terminal			
	(B134) No. 18 — (E57) No. 6:			
	(B134) No. 28 — (E57) No. 4:			
	(B134) No. 19 — (E57) No. 5:			
10	CHECK HARNESS BETWEEN ECM AND	Is the resistance more than 1	Go to step 11.	Repair the ground
	ELECTRONIC THROTTLE CONTROL.	ΜΩ?		short circuit of har-
	Measure the resistance between ECM connec-			ness.
	tor and chassis ground.			
	Connector & terminal			
	(B134) No. 16 — Chassis ground:			
	(B134) No. 28 — Chassis ground:			
	(B134) No. 19 — Chassis ground:			
11	CHECK SENSOR POWER SUPPLY.	Is the voltage 4.5 — 5.5 V?	Go to step 12.	Repair the poor
	1) Connect the ECM connector.			contact of ECM
	2) Turn the ignition switch to ON.			connector.
	3) Measure the voltage between electronic			Replace the ECM
	throttle control connector and engine ground. Connector & terminal			if defective. <ref.< td=""></ref.<>
	(E57) No. 5 (+) — Engine ground (–):			to FU(H6DO)-33, Engine Control
	$(E57)$ No. 5 (\mp) — Engine ground $(-)$.			Module (ECM).>
12	CHECK SHORT CIRCUIT IN ECM.	Is the resistance more than 10	Go to sten 13	Repair the poor
·-	1) Turn the ignition switch to OFF.	Ω ?		contact of ECM
	2) Measure the resistance between electronic			connector.
	throttle control connector and engine ground.			Replace the ECM
	Connector & terminal			if defective. <ref.< td=""></ref.<>
	(E57) No. 6 — Engine ground:			to FU(H6DO)-33,
	(E57) No. 4 — Engine ground:			Engine Control
				Module (ECM).>
13	CHECK SENSOR OUTPUT.	Is the voltage 4.63 V?	Go to step 14.	Go to step 16.
	1) Connect all connectors.			
	Turn the ignition switch to ON.			
	3) Read the data of main throttle sensor signal			
	using Subaru Select Monitor.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". < Ref.			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.>			

EN(H6DO)(diag)-333

	Step	Check	Yes	No
14	CHECK SENSOR OUTPUT. Read the data of sub throttle sensor signal using Subaru Select Monitor. NOTE: Subaru Select Monitor For detailed operation procedure, refer to	Is the voltage 4.73 V?	Go to step 15 .	Go to step 16.
	"READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. 			
15	CHECK POOR CONTACT. Check poor contact in connector between ECM and electronic throttle control.	Is there poor contact?	Repair the poor contact.	Go to step 21.
16	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Disconnect the connectors from electronic throttle control. 4) Measure the resistance between ECM con- nector and electronic throttle control connector. <i>Connector & terminal</i> (B134) No. 29 — (E57) No. 3: (B134) No. 18 — (E57) No. 6: (B134) No. 28 — (E57) No. 4: 	Is the resistance less than 1 Ω?	Go to step 17 .	Repair the open circuit of harness connector.
17	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. 1) Connect the ECM connector. 2) Measure the resistance between electronic throttle control connector and engine ground. Connector & terminal (E57) No. 3 — Engine ground: 	Is the resistance less than 5 Ω ?	Go to step 18.	Repair the poor contact of ECM connector. Replace the ECM if defective. <ref. to FU(H6DO)-33, Engine Control Module (ECM).></ref.
18	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. 1) Turn the ignition switch to ON. 2) Measure the voltage between electronic throttle control connector and engine ground. <i>Connector & terminal</i> (E57) No. 5 (+) — Engine ground (-): 	Is the voltage less than 10 V?	Go to step 19 .	Repair the battery short circuit of har- ness between ECM connector and electronic throttle control connector.
19	CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. Measure the voltage between electronic throt- tle control connector and engine ground. <i>Connector & terminal</i> (E57) No. 6 (+) — Engine ground (-): (E57) No. 4 (+) — Engine ground (-):	Is the voltage less than 10 V?	Go to step 20 .	Repair the short circuit of harness between ECM connector and electronic throttle control connector.
20	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. 1) Turn the ignition switch to OFF. 2) Remove the ECM. 3) Measure the resistance between ECM connectors. Connector & terminal (B134) No. 18 — (B134) No. 19: (B134) No. 28 — (B134) No. 19: 	Is the resistance more than 1 $M\Omega$?	Go to step 21.	Repair the short circuit to sensor power supply.

	Step	Check	Yes	No
21	 CHECK SENSOR OUTPUT. 1) Turn the ignition switch to OFF. 2) Connect the connectors except for electric throttle control relay. 3) Turn the ignition switch to ON. 4) Read the data of main throttle sensor signal using Subaru Select Monitor. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. en(h6do)(diag)-27,="" monitor.="" select="" subaru="" to=""></ref.> 		Go to step 22.	Repair the poor contact of elec- tronic throttle con- trol connector. Replace the elec- tronic throttle con- trol if defective.
22	CHECK SENSOR OUTPUT. Read the data of sub throttle sensor signal using Subaru Select Monitor. NOTE: Subaru Select Monitor For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE". <ref. to EN(H6DO)(diag)-27, Subaru Select Moni- tor.></ref. 	Is the voltage 1.64 — 1.70 V?	Go to step 23.	Repair the poor contact of ECM connector. Replace the elec- tronic throttle con- trol if defective.
23	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL MO- TOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Disconnect the connectors from electronic throttle control. 4) Measure the resistance between ECM con- nector and electronic throttle control connector. <i>Connector & terminal</i> (B137) No. 5 — (E57) No. 2: (B137) No. 4 — (E57) No. 1: 	Is the resistance less than 1 Ω ?	Go to step 24.	Repair the open circuit of harness connector.
24	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL MO- TOR. 1) Connect the connector to ECM. 2) Turn the ignition switch to ON. 3) Measure the voltage between electronic throttle control connector and engine ground. <i>Connector & 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 power supply short cir- cuit of harness between ECM and electronic throttle control.
25	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL MO- TOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Measure the resistance between electronic throttle control connector and engine ground. Connector & terminal (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 circuit of harness.
26	CHECK ELECTRONIC THROTTLE CON- TROL MOTOR HARNESS. Measure the resistance between electronic throttle control connector terminals. <i>Connector & terminal</i> (E57) No. 2 — (E57) No. 1:	Is the resistance more than 1 $M\Omega$?	Go to step 27.	Repair the short circuit of harness.

	Step	Check	Yes	No
27	CHECK ELECTRONIC THROTTLE CON- TROL GROUND CIRCUIT. Measure the resistance between ECM connec- tor and chassis ground. <i>Connector & terminal</i> (B134) No. 3 — Chassis ground: (B134) No. 5 — Chassis ground: (B137) No. 1 — Chassis ground: (B137) No. 2 — Chassis ground: (B137) No. 3 — Chassis ground: (B137) No. 7 — Chassis ground:	Is the resistance less than 10 Ω?	Go to step 28.	Repair the open circuit of the har- ness.
28	CHECK ELECTRONIC THROTTLE CON- TROL. Measure the resistance between electronic throttle control terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance less than 50 Ω ?	Go to step 29 .	Replace the elec- tronic throttle con- trol.
29	CHECK ELECTRONIC THROTTLE CON- TROL. Move the throttle valve to the fully open and fully closed positions with fingers. Check that the valve returns to the specified position when releasing fingers.	Does the valve return to the specified position? Standard value: 3 mm (0.12 in) from fully closed position	Repair the poor contact of ECM connector. Replace the ECM if defective. <ref. to FU(H6DO)-33, Engine Control Module (ECM).></ref. 	Replace the elec- tronic throttle con- trol.

DX:DTC P2102 THROTTLE ACTUATOR CONTROL MOTOR CIRCUIT LOW DTC DETECTING CONDITION:

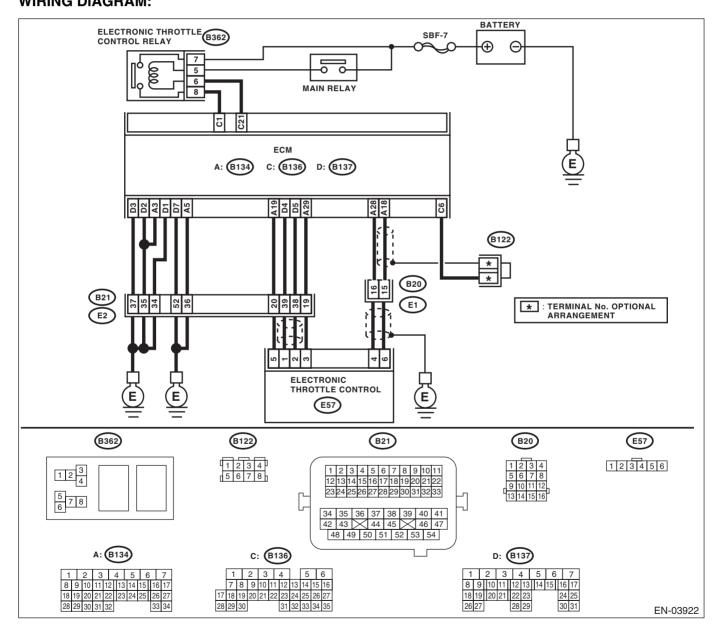
- Immediately at fault recognition
- GENERAL DESCRIPTION <Ref. to GD(H6DO)-211, DTC P2102 THROTTLE ACTUATOR CONTROL MOTOR CIRCUIT LOW, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance
- Engine stalls.

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	 CHECK ELECTRONIC THROTTLE CONTROL RELAY. 1) Turn the ignition switch to OFF. 2) Remove the electronic throttle control relay. 3) Connect the battery to terminals No. 5 and No. 6 of electronic throttle control relay. 4) Measure the resistance between electronic throttle control relay terminals. Terminals No. 7 — No. 8: 	Is the resistance less than 1 Ω ?	Go to step 2.	Replace the elec- tronic throttle con- trol relay.
2	CHECK POWER SUPPLY OF ELECTRONIC THROTTLE CONTROL RELAY. 1) Turn the ignition switch to ON. 2) Measure the voltage between electronic throttle control relay connector and chassis ground. Connector & terminal (B362) No. 7 (+) — Chassis ground (-): (B362) No. 5 (+) — Chassis ground (-):			Repair the open or ground short cir- cuit of power sup- ply circuit.
3	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL RE- LAY. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Turn the ignition switch to ON. 4) Measure the voltage between electronic throttle control relay connector and chassis ground. Connector & terminal (B362) No. 6 (+) — Chassis ground (-): 	Is the voltage more than 10 V?	Repair the power supply short circuit of harness between ECM and electronic throttle control relay.	Go to step 4.
4	CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL RE- LAY. 1) Turn the ignition switch to OFF. 2) Measure the resistance between electronic throttle control relay connector and chassis ground. Connector & terminal (B362) No. 6 — Chassis ground: (B362) No. 8 — Chassis ground:	Is the resistance more than 1 MΩ?	Go to step 5.	Repair the ground short circuit of har- ness between ECM and elec- tronic throttle con- trol relay.
5	CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL RE- LAY. Measure the resistance between ECM connec- tor and electronic throttle control relay connec- tor. Connector & terminal (B136) No. 21 — (B362) No. 6: (B136) No. 1 — (B362) No. 8:	Is the resistance less than 1 Ω ?	Repair the poor contact of ECM connector. Replace the ECM if defective. <ref. to FU(H6DO)-33, Engine Control Module (ECM).></ref. 	Repair the open circuit of harness between ECM and electronic throttle control relay.

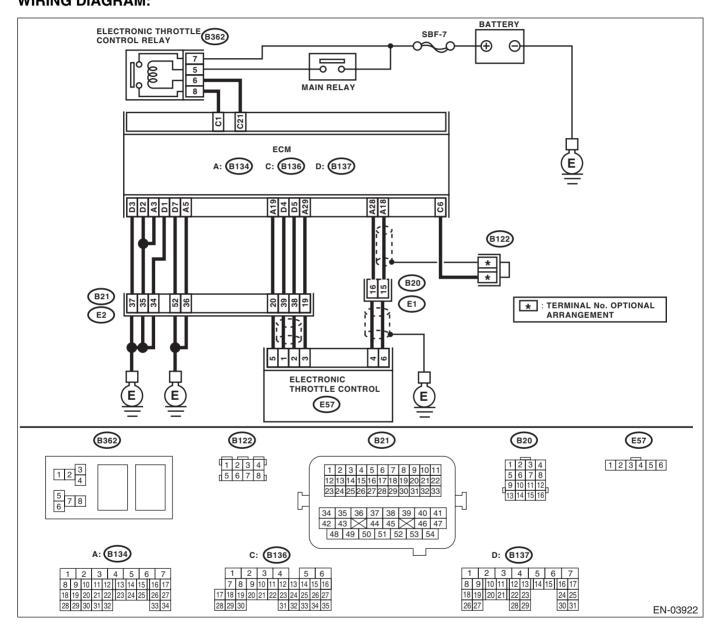
DY:DTC P2103 THROTTLE ACTUATOR CONTROL MOTOR CIRCUIT HIGH DTC DETECTING CONDITION:

• Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-213, DTC P2103 THROTTLE ACTUATOR CONTROL MOTOR CIRCUIT HIGH, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



ENGINE (DIAGNOSTICS)

	Step	Check	Yes	No
1	 CHECK ELECTRONIC THROTTLE CONTROL RELAY. 1) Turn the ignition switch to OFF. 2) Remove the electronic throttle control relay. 3) Measure the resistance between electronic throttle control relay terminals. Terminals No. 7 — No. 8: 	Is the resistance more than 1 $M\Omega$?	Go to step 2.	Replace the elec- tronic throttle con- trol relay.
2	 CHECK SHORT CIRCUIT OF ELECTRONIC THROTTLE CONTROL RELAY POWER SUP- PLY. 1) Turn the ignition switch to ON. 2) Measure the voltage between electronic throttle control relay connector and chassis ground. Connector & terminal (B362) No. 8 (+) — Chassis ground (-): 	Is the voltage more than 5 V?	Go to step 3 .	Repair the power supply short cir- cuit of harness between ECM and electronic throttle control relay.
3	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL RE- LAY. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Measure the resistance between ECM con- nector and chassis ground. Connector & terminal (B136) No. 21 — Chassis ground: 	Is the resistance more than 1 $M\Omega$?	Repair the poor contact of ECM connector. Replace the ECM if defective. <ref. to FU(H6DO)-33, Engine Control Module (ECM).></ref. 	Repair the ground short circuit of har- ness between ECM and elec- tronic throttle con- trol relay.

DZ:DTC P2109 THROTTLE/PEDAL POSITION SENSOR "A" MINIMUM STOP PERFORMANCE

NOTE:

For the diagnostic procedure, refer to DTC P2101. <Ref. to EN(H6DO)(diag)-331, DTC P2101 THROTTLE ACTUATOR CONTROL MOTOR CIRCUIT RANGE/PERFORMANCE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

EA:DTC P2122 THROTTLE/PEDAL POSITION SENSOR/SWITCH "D" CIRCUIT LOW INPUT

DTC DETECTING CONDITION:

Immediately at fault recognition

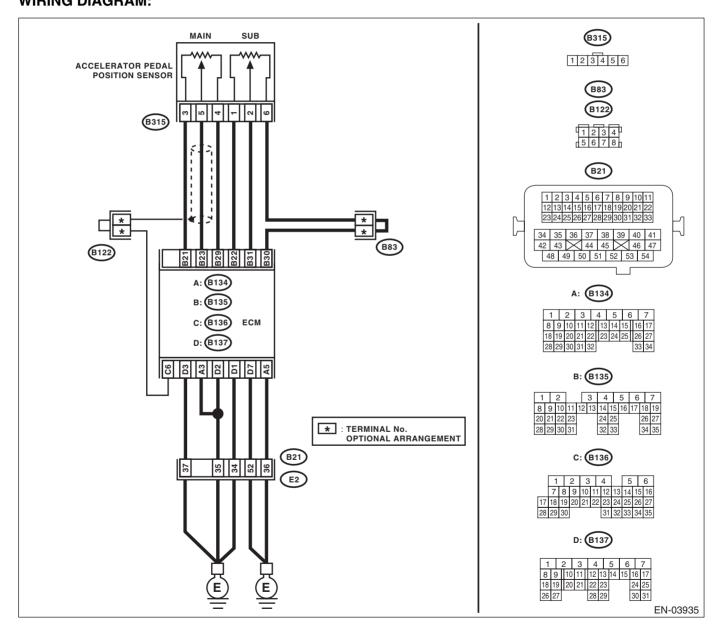
• GENERAL DESCRIPTION <Ref. to GD(H6DO)-217, DTC P2122 THROTTLE/PEDAL POSITION SEN-SOR/SWITCH "D" CIRCUIT LOW INPUT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK ACCELERATOR PEDAL POSITION SENSOR OUTPUT.	Is the voltage more than 0.4 V?		Go to step 3 .
	1) Turn the ignition switch to ON.			
	2) Read the data of main accelerator pedal			
	position sensor signal using Subaru Select			
	Monitor.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". < Ref.			
	to EN(H6DO)(diag)-27, Subaru Select Moni- tor.>			
2	CHECK POOR CONTACT.	Is there poor contact?	Repair the poor	Temporary poor
_	Check poor contact of connector between		contact.	contact occurred,
	ECM and accelerator pedal position sensor.			but it is normal at
				present.
3	CHECK HARNESS BETWEEN ECM AND AC-		Go to step 4.	Repair the open
	CELERATOR PEDAL POSITION SENSOR.	Ω?		circuit of harness
	 Turn the ignition switch to OFF. Disconnect the connectors from ECM. 			connector.
	3) Disconnect the connectors from accelerator			
	pedal position sensor.			
	4) Measure the resistance between ECM con-			
	nector and accelerator pedal position sensor			
	connector.			
	Connector & terminal			
	(B135) No. 23 — (B315) No. 5:			
4	(B135) No. 21 — (B315) No. 3: CHECK HARNESS BETWEEN ECM AND AC-		Cata star E	Densisthe shee
4	CELERATOR PEDAL POSITION SENSOR.	$M\Omega$?	Go to step 5.	Repair the chas- sis short circuit of
	Measure the resistance between ECM connec-			harness.
	tor and chassis ground.			
	Connector & terminal			
	(B135) No. 23 — Chassis ground:			
-	(B135) No. 21 — Chassis ground: CHECK POWER SUPPLY OF ACCELERA-		Cata atan C	Densis the sees
5	TOR PEDAL POSITION SENSOR.	Is the voltage 4.5 — 5.5 V?	Go to step 6 .	Repair the poor contact of ECM
	1) Connect the ECM connector.			connector.
	2) Turn the ignition switch to ON.			Replace the ECM
	3) Measure the voltage between accelerator			if defective. <ref.< td=""></ref.<>
	pedal position sensor connector and engine			to FU(H6DO)-33,
	ground.			Engine Control
	Connector & terminal (B315) No. 3 (+) — Engine ground (–):			Module (ECM).>
6	CHECK ACCELERATOR PEDAL POSITION	Is the resistance between 1.2	Go to step 7.	Replace the accel-
	SENSOR.	and 4.8 k Ω ?		erator pedal posi-
	Measure the resistance of accelerator pedal			tion sensor.
	position sensor.			
	Terminals			
7	No. 3 — No. 4: CHECK ACCELERATOR PEDAL POSITION	le the registeres between 0.0	Co to oton 9	Doplage the secol
ľ	SENSOR.	Is the resistance between 0.2 and 1.0 k Ω ?	Go to step 8.	Replace the accel- erator pedal posi-
	Measure the resistance of accelerator pedal			tion sensor.
	position sensor.			
	Terminals			
	No. 5 — No. 4:			
	Check the measured value is within the specifi-			
	cation without depressing the accelerator			
	pedal.			

	Step	Check	Yes	No
8		Is the resistance between 0.5		Replace the accel-
		and 2.5 kΩ?		erator pedal posi-
	Measure the resistance of accelerator pedal			tion sensor.
	position sensor.		Replace the ECM	
	Terminals		if defective. <ref.< td=""><td></td></ref.<>	
	No. 5 — No. 4:		to FU(H6DO)-33,	
	Check the measured value is within the specification with the accelerator pedal depressed.		Engine Control Module (ECM).>	

ENGINE (DIAGNOSTICS)

EB:DTC P2123 THROTTLE/PEDAL POSITION SENSOR/SWITCH "D" CIRCUIT HIGH INPUT

DTC DETECTING CONDITION:

Immediately at fault recognition

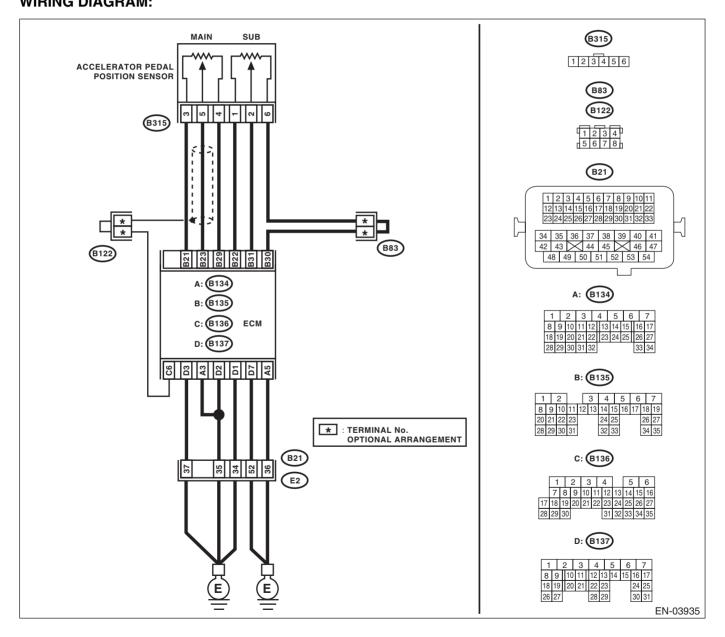
• GENERAL DESCRIPTION <Ref. to GD(H6DO)-219, DTC P2123 THROTTLE/PEDAL POSITION SEN-SOR/SWITCH "D" CIRCUIT HIGH INPUT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK ACCELERATOR PEDAL POSITION	Is the voltage less than 4.8 V?	Go to step 2.	Go to step 3.
-	SENSOR OUTPUT.		0.0 10 0.00	
	1) Turn the ignition switch to ON.			
	2) Read the data of main accelerator pedal			
	position sensor signal using Subaru Select			
	Monitor.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". < Ref.			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
_	tor.>		D	-
2	CHECK POOR CONTACT.	Is there poor contact?	Repair the poor	Temporary poor
	Check poor contact of connector between		contact.	contact occurred,
	ECM and accelerator pedal position sensor.			but it is normal at
L				present.
3	CHECK HARNESS BETWEEN ECM AND AC-		Go to step 4.	Repair the open
	CELERATOR PEDAL POSITION SENSOR.	Ω?		circuit of harness
	1) Turn the ignition switch to OFF.			connector.
	2) Disconnect the connectors from ECM.			
	3) Disconnect the connectors from accelerator			
	pedal position sensor.			
	4) Measure the resistance between ECM con-			
	nector and accelerator pedal position sensor			
	connector.			
	Connector & terminal			
	(B135) No. 29 — (B315) No. 4:			
4	CHECK HARNESS BETWEEN ECM AND AC-		Go to step 5.	Repair the poor
	CELERATOR PEDAL POSITION SENSOR.	Ω?		contact of ECM
	1) Connect the ECM connector.			connector.
	2) Measure the resistance between accelera-			Replace the ECM
	tor pedal position sensor connector and engine			if defective. <ref.< td=""></ref.<>
	ground.			to FU(H6DO)-33,
	Connector & terminal			Engine Control
	(B315) No. 4 — Engine ground:		-	Module (ECM).>
5	CHECK HARNESS BETWEEN ECM AND AC-	Is the voltage less than 6 V?	Go to step 6.	Repair the battery
	CELERATOR PEDAL POSITION SENSOR.			short circuit of har-
	1) Connect the ECM connector.			ness between
	2) Turn the ignition switch to ON.			ECM connector
	3) Measure the voltage between accelerator			and accelerator
	pedal position sensor connector and engine			pedal position sen-
	ground.			sor connector.
	Connector & terminal			
<u> </u>	(B315) No. 5 (+) — Engine ground (–):			-
6	CHECK HARNESS BETWEEN ECM AND AC-		Repair the poor	Repair the short
	CELERATOR PEDAL POSITION SENSOR.	ΜΩ?	contact of acceler-	circuit to sensor
	1) Turn the ignition switch to OFF.		ator pedal position	power supply.
	Disconnect the connectors from ECM.		sensor connector.	
	3) Measure the resistance between ECM con-		Replace the accel-	
	nectors.		erator pedal posi-	
	Connector & terminal		tion sensor if	
	(B135) No. 23 — (B135) No. 21:		defective.	
	(B135) No. 23 — (B135) No. 22:			

ENGINE (DIAGNOSTICS)

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

DTC DETECTING CONDITION:

Immediately at fault recognition

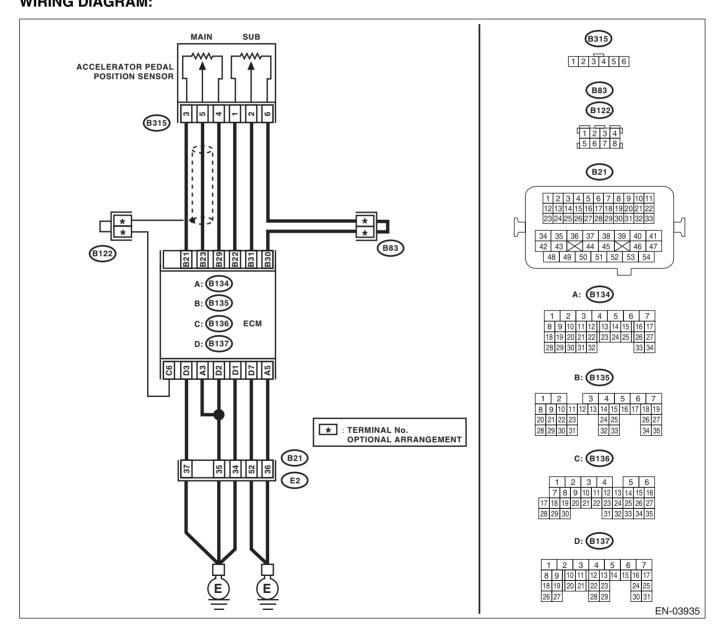
• GENERAL DESCRIPTION <Ref. to GD(H6DO)-221, DTC P2127 THROTTLE/PEDAL POSITION SEN-SOR/SWITCH "E" CIRCUIT LOW INPUT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1		Is the voltage more than 0.4 V?	Go to step 2.	Go to step 3.
	1) Turn the ignition switch to ON.			
	2) Read the data of sub accelerator pedal			
	position sensor signal using Subaru Select			
	Monitor.			
2	CHECK POOR CONTACT.	Is there poor contact?	Repair the poor	Temporary poor
	Check poor contact of connector between ECM and accelerator pedal position sensor.		contact.	contact occurred, but it is normal at present.
3	 CHECK HARNESS BETWEEN ECM AND ACCELERATOR PEDAL POSITION SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Disconnect the connectors from accelerator pedal position sensor. 4) Measure the resistance between ECM connector and accelerator pedal position sensor connector. Connector & terminal 	Is the resistance less than 1 Ω?	Go to step 4.	Repair the open circuit of harness connector.
	(B135) No. 31 — (B315) No. 2:			
4	(B135) No. 22 — (B315) No. 1:		Cata star 5	Densisthe shee
4	CHECK HARNESS BETWEEN ECM AND AC- CELERATOR PEDAL POSITION SENSOR. Measure the resistance between ECM connec- tor and chassis ground. Connector & terminal (B135) No. 31 — Chassis ground: (B135) No. 22 — Chassis ground:	Is the resistance more than 1 $M\Omega$?	Go to step 5 .	Repair the chas- sis short circuit of harness.
5	CHECK POWER SUPPLY OF ACCELERA-	Is the voltage 4.5 — 5.5 V?	Go to step 6.	Repair the poor
	 TOR PEDAL POSITION SENSOR. 1) Connect the ECM connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between accelerator pedal position sensor connector and engine ground. Connector & terminal (B315) No. 1 (+) — Engine ground (-): 			contact of ECM connector. Replace the ECM if defective. <ref. to FU(H6DO)-33, Engine Control Module (ECM).></ref.
6	CHECK ACCELERATOR PEDAL POSITION SENSOR. Measure the resistance of accelerator pedal position sensor. <i>Terminals</i> <i>No. 1 — No. 6:</i>	Is the resistance between 0.75 and 3.15 k Ω ?	Go to step 7.	Replace the accel- erator pedal posi- tion sensor.
7	CHECK ACCELERATOR PEDAL POSITION	Is the resistance between 0.15	Go to step 8.	Replace the accel-
	 SENSOR. 1) Measure the resistance of accelerator pedal position sensor. <i>Terminals</i> <i>No. 2 — No. 6:</i> 2) Check the measured value is within the specification without depressing the accelerator pedal. 	and 0.63 kΩ?		erator pedal posi- tion sensor.

Step	Check	Yes	No
 8 CHECK ACCELERATOR PEDAL POSITIC SENSOR. Measure the resistance of accelerator pedal position sensor. Terminals No. 2 — No. 6: Check the measured value is within the specification with the accelerator pedal depressed. 	Is the resistance between 0.28 and 1.68 kΩ?	Repair the poor contact of ECM connector. Replace the ECM if defective. <ref. to FU(H6DO)-33, Engine Control Module (ECM).></ref. 	Replace the accelerator pedal position sensor.

ED:DTC P2128 THROTTLE/PEDAL POSITION SENSOR/SWITCH "E" CIRCUIT HIGH INPUT

DTC DETECTING CONDITION:

Immediately at fault recognition

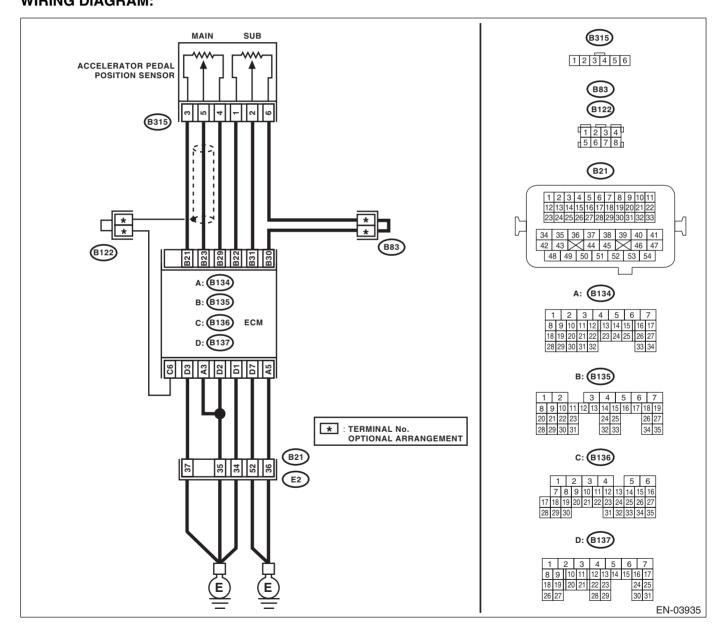
• GENERAL DESCRIPTION <Ref. to GD(H6DO)-223, DTC P2128 THROTTLE/PEDAL POSITION SEN-SOR/SWITCH "E" CIRCUIT HIGH INPUT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>. WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK ACCELERATOR PEDAL POSITION	Is the voltage less than 4.8 V?	Go to step 2.	Go to step 3.
	SENSOR OUTPUT.	-		
	1) Turn the ignition switch to ON.			
	2) Read the data of sub accelerator pedal			
	position sensor signal using Subaru Select			
	Monitor.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". <ref.< td=""><td></td><td></td><td></td></ref.<>			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.>			
2	CHECK POOR CONTACT.	Is there poor contact?	Repair the poor	Temporary poor
-	Check poor contact of connector between		contact.	contact occurred,
	ECM and accelerator pedal position sensor.		contact.	but it is normal at
				present.
3	CHECK HARNESS BETWEEN ECM AND AC-	Is the resistance less than 1	Go to step 4.	Repair the open
3	CELERATOR PEDAL POSITION SENSOR.	Ω ?	uu iu siep 4.	circuit of harness
		22:		
	1) Turn the ignition switch to OFF.			connector.
	 Disconnect the connectors from ECM. Disconnect the connectors from excelorate. 			
	3) Disconnect the connectors from accelerator			
	pedal position sensor.			
	4) Measure the resistance between ECM con-			
	nector and accelerator pedal position sensor			
	connector.			
	Connector & terminal			
	(B135) No. 30 — (B315) No. 6:		-	
4	CHECK HARNESS BETWEEN ECM AND AC-		Go to step 5.	Repair the poor
	CELERATOR PEDAL POSITION SENSOR.	Ω?		contact of ECM
	1) Connect the ECM connector.			connector.
	2) Measure the resistance between accelera-			Replace the ECM
	tor pedal position sensor connector and engine			if defective. <ref.< td=""></ref.<>
	ground.			to FU(H6DO)-33,
	Connector & terminal			Engine Control
	(B315) No. 6 — Engine ground:			Module (ECM).>
5		Is the voltage less than 6 V?	Go to step 6.	Repair the battery
	CELERATOR PEDAL POSITION SENSOR.			short circuit of har-
	 Connect the ECM connector. 			ness between
	Turn the ignition switch to ON.			ECM connector
	Measure the voltage between accelerator			and accelerator
	pedal position sensor connector and engine			pedal position sen-
	ground.			sor connector.
	Connector & terminal			
	(B315) No. 2 (+) — Engine ground (–):			
6	CHECK HARNESS BETWEEN ECM AND AC-	Is the resistance more than 1	Repair the poor	Repair the short
	CELERATOR PEDAL POSITION SENSOR.	ΜΩ?	contact of acceler-	circuit to sensor
	 Turn the ignition switch to OFF. 		ator pedal position	power supply.
	2) Disconnect the connectors from ECM.		sensor connector.	
	3) Measure the resistance between ECM con-		Replace the accel-	
	nectors.		erator pedal posi-	
	Connector & terminal		tion sensor if	
	(B135) No. 31 — (B135) No. 21:		defective.	

EE:DTC P2135 THROTTLE/PEDAL POSITION SENSOR/SWITCH "A"/"B" VOLT-AGE CORRELATION

DTC DETECTING CONDITION:

Immediately at fault recognition

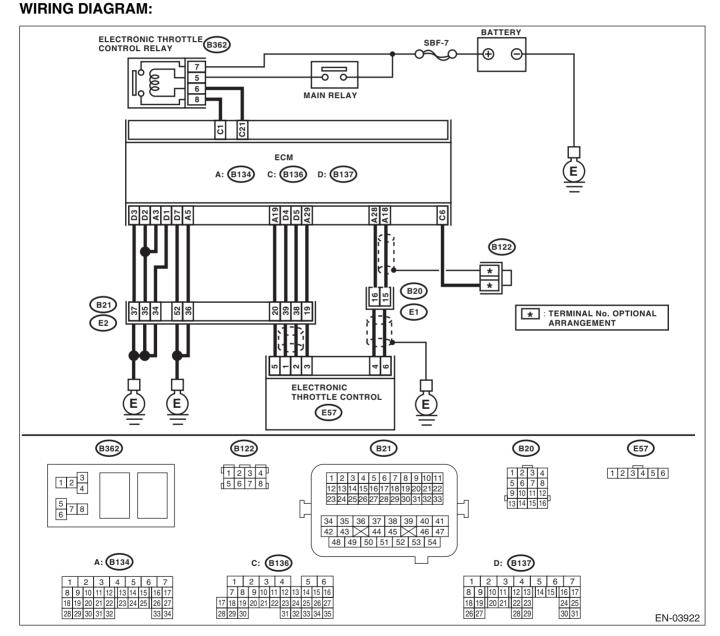
• GENERAL DESCRIPTION <Ref. to GD(H6DO)-225, DTC P2135 THROTTLE/PEDAL POSITION SEN-SOR/SWITCH "A"/"B" VOLTAGE CORRELATION, Diagnostic Trouble Code (DTC) Detecting Criteria.>

TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.



EN(H6DO)(diag)-351

	Step	Check	Yes	No
1	CHECK SENSOR OUTPUT.	Is the voltage more than 0.4 V?	Go to step 2 .	Go to step 4.
	1) Turn the ignition switch to ON.			
	2) Read the data of main throttle sensor signal			
	using Subaru Select Monitor.			
	NOTE: Subaru Select Monitor			
	For detailed operation procedure, refer to "READ CURRENT DATA FOR ENGINE", < Ref.			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	to EN(HobO)(diag)-27, Subaru Select Moni-			
2	CHECK SENSOR OUTPUT.	Is the voltage more than 0.8 V?	Go to step 3	Go to step 4.
-	Read the data of sub throttle sensor signal			
	using Subaru Select Monitor.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". <ref.< td=""><td></td><td></td><td></td></ref.<>			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.>			
3	CHECK POOR CONTACT.	Is there poor contact?	Repair the poor	Go to step 14.
	Check poor contact in connector between		contact.	
	ECM and electronic throttle control.			
4	CHECK HARNESS BETWEEN ECM AND	Is the resistance less than 1	Go to step 5.	Repair the open
	ELECTRONIC THROTTLE CONTROL.	Ω?		circuit of harness
	 Turn the ignition switch to OFF. 			connector.
	Disconnect the connectors from ECM.			
	Disconnect the connectors from electronic			
	throttle control.			
	4) Measure the resistance between ECM con-			
	nector and electronic throttle control connector.			
	Connector & terminal			
	(B134) No. 18 — (E57) No. 6:			
	(B134) No. 28 — (E57) No. 4:			
-	(B134) No. 19 — (E57) No. 5:		0 a da adam 0	Demoin the environment
5	CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL.	Is the resistance more than 1 $M\Omega$?	Go to step 6.	Repair the ground short circuit of har-
	Measure the resistance between ECM connec-	IVIS 2 ?		
				ness.
	tor and chassis ground. Connector & terminal			
	(B134) No. 18 — Chassis ground:			
	(B134) No. 28 — Chassis ground:			
	(B134) No. 19 — Chassis ground:			
6	CHECK SENSOR POWER SUPPLY.	Is the voltage 4.5 — 5.5 V?	Go to step 7.	Repair the poor
•	1) Connect the ECM connector.			contact of ECM
	2) Turn the ignition switch to ON.			connector.
	3) Measure the voltage between electronic			Replace the ECM
	throttle control connector and engine ground.			if defective. <ref.< td=""></ref.<>
	Connector & terminal			to FU(H6DO)-33,
	(E57) No. 5 (+) — Engine ground (–):			Engine Control
				Module (ECM).>
7	CHECK SHORT CIRCUIT IN ECM.	Is the resistance more than 10	Go to step 8.	Repair the poor
	1) Turn the ignition switch to OFF.	Ω?	•	contact of ECM
	2) Measure the resistance between electronic			connector.
	throttle control connector and engine ground.			Replace the ECM
	Connector & terminal			if defective. <ref.< td=""></ref.<>
	(E57) No. 6 — Engine ground:			to FU(H6DO)-33,
	(E57) No. 4 — Engine ground:			Engine Control
				Module (ECM).>

	Step	Check	Yes	No
8	CHECK SENSOR OUTPUT.	Is the voltage less than 4.63	Go to step 9.	Go to step 11.
-	1) Connect all the connectors.	V?		
	2) Turn the ignition switch to ON.			
	3) Read the data of main throttle sensor signal			
	,			
	using Subaru Select Monitor.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". < Ref.			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.>			
9	CHECK SENSOR OUTPUT.	Is the voltage less than 4.73	Go to step 10.	Go to step 11.
Ŭ	Read the data of sub throttle sensor signal	V?		
	using Subaru Select Monitor.	•		
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". < Ref.			
	to EN(H6DO)(diag)-27, Subaru Select Moni-			
	tor.>			
10	CHECK POOR CONTACT.	Is there poor contact?	Repair the poor	Temporary poor
	Check poor contact in connector between		contact.	contact occurred,
	ECM and electronic throttle control.		contact.	but it is normal at
	EGM and electronic throttle control.			
				present.
11	CHECK HARNESS BETWEEN ECM AND	Is the resistance less than 1	Go to step 12.	Repair the open
	ELECTRONIC THROTTLE CONTROL.	Ω?		circuit of harness
	 Turn the ignition switch to OFF. 			connector.
	Disconnect the connectors from ECM.			
	3) Disconnect the connectors from electronic			
	throttle control.			
	4) Measure the resistance between ECM con-			
	nector and electronic throttle control connector.			
	Connector & terminal			
	(B134) No. 29 — (E57) No. 3:			
	(B134) No. 18 — (E57) No. 6:			
10	(B134) No. 28 — (E57) No. 4:			D
12	CHECK HARNESS BETWEEN ECM AND	Is the resistance less than 5	Go to step 13.	Repair the poor
	ELECTRONIC THROTTLE CONTROL.	Ω?		contact of ECM
	 Connect the ECM connector. 			connector.
	2) Measure the resistance between electronic			Replace the ECM
	throttle control connector and engine ground.			if defective. <ref.< td=""></ref.<>
	Connector & terminal			to FU(H6DO)-33,
	(E57) No. 3 — Engine ground:			Engine Control
				Module (ECM).>
13	CHECK HARNESS BETWEEN ECM AND	Is the voltage less than 10 V?	Go to step 14.	Repair the battery
` `	ELECTRONIC THROTTLE CONTROL.			short circuit of har-
	 Connect the ECM connector. 			ness between
				ECM connector
	2) Turn the ignition switch to ON.			
	3) Measure the voltage between electronic			and electronic
	throttle control connector and engine ground.			throttle control
	Connector & terminal			connector.
	(E57) No. 5 (+) — Engine ground (–):			
14	CHECK HARNESS BETWEEN ECM AND	Is the voltage less than 10 V?	Go to step 15.	Repair the short
	ELECTRONIC THROTTLE CONTROL.	_		circuit of harness
	Measure the voltage between electronic throt-			between ECM
	tle control connector and engine ground.			connector and
	Connector & terminal			electronic throttle
I				control connector.
	$(E57)$ No 6(μ) Engine ground ():			
	(E57) No. 6 (+) — Engine ground (–): (E57) No. 4 (+) — Engine ground (–):			control connector.

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	Step	Check	Yes	No
15	 CHECK HARNESS BETWEEN ECM AND ELECTRONIC THROTTLE CONTROL. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM. 3) Measure the resistance between ECM connectors. Connector & terminal (B134) No. 18 – (B134) No. 19: (B134) No. 28 – (B134) No. 19: 	Is the resistance more than 1 $M\Omega$?	Go to step 16.	Repair the short circuit to sensor power supply.
16	 CHECK ELECTRONIC THROTTLE CONTROL HARNESS. 1) Disconnect the connectors from ECM. 2) Disconnect the connectors from electronic throttle control. 3) Measure the resistance between electronic throttle control connector terminals. Connector & terminal (E57) No. 6 — (E57) No. 4: 	Is the resistance more than 1 $M\Omega$?	Repair the poor contact of ECM connector. Replace the ECM if defective. <ref. to FU(H6DO)-33, Engine Control Module (ECM).></ref. 	Repair the short circuit of harness.

EF:DTC P2138 THROTTLE/PEDAL POSITION SENSOR/SWITCH "D"/"E" VOLT-AGE CORRELATION

DTC DETECTING CONDITION:

• Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-227, DTC P2138 THROTTLE/PEDAL POSITION SEN-SOR/SWITCH "D"/"E" VOLTAGE CORRELATION, Diagnostic Trouble Code (DTC) Detecting Criteria.>

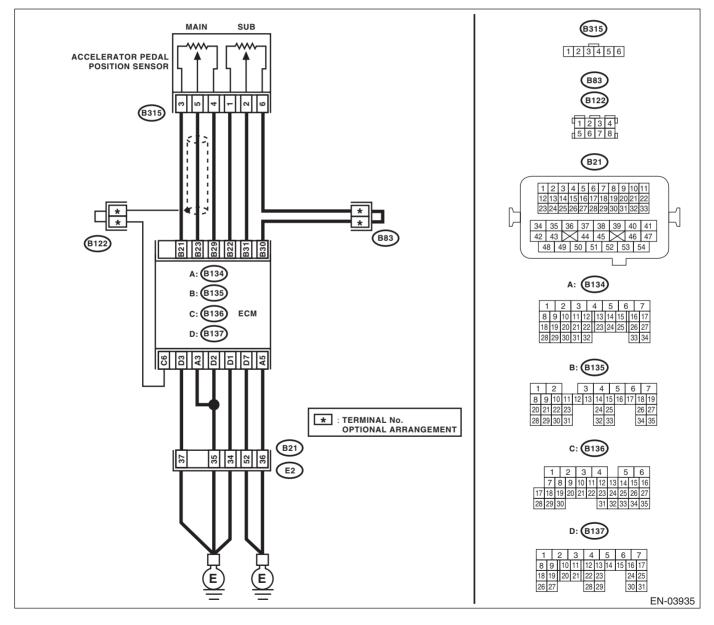
CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance

WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK ACCELERATOR PEDAL POSITION SENSOR OUTPUT.	Is the voltage more than 0.4 V?	Go to step 2.	Go to step 3.
	 Turn the ignition switch to ON. Read the data of main accelerator pedal 			
	position sensor signal and sub accelerator			
	pedal position sensor signal using Subaru			
	Select Monitor.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to			
	"READ CURRENT DATA FOR ENGINE". <ref.< td=""><td></td><td></td><td></td></ref.<>			
	to EN(H6DO)(diag)-27, Subaru Select Moni- tor.>			
2	CHECK POOR CONTACT.	Is there poor contact?	Repair the poor	Go to step 12.
_	Check poor contact of connector between		contact.	
	ECM and accelerator pedal position sensor.			
3			Go to step 4.	Repair the open
	CELERATOR PEDAL POSITION SENSOR.	Ω?		circuit of harness
	1) Turn the ignition switch to OFF.			connector.
	2) Disconnect the connectors from ECM.3) Disconnect the connectors from accelerator			
	pedal position sensor.			
	4) Measure the resistance between ECM con-			
	nector and accelerator pedal position sensor			
	connector.			
	Connector & terminal			
	(B135) No. 23 — (B315) No. 5:			
	(B135) No. 21 — (B315) No. 3: (B135) No. 31 — (B315) No. 2:			
	(B135) No. 37 — (B315) No. 2. (B135) No. 22 — (B315) No. 1:			
4	CHECK HARNESS BETWEEN ECM AND AC-	Is the resistance more than 1	Go to step 5.	Repair the ground
	CELERATOR PEDAL POSITION SENSOR.	ΜΩ?		short circuit of har-
	Measure the resistance between ECM connec-			ness.
	tor and chassis ground.			
	Connector & terminal			
	(B135) No. 23 — Chassis ground: (B135) No. 21 — Chassis ground:			
	(B135) No. 31 — Chassis ground:			
	(B135) No. 22 — Chassis ground:			
5	CHECK POWER SUPPLY OF ACCELERA-	Is the voltage 4.5 — 5.5 V?	Go to step 6.	Repair the poor
	TOR PEDAL POSITION SENSOR.			contact of ECM
	1) Connect the ECM connector.			connector.
	 Turn the ignition switch to ON. Measure the voltage between accelerator 			Replace the ECM if defective. <ref.< td=""></ref.<>
	pedal position sensor connector and engine			to FU(H6DO)-33,
	ground.			Engine Control
	Connector & terminal			Module (ECM).>
	(B315) No. 3 (+) — Engine ground (–):			
_	(B315) No. 1 (+) — Engine ground (–):			
6	CHECK ACCELERATOR PEDAL POSITION	Is the resistance between 1.2	Go to step 7.	Replace the accel-
	SENSOR.	and 4.8 k Ω ?		erator pedal posi-
	Measure the resistance of accelerator pedal position sensor.			tion sensor.
	Terminals			
	No. 3 — No. 4:			

ENGINE (DIAGNOSTICS)

	Step	Check	Yes	No
7	CHECK ACCELERATOR PEDAL POSITION	Is the resistance between 0.75	Go to step 8.	Replace the accel-
	SENSOR.	and 3.15 kΩ?		erator pedal posi-
	Measure the resistance of accelerator pedal			tion sensor.
	position sensor.			
	Terminals			
-	No. 1 — No. 6:		-	-
8	CHECK ACCELERATOR PEDAL POSITION	Is the resistance between 0.2	Go to step 9.	Replace the accel-
	SENSOR.	and 0.8 kΩ?		erator pedal posi- tion sensor.
	Measure the resistance of accelerator pedal position sensor without depressing the accel-			tion sensor.
	erator pedal.			
	Terminals			
	No. 5 — No. 4:			
9	CHECK ACCELERATOR PEDAL POSITION	Is the resistance between 0.15	Go to step 10	Replace the accel-
•	SENSOR.	and 0.63 k Ω ?		erator pedal posi-
	Measure the resistance of accelerator pedal			tion sensor.
	position sensor without depressing the accel-			
	erator pedal.			
	Terminals			
	No. 2 — No. 6:			
10	CHECK ACCELERATOR PEDAL POSITION	Is the resistance between 0.5	Go to step 11.	Replace the accel-
	SENSOR.	and 2.5 kΩ?		erator pedal posi-
	Measure the resistance of accelerator pedal			tion sensor.
	position sensor with depressing the accelera-			
	tor pedal. <i>Terminals</i>			
	No. 5 — No. 4:			
11	CHECK ACCELERATOR PEDAL POSITION	Is the resistance between 0.28	Go to step 12	Replace the accel-
	SENSOR.	and 1.68 k Ω ?		erator pedal posi-
	Measure the resistance of accelerator pedal			tion sensor.
	position sensor with depressing the accelera-			
	tor pedal.			
	Terminals			
	No. 2 — No. 6:			
12	CHECK ACCELERATOR PEDAL POSITION	Is the voltage less than 4.8 V?	Go to step 13.	Go to step 14.
	SENSOR OUTPUT.			
	1) Turn the ignition switch to OFF.			
	2) Connect all connectors.			
	 Turn the ignition switch to ON. Dead the data of main accelerator padel 			
	4) Read the data of main accelerator pedal position sensor signal and the sub accelerator			
	pedal position sensor signal using the Subaru			
	Select Monitor.			
13	CHECK POOR CONTACT.	Is there poor contact?	Repair the poor	Go to step 18.
	Check poor contact of connector between		contact.	
	ECM and accelerator pedal position sensor.			
14	CHECK HARNESS BETWEEN ECM AND AC-	Is the resistance less than 1	Go to step 15.	Repair the open
	CELERATOR PEDAL POSITION SENSOR.	Ω?		circuit of harness
	1) Turn the ignition switch to OFF.			connector.
	2) Disconnect the connectors from ECM.			
	3) Disconnect the connectors from accelerator			
	pedal position sensor.			
	4) Measure the resistance between ECM con-			
	nector and accelerator pedal position sensor			
	connector.			
	Connector & terminal			
	(B135) No. 29 — (B315) No. 4: (B135) No. 30 — (B315) No. 6:			
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	Step	Check	Yes	No
15	 CHECK HARNESS BETWEEN ECM AND AC- CELERATOR PEDAL POSITION SENSOR. 1) Connect the ECM connector. 2) Measure the resistance between accelera- tor pedal position sensor connector and engine ground. Connector & terminal (B315) No. 4 — Engine ground: (B315) No. 6 — Engine ground: 	Is the resistance less than 5 Ω?	Go to step 16 .	Repair the poor contact of ECM connector. Replace the ECM if defective. <ref. to FU(H6DO)-33, Engine Control Module (ECM).></ref.
16	 CHECK HARNESS BETWEEN ECM AND AC- CELERATOR PEDAL POSITION SENSOR. 1) Connect the ECM connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between accelerator pedal position sensor connector and engine ground. Connector & terminal (B315) No. 5 (+) — Engine ground (-): (B315) No. 2 (+) — Engine ground (-): 		Go to step 17.	Repair the battery short circuit of har- ness between ECM connector and accelerator pedal position sen- sor connector.
17	 CHECK HARNESS BETWEEN ECM AND AC- CELERATOR PEDAL POSITION SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Measure the resistance between ECM connectors. Connector & terminal (B135) No. 23 — (B135) No. 21: (B135) No. 23 — (B135) No. 22: (B135) No. 31 — (B135) No. 21: (B135) No. 31 — (B135) No. 22: 	Is the resistance more than 1 MΩ?	Go to step 18 .	Repair the short circuit to sensor power supply.
18	 CHECK HARNESS BETWEEN ECM AND ACCELERATOR PEDAL POSITION SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Disconnect the connectors from accelerator pedal position sensor. 4) Measure the resistance between connector terminals of accelerator pedal position sensor. <i>Connector & terminal</i> (B315) No. 5 — (B315) No. 2: 	Is the resistance more than 1 $M\Omega$?	Repair the poor contact of ECM connector. Replace the ECM if defective. <ref. to FU(H6DO)-33, Engine Control Module (ECM).></ref. 	Repair the short circuit of harness between ECM connector and accelerator pedal position sensor connector.

EG:DTC P2227 BAROMETRIC PRESSURE CIRCUIT RANGE/PERFORMANCE DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-229, DTC P2227 BAROMETRIC PRESSURE CIRCUIT RANGE/PERFORMANCE, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	"List of Diagnostic Trouble Code	Replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).> NOTE: The atmospheric pressure sensor is built into the ECM.</ref.>

EH:DTC P2228 BAROMETRIC PRESSURE CIRCUIT LOW DTC DETECTING CONDITION:

• Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-230, DTC P2228 BAROMETRIC PRESSURE CIRCUIT LOW, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

Step	Check	Yes	No
1 CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	"List of Diagnostic Trouble Code (DTC)". <ref. to<br="">EN(H6DO)(diag)-</ref.>	Replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).> NOTE: The atmospheric pressure sensor is built into the ECM.</ref.>

ENGINE (DIAGNOSTICS)

EI: DTC P2229 BAROMETRIC PRESSURE CIRCUIT HIGH

DTC DETECTING CONDITION:

Immediately at fault recognition

• GENERAL DESCRIPTION <Ref. to GD(H6DO)-231, DTC P2229 BAROMETRIC PRESSURE CIRCUIT HIGH, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

	Step	Check	Yes	No
1	CHECK FOR ANY OTHER DTC ON DIS- PLAY.	Is any other DTC displayed?	"List of Diagnostic Trouble Code	Replace the ECM. <ref. to<br="">FU(H6DO)-33, Engine Control Module (ECM).> NOTE: The atmospheric pressure sensor is built into the ECM.</ref.>

EJ:DTC P2503 CHARGING SYSTEM VOLTAGE LOW

NOTE:

For the diagnostic procedure, refer to DTC P2104. <Ref. to EN(H6DO)(diag)-361, DTC P2504 CHARGING SYSTEM VOLTAGE HIGH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

ENGINE (DIAGNOSTICS)

EK:DTC P2504 CHARGING SYSTEM VOLTAGE HIGH

DTC DETECTING CONDITION:

• Immediately at fault recognition

• GENERAL DESCRIPTION < Ref. to GD(H6DO)-233, DTC P2504 CHARGING SYSTEM VOLTAGE HIGH, Diagnostic Trouble Code (DTC) Detecting Criteria.>

CAUTION:

After repair or replacement of faulty parts, perform Clear Memory Mode <Ref. to EN(H6DO)(diag)-45, OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H6DO)(diag)-36, PROCEDURE, Inspection Mode.>.

WIRING DIAGRAM:

1	Step	Check	Yes	No
4	CHECK HARNESS BETWEEN GENERATOR			
1	AND ECM CONNECTOR.	$M\Omega$?	Go to step 2.	Repair the ground short circuit of har-
		1712.2.2		ness between
	1) Turn the ignition switch to OFF.			
	2) Disconnect the connectors from generator			ECM and genera-
	and ECM.			tor connector.
	3) Measure the resistance of harness			
	between generator connector and engine			
	ground.			
	Connector & terminal			
	(F26) No. 3 — Engine ground:			
2	CHECK HARNESS BETWEEN GENERATOR	Is the resistance less than 1	Repair the poor	Repair the open
	AND ECM CONNECTOR.	Ω?	contact of connec-	circuit of harness
	Measure the resistance of harness between		tor.	between ECM and
	ECM and generator.			generator connec-
	Connector & terminal			tor.
	(B136) No. 10 — (F26) No. 3:			NOTE:
				In this case, repair
				the following item:
				 Open circuit of
				harness between
				ECM and genera-
				tor connector.
				 Poor contact in
				coupling connector
<u> </u>		1		seaping semiloter