Engine (DIAGNOSTICS)

20. Diagnostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles SUBBLE SUB

A: DTC P0031 — FRONT OXYGEN (A/F) SENSOR HEATER CIRCUIT LOW INPUT — SOUBCREFES

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P1132 and P0141 at the same time?	Go to step 2.	Go to step 5.
2	CHECK POWER SUPPLY TO FRONT OXY- GEN (A/F) SENSOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from front oxygen (A/F) sensor. 3) Turn ignition switch to ON. 4) Measure voltage between front oxygen (A/F) sensor connector and engine ground. <i>Connector & terminal</i> (B18) No. 2 (+) — Engine ground (-):	Is the voltage more than 10 V?	Go to step 3.	Repair power sup- ply line. NOTE: In this case, repair the follow- ing: • Open circuit in harness between main relay and front oxygen (A/F) sensor connector • Poor contact in front oxygen (A/F) sensor connector • Poor contact in main relay con- nector
3	CHECK GROUND CIRCUIT OF ECM. Measure resistance of harness between ECM connector and chassis ground. Connector & terminal (B134) No. 35 — Chassis ground:	Is the resistance less than 5 Ω?	Go to step 4.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and engine ground terminal • Poor contact in ECM connector Poor contact in coupling connec- tor (B22)
4	CHECK GROUND CIRCUIT OF ECM. 1) Measure resistance of harness between ECM connector and chassis ground. Connector & terminal (B134) No. 34 — Chassis ground:	Is there resistance less than 5 Ω?	Go to step 5 .	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and engine ground terminal • Poor contact in ECM connector Poor contact in coupling connec- tor (B22)

No.	Step	Check	Yes	No
No. 5	StepCHECK CURRENT DATA.1) Start engine2) Read data of front oxygen (A/F) sensor heater current using Subaru Select Monitor or OBD-II general scan tool. NOTE:• Subaru Select Monitor 	Check Is the value more than 0.2 A? Is the voltage less than 1.0	Yes Repair poor con- tact in connector. NOTE: In this case, repair the follow- ing: • Poor contact in front oxygen (A/F) sensor connector • Poor contact in ECM connector Go to step 8.	No Go to step 6. Go to step 7.
	 Start and idle the engine. Measure voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 22 (+) — Chassis ground (-): 	V?		
7	CHECK OUTPUT SIGNAL FROM ECM. Measure voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 22 (+) — Chassis ground (-):	Does the voltage change less than 1.0 V by shaking harness and connector of ECM while monitoring the value with voltage meter?	Repair poor con- tact in ECM con- nector.	Go to step 8.
8	CHECK OUTPUT SIGNAL FROM ECM. Measure voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 23 (+) — Chassis ground (-):	Is the voltage less than 1.0 V?	Go to step 10.	Go to step 9.
9	CHECK OUTPUT SIGNAL FROM ECM. Measure voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 23 (+) — Chassis ground (-):	Does the voltage change less than 1.0 V by shaking harness and connector of ECM while monitoring the value with voltage meter?	Repair poor con- tact in ECM con- nector.	Go to step 10.
10	CHECK FRONT OXYGEN (A/F) SENSOR. 1) Turn ignition switch to OFF. 2) Measure resistance between front oxygen (A/F) sensor connector terminals. <i>Terminals</i> <i>No. 2 — No. 5:</i>	Is the resistance less than 10 Ω?	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open or ground short circuit in harness between front oxygen (A/F) sensor and ECM connector • Poor contact in front oxygen (A/F) sensor connector • Poor contact in ECM connector	Replace front oxy- gen (A/F) sensor. <ref. to<br="">EC(H4)-63 Front Oxygen (A/F) Sensor.></ref.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

B: DTC P0032 — FRONT OXYGEN (A/F) SENSOR HEATER CIRCUIT HIGH INPUT — SOUBCATER

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	 CHECK OUTPUT SIGNAL FROM ECM. 1) Turn ignition switch to ON. 2) Measure voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 23 (+) — Chassis ground (-): 	Is the voltage more than 8 V?	Go to step 3.	Go to step 2 .
2	CHECK OUTPUT SIGNAL FROM ECM. Measure voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 22 (+) — Chassis ground (-):	Is the voltage more than 8 V?	Go to step 3.	Go to step 4.
3	CHECK FRONT OXYGEN (A/F) SENSOR HEATER CURRENT. 1) Turn ignition switch to OFF. 2) Repair battery short circuit in harness between ECM and front oxygen (A/F) sensor connector. 3) Turn ignition switch to ON. 4) Read data of front oxygen (A/F) sensor heater current using Subaru Select Monitor or the OBD-II general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""> • OBD-II general scan tool For detailed operation procedure, refer to the OBD-II general scan tool For detailed operation procedure, refer to the OBD-II general scan tool</ref.>	Is the value more than 2.3 A?	Replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>	END
4	CHECK OUTPUT SIGNAL FROM ECM. Measure voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 23 (+) — Chassis ground (-):	Does the voltage change more than 8 V by shaking harness and connector of ECM while monitoring the value with voltage meter?	Repair battery short circuit in harness between ECM and front oxygen (A/F) sen- sor connector.	Go to step 5.
5	CHECK OUTPUT SIGNAL FROM ECM. Measure voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 22 (+) — Chassis ground (-):	Does the voltage change more than 8 V by shaking harness and connector of ECM while monitoring the value with voltage meter?	Repair battery short circuit in harness between ECM and front oxygen (A/F) sen- sor connector.	END

Engine (DIAGNOSTICS)

C: DTC P0037 — REAR OXYGEN SENSOR HEATER CIRCUIT MALFUNCTION

S008602F85

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK GROUND CIRCUIT OF ECM.	Is the resistance less than	Go to step 3.	Go to step 2.
	1) Turn ignition switch to OFF.	5 Ω?		
	2) Disconnect connector from ECM.			
	3) Measure resistance of harness between			
	ECM connector and chassis ground.			
	Connector & terminal			
	(B134) No. 35 — Chassis ground:			
2	CHECK GROUND CIRCUIT OF ECM.	Is the resistance less than	Go to step 3.	Repair harness
-	1) Repair harness and connector.	5Ω ?		and connector.
	NOTE:			NOTE:
	In this case, repair the following:			In this case
	Open circuit in barness between ECM and			repair the follow-
	engine ground terminal			ing.
	Poor contact in ECM connector			• Open circuit in
	Poor contact in coupling connector (P22)			
	Poor contact in coupling connector (B22) Maggure registered of hermony between			ECM and anging
	2) Measure resistance of namess between			
				ground terminal
	Connector & terminal			Poor contact in
	(B134) No. 34 — Chassis ground:			ECM connector
				Poor contact in
				coupling connec-
				tor (B22)
3	CHECK CURRENT DATA.	Is the value more than 0.2	Repair connector.	Go to step 4.
	1) Start engine.	A?	NOTE:	
	2) Read data of rear oxygen sensor heater		In this case,	
	current using Subaru Select Monitor or OBD-II		repair the follow-	
	general scan tool.		ing:	
	NOTE:		Poor contact in	
	 Subaru Select Monitor 		rear oxygen sen-	
	For detailed operation procedure, refer to the		sor connector	
	"READ CURRENT DATA FOR ENGINE".		 Poor contact in 	
	<ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.>		rear oxvgen sen-	
	OBD-II scan tool		sor connecting	
	For detailed operation procedures, refer to the		harness connector	
	OBD-II General Scan Tool Instruction Manual		Poor contact in	
			FCM connector	
4		In the voltage lose than 1.0	Co to oton 7	Co to otop E
4	CHECK OUTPUT SIGNAL FROM ECM.	Is the voltage less than 1.0	GO IO SIEP 7.	Go to step 5 .
	1) Start and Idle the engine.	V?		
	2) Measure voltage between ECIVI connector			
	and chassis ground.			
	Connector & terminal			
	(B134) No. 21 (+) — Chassis ground			
<u> </u>	(-):			
5	CHECK OUTPUT SIGNAL FROM ECM.	Does the voltage change	Repair poor con-	Go to step 6.
	Measure voltage between ECM connector	less than 1.0 V by shaking	tact in ECM con-	
	and chassis ground.	harness and connector of	nector.	
	Connector & terminal	ECM while monitoring the		
	(B134) No. 21 (+) — Chassis ground	value with voltage meter?		
	(–):			
6	CHECK OUTPUT SIGNAL FROM ECM.	Is the voltage less than 1.0	Replace ECM.	Repair battery
	1) Disconnect connector from rear oxygen	V?	<ref. th="" to<=""><th>short circuit in</th></ref.>	short circuit in
	sensor.		FU(H4)-67 Enaine	harness between
	2) Measure voltage between ECM connector		Control Module.>	ECM and rear
	and chassis ground.			oxygen sensor
	Connector & terminal			connector. After
	(B134) No. 21 (+) — Chassis around			repair, replace
	(_):			FCM. <ref th="" to<=""></ref>
				FU(H4)-67 Engine
				Control Module.>
				FU(H4)-67 Engine Control Module.>

No.	Step	Check	Yes	No
7	CHECK POWER SUPPLY TO REAR OXY- GEN SENSOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from rear oxygen sensor. 3) Turn ignition switch to ON. 4) Measure voltage between rear oxygen sen- sor connector and engine ground or chassis ground. Connector & terminal (T6) No. 2 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 8.	Repair power sup- ply line. NOTE: In this case, repair the follow- ing: • Open circuit in harness between main relay and rear oxygen sen- sor connector • Poor contact in rear oxygen sen- sor connector • Poor contact in coupling connec- tor (T5)
8	CHECK REAR OXYGEN SENSOR. 1) Turn ignition switch to OFF. 2) Measure resistance between rear oxygen sensor connector terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance less than $30 \ \Omega?$	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between rear oxygen sen- sor and ECM con- nector • Poor contact in rear oxygen sen- sor connector • Poor contact in ECM connector • Poor contact in coupling connec- tor (T5)	Replace rear oxy- gen sensor. <ref. to FU(H4)-65 Rear Oxygen Sensor.></ref.

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

D: DTC P0038 — REAR OXYGEN SENSOR HEATER CIRCUIT HIGH INPUT —

S008602F86

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK INPUT SIGNAL FOR ECM. Measure voltage between ECM connector and chassis ground. Connector & terminal (B134) No. 21 (+) — Chassis ground	Is the voltage more than 8 V?	Go to step 2.	Go to step 3.
	(-):			

No.	Step	Check	Yes	No
2	 CHECK CURRENT DATA. 1) Turn ignition switch to OFF. 2) Repair battery short circuit in harness between ECM and rear oxygen sensor connector. 3) Turn ignition switch to ON. 4) Read data of rear oxygen sensor heater current using Subaru Select Monitor or the OBD-II general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.> OBD-II general scan tool For detailed operation procedure, refer to the OBD-II general scan tool 	Is the value more than 7 A?	Replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>	END
3	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	END

Engine (DIAGNOSTICS)

E: DTC P0065 — AIR ASSIST INJECTOR SOLENOID VALVE MALFUNCTION

S008602F87

- DTC DETECTING CONDITION:
 - Immediately after fault occurrence
- TROUBLE SYMPTOM:
 - Erroneous idling
 - Engine stalls.

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Is there any other DTC on display?	Inspect the rel- evant DTC using "19. List of Diag- nostic Trouble Code (DTC) for AT Vehicles". <ref. en(h4)-<br="" to="">301 List of Diag- nostic Trouble Code (DTC) for AT Vehicles.></ref.>	Go to step 2.
2	CHECK AIR ASSIST INJECTOR SOLENOID VALVE OPERATION. 1) Turn ignition switch to OFF. 2) Connect test mode connector at the lower portion of instrument panel (on the driver's side), to the side of the center console box. 3) Turn ignition switch to ON. 4) Operate air assist injector solenoid valve. NOTE: Air assist injector solenoid valve operation can also be executed using Subaru Select Monitor. For the procedure, refer to the "Com- pulsory Valve Operation Check Mode". <ref. to EN(H4)-64 Compulsory Valve Operation Check Mode.></ref. 	Does air assist injector solenoid valve operating sound?	Go to step 3.	Replace air assist injector solenoid valve. <ref. to<br="">FU(H4)-55 Air Assist Injector Solenoid Valve.></ref.>
3	CHECK AIR BY-PASS HOSES. Use your mouth to blow through air by-pass hose to make sure that there is a smooth air flow (no clogging).	Is air by-pass hose dam- aged?	Repair or replace air by-pass hoses.	Go to step 4.
4	 CHECK FUEL INJECTOR. 1) Turn ignition switch to OFF. 2) Remove fuel injector. <ref. fu(h4)-56<br="" to="">REMOVAL, Fuel Injector.></ref.> 3) Check for clogged fuel injectors. 	Is fuel injector clogged?	Replace fuel injector. <ref. to<br="">FU(H4)-60 INSTALLATION, Fuel Injector.></ref.>	Replace air assist injector solenoid valve. <ref. to<br="">FU(H4)-55 Air Assist Injector Solenoid Valve.></ref.>

Engine (DIAGNOSTICS)

F: DTC P0066 — AIR ASSIST INJECTOR SOLENOID VALVE CIRCUIT LOW INPUT — SOUGARE

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

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK OUTPUT SIGNAL FROM ECM. 1) Turn ignition switch to ON. 2) Measure voltage between ECM and chas- sis ground. Connector & terminal (B134) No. 24 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Repair poor con- tact in ECM con- nector.	Go to step 2.
2	CHECK POWER SUPPLY TO AIR ASSIST INJECTOR SOLENOID VALVE. 1) Turn ignition switch to OFF. 2) Disconnect connector from air assist injec- tor solenoid valve. 3) Turn ignition switch to ON. 4) Measure voltage between air assist injector solenoid valve and engine ground. Connector & terminal (E42) No. 2 (+) — Engine ground (-):	Is the voltage more than 10 V?	Go to step 3.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between air assist injector solenoid valve and main relay connector • Poor contact in coupling connec- tor (B22)
3	CHECK HARNESS BETWEEN ECM AND AIR ASSIST INJECTOR SOLENOID VALVE CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from ECM. 3) Measure resistance of harness between ECM and air assist injector solenoid valve connector. Connector & terminal (B134) No. 24 — (E42) No. 1:	Is the resistance less than 1 Ω?	Go to step 4.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and air assist injector solenoid valve connector • Poor contact in coupling connec- tor (B22)
4	CHECK HARNESS BETWEEN ECM AND AIR ASSIST INJECTOR SOLENOID VALVE CONNECTOR. Measure resistance of harness between ECM and chassis ground. Connector & terminal (B134) No. 24 — Chassis ground:	Is the resistance less than 10 Ω?	Repair ground short circuit in harness between ECM and air assist injector solenoid valve connector.	Go to step 5.
5	CHECK POOR CONTACT. Check poor contact in ECM and air assist injector solenoid valve connectors.	Is there poor contact in ECM and air assist injector solenoid valve connectors?	Repair poor con- tact in ECM and air assist injector solenoid valve connectors.	Replace air assist injector solenoid valve. <ref. to<br="">FU(H4)-55 Air Assist Injector Solenoid Valve.></ref.>

Engine (DIAGNOSTICS)

G: DTC P0067 — AIR ASSIST INJECTOR SOLENOID VALVE CIRCUIT HIGH INPUT — SOUBCEFES

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

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK OUTPUT SIGNAL FROM ECM. 1) Turn ignition switch to ON. 2) Measure voltage between ECM and chas- sis ground. Connector & terminal (B134) No. 24 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Go to step 3.
2	 CHECK OUTPUT SIGNAL FROM ECM. 1) Turn ignition switch to OFF. 2) Disconnect connector from air assist injector solenoid valve. 3) Turn ignition switch to ON. 4) Measure voltage between ECM and chassis ground. Connector & terminal (B134) No. 24 (+) — Chassis ground (-): 	Is the voltage more than 10 V?	Repair battery short circuit in harness between ECM and air assist injector solenoid valve connector. After repair, replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>	Replace air assist injector solenoid valve <ref. to<br="">FU(H4)-55 Air Assist Injector Solenoid Valve.> and ECM <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.></ref.>
3	CHECK OUTPUT SIGNAL FROM ECM. Measure voltage between ECM and chassis ground. Connector & terminal (B134) No. 24 (+) — Chassis ground (-):	Does the voltage change more than 10 V by shaking harness and connector of ECM while monitoring the value with voltage meter?	Repair battery short circuit in harness between ECM and air assist injector solenoid valve connector. After repair, replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>	Contact with SOA service. NOTE: Insepction by DTM is required, because probable cause is deterio- ration of multiple parts.

Engine (DIAGNOSTICS)

H: DTC P0106 — PRESSURE SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM (LOW INPUT) — 500802790

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY. NOTE: In this case, it is not necessary to inspect DTC P0106.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0107, P0108 or P1112?	Inspect DTC P0107, P0108 or P1112 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.></ref.>	Go to step 2 .
2	CHECK AIR INTAKE SYSTEM.	Are there holes, loose bolts or disconnection of hose on air intake system?	Repair air intake system.	Go to step 3.
3	CHECK PRESSURE 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 the selector lever in "N" or "P" position. 3) Turn A/C switch to OFF. 4) Turn all accessory switches to OFF. 5) Read data of intake manifold pressure sen- sor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""> • OBD-II general scan tool For detailed operation procedure, refer to the OBD-II general scan tool For detailed operation procedure, refer to the OBD-II general Scan Tool Instruction Manual. Specification: • Intake manifold absolute pressure Ignition ON 73.3 — 106.6 kPa (550 — 800 mmHg, 21.65 — 31.50 inHg) Idling 20.0 — 46.7 kPa (150 — 350 mmHg, 5.91 — 13.78 inHg)</ref.>	Is the value within the specifications?	Go to step 4.	Replace intake air temperature sen- sor and pressure sensor. <ref. to<br="">FU(H4)-51 Intake Air Temperature and Pressure Sensor.></ref.>
4	 CHECK THROTTLE POSITION. Read data of throttle position signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.> OBD-II general scan tool For detailed operation procedure, refer to the OBD-II general scan tool 	Is throttle positioning ratio equal to or less than 5% when throttle is fully closed?	Go to step 5 .	Adjust or replace throttle position sensor. <ref. to<br="">FU(H4)-45 Throttle Position Sensor.></ref.>

No.	Step	Check	Yes	No
5	CHECK THROTTLE POSITION.	Is throttle positioning ratio equal to or more than 85% when throttle is fully open?	Replace intake air temperature and pressure sensor. <ref. to<br="">FU(H4)-51 Intake Air Temperature and Pressure Sensor.></ref.>	Replace throttle position sensor. <ref. to<br="">FU(H4)-45 Throttle Position Sensor.></ref.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

I: DTC P0107 — PRESSURE SENSOR CIRCUIT LOW INPUT — SOUBCOLB 12

• DTC DETECTING CONDITION:

• Immediately at fault recognition

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



Engine (DIAGNOSTICS)

No.	Step	Check	Yes	No
1	CHECK CURRENT DATA	Is the value less than 13.3	Go to step 3	Go to step 2
·	1) Start engine.	kPa (100 mmHg, 3.94		
	2) Read the data of intake manifold absolute	inHg)?		
	pressure signal using Subaru Select Monitor			
	or OBD-II general scan tool.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to the			
	READ CORRENT DATA FOR ENGINE .			
	OBD-II general scan tool			
	For detailed operation procedures, refer to the			
	OBD-II General Scan Tool Instruction Manual.			
2	CHECK POOR CONTACT.	Is there poor contact in	Repair poor con-	Even if MIL lights
	Check poor contact in ECM and pressure	ECM or pressure sensor	tact in ECM or	up, the circuit has
	sensor connector.	connector?	pressure sensor	returned to a nor-
			connector.	mal condition at
				this time.
3	CHECK INPUT SIGNAL FOR ECM.	Is the voltage more than	Go to step 5.	Go to step 4.
	and chassis ground	4.5 V ?		
	Connector & terminal			
	(B136) No. 15 (+) — Chassis ground			
	(-):			
4	CHECK INPUT SIGNAL FOR ECM.	Does the voltage change	Repair poor con-	Contact with SOA
	Measure voltage between ECM connector	more than 4.5 V by shaking	tact in ECM con-	service.
	and chassis ground.	harness and connector of	nector.	NOTE:
	Connector & terminal	ECM while monitoring the		Inspection by
	(B130) No. 15 (+) — Chassis ground (_):	value with voltage meter?		because probable
	(-).			cause is deterio-
				ration of multiple
				parts.
5	CHECK INPUT SIGNAL FOR ECM.	Is the voltage less than 0.2	Go to step 7.	Go to step 6.
	Measure voltage between ECM and chassis	V?		
	ground.			
	(B126) No. 5 (+) - Chassis around (-):			
6	CHECK INPLIT SIGNAL FOR FCM (USING	Does the value change	Repair poor con-	Go to step 7
ľ	SUBARU SELECT MONITOR)	more than 13.3 kPa (100	tact in ECM con-	
	Read data of atmospheric absolute pressure	mmHg, 3.94 inHg) by shak-	nector.	
	signal using Subaru Select Monitor.	ing harness and connector		
	NOTE:	of ECM while monitoring		
	Subaru Select Monitor	the value with Subaru		
	For detailed operation procedure, refer to the	Select Monitor?		
	READ CORRENT DATA FOR ENGINE .			
7	CHECK HARNESS BETWEEN ECM AND	Is the voltage more than	Go to step 8	Repair open cir-
ľ	INTAKE AIR TEMPERATURE AND PRES-	4.5 V?		cuit in harness
	SURE SENSOR CONNECTOR.			between ECM
	1) Turn ignition switch to OFF.			and intake air
	2) Disconnect connector from intake air tem-			temperature and
	perature and pressure sensor.			pressure sensor
	3) rurn ignition switch to UN.			connector.
	berature sensor and pressure sensor copposition			
	tor and engine ground.			
	Connector & terminal			
	(E21) No. 3 (+) — Engine ground (–):			

EN(H4)-333

No.	Step	Check	Yes	No
8	 CHECK HARNESS BETWEEN ECM AND INTAKE AIR TEMPERATURE AND PRES- SURE SENSOR CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from ECM. 3) Measure resistance of harness between ECM and intake air temperature and pressure sensor connector. Connector & terminal (B136) No. 16 — (E21) No. 1: 	Is the resistance less than 1 Ω?	Go to step 9 .	Repair open cir- cuit in harness between ECM and intake air temperature and pressure sensor connector.
9	CHECK HARNESS BETWEEN ECM AND INTAKE AIR TEMPERATURE AND PRES- SURE SENSOR CONNECTOR. Measure resistance of harness between intake air temperature and pressure sensor connector and engine ground. Connector & terminal (E21) No. 4 — Engine ground:	Is the resistance more than 500 kΩ?	Go to step 10.	Repair ground short circuit in harness between ECM and intake air temperature and pressure sen- sor connector.
10	CHECK POOR CONTACT. Check poor contact in intake manifold pres- sure sensor connector.	Is there poor contact in intake manifold pressure sensor connector?	Repair poor con- tact in intake air temperature and pressure sensor connector.	Replace intake air temperature and pressure sensor. <ref. to<br="">FU(H4)-51 Intake Air Temperature and Pressure Sensor.></ref.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

J: DTC P0108 — PRESSURE SENSOR CIRCUIT HIGH INPUT — SOUBCOLB13

• DTC DETECTING CONDITION:

• Immediately at fault recognition

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



1 CHECK CURRENT DATA. Is the value more than Go to step 10. Go to s	tep 2 .
1) Start engine. 119.5 kPa (896.5 mmHg.	
2) Read the data of intake manifold absolute 35.29 inHg)?	
pressure signal using Subaru Select Monitor	
or OBD-II general scan tool.	
NOTE:	
Subaru Select Monitor	
For detailed operation procedure, refer to the	
"READ CURRENT DATA FOR ENGINE".	
<ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.>	
OBD-II general scan tool	
For detailed operation procedures, refer to the	
OBD-II General Scan Tool Instruction Manual.	
2 CHECK INPUT SIGNAL FOR ECM. Is the voltage more than Go to step 4. Go to step 4.	tep 3 .
Measure voltage between ECM connector 4.5 V?	
and chassis ground.	
Connector & terminal	
(B136) No. 15 (+) — Chassis ground	
3 CHECK INPUT SIGNAL FOR ECM. Does the voltage change Repair poor con- Contact	with SOA
Measure voltage between ECM connector more than 4.5 V by shaking tact in ECM con- service.	
and chassis ground. harness and connector of nector. NOTE:	
Connector & terminal ECIVI while monitoring the Inspection	on by
(B130) No. 15 (+) — Chassis ground Value with Voltage meter?	requirea,
	e probable
	f multiplo
	i multiple
A CHECK INPLIT SIGNAL FOR ECM Is the voltage less than 0.2 Go to step 6 Go to se	ten 5
Measure voltage between FCM connector V2	iep J .
and chassis ground	
Connector & terminal	
(B136) No. 5 (+) — Chassis ground (–):	
5 CHECK INPUT SIGNAL FOR ECM. (USING Does the value change Repair poor con- Go to s	tep 6.
SUBARU SELECT MONITOR.) more than 13.3 kPa (100 tact in ECM con-	1
Read data of atmospheric absolute pressure mmHg, 3.94 inHg) by shak- nector.	
signal using Subaru Select Monitor. ing harness and connector	
NOTE: of ECM while monitoring	
Subaru Select Monitor the value with Subaru	
For detailed operation procedure, refer to the Select Monitor?	
"READ CURRENT DATA FOR ENGINE".	
<pre><ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.></pre>	
6 CHECK HARNESS BETWEEN ECM AND Is the voltage more than Go to step 7. Repair (open cir-
INTAKE AIR TEMPERATURE AND PRES- 4.5 V?	arness
SURE SENSOR CONNECTOR. between	n ECM
1) Turn ignition switch to OFF.	ake air
2) Disconnect connector from intake air tem-	ature and
pressure and pressure sensor.	e sensor
(1) Measure voltage between inteke air tem-	.01.
berature and pressure sensor connector and	
Connector & terminal	
(E21) No. 3 (+) — Engine ground (–):	

No.	Step	Check	Yes	No
7	CHECK HARNESS BETWEEN ECM AND INTAKE AIR TEMPERATURE AND PRES- SURE SENSOR CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from ECM. 3) Measure resistance of harness between ECM and intake air temperature and pressure sensor connector. Connector & terminal (B136) No. 5 — (E21) No. 4:	Is the resistance less than 1 Ω?	Go to step 8.	Repair open cir- cuit in harness between ECM and intake air temperature and pressure sensor connector.
8	CHECK HARNESS BETWEEN ECM AND INTAKE AIR TEMPERATURE AND PRES- SURE SENSOR CONNECTOR. Measure resistance of harness between ECM and intake air temperature and pressure sen- sor connector. Connector & terminal (B136) No. 16 — (E21) No. 1:	Is the resistance less than 1 Ω ?	Go to step 9.	Repair open cir- cuit in harness between ECM and intake air temperature and pressure sensor connector.
9	CHECK POOR CONTACT. Check poor contact in intake air temperature and pressure sensor connector.	Is there poor contact in intake manifold pressure sensor connector?	Repair poor con- tact in intake air temperature and pressure sensor connector.	Replace intake air temperature and pressure sensor. <ref. to<br="">FU(H4)-51 Intake Air Temperature and Pressure Sensor.></ref.>
10	CHECK HARNESS BETWEEN ECM AND INTAKE AIR TEMPERATURE AND PRES- SURE SENSOR CONNECTOR. 1) Turn ignition switch to OFF and Subaru Select Monitor or the OBD-II general scan tool switch to OFF. 2) Disconnect connector from intake air tem- perature and pressure sensor. 3) Turn ignition switch to ON and Subaru Select Monitor or the OBD-II general scan tool switch to ON. 4) Read data of intake manifold absolute pressure signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". < Ref. to EN(H4)-52 Subaru Select Monitor.> • OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool	Is the value more than 119.5 kPa (896.5 mmHg, 35.29 inHg)?	Repair battery short circuit in harness between ECM and intake air temperature and pressure sen- sor connector.	Replace intake air temperature and pressure sensor. <ref. to<br="">FU(H4)-51 Intake Air Temperature and Pressure Sensor.></ref.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

K: DTC P0111 — INTAKE AIR TEMPERATURE SENSOR CIRCUIT RANGE/ PERFORMANCE PROBLEM — 500602814

• DTC DETECTING CONDITION:

Immediately at fault recognition

• TROUBLE SYMPTOM:

- Erroneous idling
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

• WIRING DIAGRAM:



EN(H4)-340

No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0112, P0113, P0117, P0118 or P0125?	Inspect DTC P0112, P0113, P0116, P0117 or P0125 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.> 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 it up completely. 2) Measure engine coolant temperature using Subaru Select Monitor or OBD-II general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""> • OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Is the engine coolant tem- perature between 75°C (167°F) and 95°C (203°F)?	Replace intake air temperature and pressure sensor. <ref. to<br="">FU(H4)-51 Intake Air Temperature and Pressure Sensor.></ref.>	Inspect DTC P0125 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.></ref.>

Engine (DIAGNOSTICS)

L: DTC P0112 — INTAKE AIR TEMPERATURE SENSOR CIRCUIT LOW INPUT

S008602B15

- DTC DETECTING CONDITION:
 - Immediately at fault recognition
- TROUBLE SYMPTOM:
 - Erroneous idling
 - Poor driving performance

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	 CHECK CURRENT DATA. 1) Start engine. 2) Read data of intake air temperature sensor signal using Subaru Select Monitor or the OBD-II general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.> OBD-II general scan tool For detailed operation procedure, refer to the OBD-II general scan tool 	Is the value greater than 120°C (248°F)?	Go to step 2.	Repair poor con- tact. NOTE: In this case, repair the follow- ing: • Poor contact in intake air tem- perature and pressure sensor • Poor contact in ECM • Poor contact in coupling connec- tor (B21) • Poor contact in joint connector (B83)
2	CHECK HARNESS BETWEEN INTAKE AIR TEMPERATURE AND PRESSURE SENSOR AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from intake air tem- perature and pressure sensor. 3) Turn ignition switch to ON. 4) Read data of intake air temperature sensor signal using Subaru Select Monitor or the OBD-II general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""> • OBD-II general scan tool For detailed operation procedure, refer to the OBD-II general scan tool</ref.>	Is the value less than -40°C (-40°F)?	Replace intake air temperature and pressure sensor. <ref. to<br="">FU(H4)-51 Intake Air Temperature and Pressure Sensor.></ref.>	Repair ground short circuit in harness between intake air tem- perature sensor and ECM connec- tor.

Engine (DIAGNOSTICS)

M: DTC P0113 — INTAKE AIR TEMPERATURE SENSOR CIRCUIT HIGH INPUT — SOUBCR2B16

• DTC DETECTING CONDITION:

- Immediately at fault recognition
- TROUBLE SYMPTOM:
 - Erroneous idling
 - Poor driving performance

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
2	CHECK CURRENT DATA. 1) Start engine. 2) Read data of intake air temperature sensor signal using Subaru Select Monitor or the OBD-II general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""> • OBD-II general scan tool For detailed operation procedure, refer to the OBD-II general Scan Tool Instruction Manual. CHECK HARNESS BETWEEN INTAKE AIR TEMPERATURE AND PRESSURE SENSOR AND ECM CONNECTOR</ref.>	Is the value less than -40°C (-40°F)? Is the voltage more than 10 V?	Go to step 2. Repair battery short circuit in barross between	Repair poor con- tact. NOTE: In this case, repair the follow- ing: • Poor contact in intake air tem- perature and pressure sensor • Poor contact in ECM • Poor contact in coupling connec- tor (B21) • Poor contact in joint connector (B83) Go to step 3 .
	 AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from intake air temperature and pressure sensor. 3) Measure voltage between intake air temperature and pressure sensor connector and engine ground. Connector & terminal (E21) No. 2 (+) — Engine ground (-): 		harness between intake air tem- perature and pressure sensor and ECM connec- tor.	
3	CHECK HARNESS BETWEEN INTAKE AIR TEMPERATURE AND PRESSURE SENSOR AND ECM CONNECTOR. 1) Turn ignition switch to ON. 2) Measure voltage between intake air tem- perature and pressure sensor connector and engine ground. Connector & terminal (E21) No. 2 (+) — Engine ground (–):	Is the voltage more than 10 V?	Repair battery short circuit in harness between intake air tem- perature and pressure sensor and ECM connec- tor.	Go to step 4.
No.	Step	Check	Yes	No
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4	CHECK HARNESS BETWEEN INTAKE AIR TEMPERATURE AND PRESSURE SENSOR AND ECM CONNECTOR. Measure voltage between intake air tempera- ture and pressure sensor connector and engine ground. <i>Connector & terminal</i> <i>(E21) No. 2 (+) — Engine ground (–):</i>	Is the voltage more than 3 V?	Go to step 5.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between intake air tem- perature and pressure sensor and ECM connec- tor • Poor contact in intake air tem- perature and pressure sensor • Poor contact in ECM • Poor contact in coupling connec- tor (B21) • Poor contact in joint connector (B83)
5	CHECK HARNESS BETWEEN INTAKE AIR TEMPERATURE AND PRESSURE SENSOR AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Measure resistance of harness between intake air temperature and pressure sensor connector and engine ground. <i>Connector & terminal</i> (E21) No. 1 — Engine ground:	Is the resistance less than 5 Ω?	Replace intake air temperature and pressure sensor. <ref. to<br="">FU(H4)-51 Intake Air Temperature and Pressure Sensor.></ref.>	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between intake air tem- perature and pressure sensor and ECM connec- tor • Poor contact in intake air tem- perature and pressure sensor • Poor contact in ECM • Poor contact in coupling connec- tor (B21) • Poor contact in joint connector (B83)

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

N: DTC P0117 — ENGINE COOLANT TEMPERATURE SENSOR CIRCUIT LOW INPUT — SOUBCREFT

• DTC DETECTING CONDITION:

- Immediately at fault recognition
- TROUBLE SYMPTOM:
 - Hard to start
 - Erroneous idling
 - Poor driving performance

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

• WIRING DIAGRAM:



EN(H4)-348

No.	Step	Check	Yes	No
1	 CHECK CURRENT DATA. 1) Start engine. 2) Read data of engine coolant temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.> OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool 	Is the value greater than 150°C (302°F)?	Go to step 2.	Repair poor con- tact. NOTE: In this case, repair the follow- ing: • Poor contact in engine coolant temperature sen- sor • Poor contact in ECM • Poor contact in coupling connec- tor (B21) • Poor contact in joint connector (B83)
2	CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from engine coolant temperature sensor. 3) Turn ignition switch to ON. 4) Read data of engine coolant temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""> • OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool</ref.>	Is the value less than -40°C (-40°F)?	Replace engine coolant tempera- ture sensor. <ref. to FU(H4)-40 Engine Coolant Temperature Sen- sor.></ref. 	Repair ground short circuit in harness between engine coolant temperature sen- sor and ECM con- nector.

Engine (DIAGNOSTICS)

O: DTC P0118 — ENGINE COOLANT TEMPERATURE SENSOR CIRCUIT HIGH INPUT — 5006602F92

• DTC DETECTING CONDITION:

- Immediately at fault recognition
- TROUBLE SYMPTOM:
 - Hard to start
 - Erroneous idling
 - Poor driving performance

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
2	CHECK CURRENT DATA. 1) Start engine. 2) Read data of engine coolant temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""> • OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general Scan Tool Instruction Manual. CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from engine coolant</ref.>	Is the value less than -40°C (-40°F)? Is the voltage more than 10 V?	Go to step 2. Repair battery short circuit in harness between ECM and engine	Repair poor con- tact. NOTE: In this case, repair the follow- ing: • Poor contact in engine coolant temperature sen- sor • Poor contact in ECM • Poor contact in coupling connec- tor (B21) • Poor contact in joint connector (B83) Go to step 3 .
	 2) Disconnect connector from engine coolant temperature sensor. 3) Measure voltage between engine coolant temperature sensor connector and engine ground. Connector & terminal (E8) No. 1 (+) — Engine ground (-): 		coolant tempera- ture sensor con- nector.	
3	CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR. 1) Turn ignition switch to ON. 2) Measure voltage between engine coolant temperature sensor connector and engine ground. Connector & terminal (E8) No. 1 (+) — Engine ground (-):	Is the voltage more than 10 V?	Repair battery short circuit in harness between ECM and engine coolant tempera- ture sensor con- nector.	Go to step 4.

No.	Step	Check	Yes	No
4	CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR. Measure voltage between engine coolant tem- perature sensor connector and engine ground. Connector & terminal (E8) No. 1 (+) — Engine ground (-):	Is the voltage more than 4 V?	Go to step 5.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and engine coolant tempera- ture sensor con- nector • Poor contact in engine coolant temperature sen- sor connector • Poor contact in ECM connector • Poor contact in ECM connector • Poor contact in coupling connec- tor (B21) • Poor contact in joint connector (B83)
5	CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Measure resistance of harness between engine coolant temperature sensor connector and engine ground. Connector & terminal (E8) No. 2 — Engine ground:	Is the resistance less than 5 Ω ?	Replace engine coolant tempera- ture sensor. <ref. to FU(H4)-40 Engine Coolant Temperature Sen- sor.></ref. 	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and engine coolant tempera- ture sensor con- nector • Poor contact in engine coolant temperature sen- sor connector • Poor contact in ECM connector • Poor contact in ECM connector • Poor contact in coupling connec- tor (B21) • Poor contact in joint connector (B83)

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

P: DTC P0121 — THROTTLE POSITION SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM (HIGH INPUT) — 5008022819

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Erroneous idling
 - Engine stalls.
 - Poor driving performance

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0122 or P0123?	Inspect DTC P0122 or P0123 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.> NOTE: In this case, it is not necessary to inspect DTC P0121.</ref.>	Replace throttle position sensor. <ref. to<br="">FU(H4)-45 Throttle Position Sensor.></ref.>

Engine (DIAGNOSTICS)

Q: DTC P0122 — THROTTLE POSITION SENSOR CIRCUIT LOW INPUT —

S008602B20

• DTC DETECTING CONDITION:

• Immediately at fault recognition

• TROUBLE SYMPTOM:

- Erroneous idling
- Engine stalls.
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

• WIRING DIAGRAM:



EN(H4)-356

No.	Step	Check	Yes	No
1	 CHECK CURRENT DATA. 1) Start engine. 2) Read data of throttle position sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.> OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual. 	Is the value less than 0.1 V?	Go to step 2.	Even if MIL lights up, the circuit has returned to a nor- mal condition at this time. A tem- porary poor con- tact of the con- nector may be the cause. NOTE: In this case, repair the follow- ing: • Poor contact in throttle position sensor connector • Poor contact in ECM connector • Poor contact in coupling connec- tor (B21)
2	CHECK INPUT SIGNAL FOR ECM. Measure voltage between ECM connector and chassis ground while throttle valve is fully closed. Connector & terminal (B136) No. 15 (+) — Chassis ground (-):	Is the voltage more than 4.5 V?	Go to step 4.	Go to step 3.
3	CHECK INPUT SIGNAL FOR ECM. Measure voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 15 (+) — Chassis ground (-):	Does the voltage change more than 4.5 V by shaking harness and connector of ECM while monitoring the value with voltage meter?	Repair poor con- tact in ECM con- nector.	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.
+	Measure voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 17 (+) — Chassis ground (-):	V?	Go to step o .	Go to step 3 .
5	CHECK INPUT SIGNAL FOR ECM. (USING SUBARU SELECT MONITOR.) Measure voltage between ECM connector and chassis ground.	Does the voltage change more than 0.1 V by shaking harness and connector of ECM while monitoring the value with Subaru Select Monitor?	Repair poor con- tact in ECM con- nector.	Go to step 6 .

No.	Step	Check	Yes	No
<u>No.</u>	Step CHECK HARNESS BETWEEN ECM AND THROTTLE POSITION SENSOR CONNEC- TOR. 1) Turn ignition switch to OFF. 2) Disconnect connectors from throttle posi- tion sensor. 3) Turn ignition switch to ON. 4) Measure voltage between throttle position sensor connector and engine ground. <i>Connector & terminal</i> (E13) No. 4 (+) — Engine ground (–):	Check Is the voltage more than 4.5 V?	Yes Go to step 7.	No Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between throttle position sensor and ECM connector • Poor contact in throttle position sensor connector • Poor contact in ECM connector • Poor contact in coupling connec- tor (B21) • Poor contact in joint connector (B83)
7	CHECK HARNESS BETWEEN ECM AND THROTTLE POSITION SENSOR CONNEC- TOR. 1) Turn ignition switch to OFF. 2) Measure resistance of harness between ECM connector and throttle position sensor connector. Connector & terminal (B136) No. 17 — (E13) No. 3:	Is the resistance less than 1 Ω?	Go to step 8.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between throttle position sensor and ECM connector • Poor contact in ECM connector • Poor contact in throttle position sensor connector • Poor contact in throttle position sensor connector • Poor contact in coupling connec- tor (B21)
8	CHECK HARNESS BETWEEN ECM AND THROTTLE POSITION SENSOR CONNEC- TOR. Measure resistance of harness between throttle position sensor connector and engine ground. Connector & terminal (E13) No. 3 — Engine ground:	Is the resistance less than 10 Ω?	Repair ground short circuit in harness between throttle position sensor and ECM connector.	Go to step 9 .
9	CHECK POOR CONTACT. Check poor contact in throttle position sensor connector.	Is there poor contact in throttle position sensor con- nector?	Repair poor con- tact in throttle position sensor connector.	Replace throttle position sensor. <ref. to<br="">FU(H4)-45 Throttle Position Sensor.></ref.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

R: DTC P0123 — THROTTLE POSITION SENSOR CIRCUIT HIGH INPUT — S008602821

• DTC DETECTING CONDITION:

• Immediately at fault recognition

• TROUBLE SYMPTOM:

- Erroneous idling
- Engine stalls.
- Poor driving performance

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK CURRENT DATA. 1) Start engine. 2) Read data of throttle position sensor signal using Subaru Select Monitor or OBD-II gen- eral scan tool. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""> • OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Is the value more than 4.9 V?	Go to step 2.	Even if MIL lights up, the circuit has returned to a nor- mal condition at this time. A tem- porary poor con- tact of the con- nector may be the cause. NOTE: In this case, repair the follow- ing: • Poor contact in throttle position sensor connector • Poor contact in ECM connector • Poor contact in coupling connec- tor (B21)
2	CHECK HARNESS BETWEEN THROTTLE POSITION SENSOR AND ECM CONNEC- TOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from throttle position sensor. 3) Measure resistance of harness between throttle position sensor connector and engine ground. Connector & terminal (E13) No. 2 — Engine ground:	Is the resistance less than 5 Ω?	Go to step 3.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between throttle position sensor and ECM connector • Poor contact in coupling connec- tor (B21) • Poor contact in joint connector (B83)
3	 CHECK HARNESS BETWEEN THROTTLE POSITION SENSOR AND ECM CONNECTOR. 1) Turn ignition switch to ON. 2) Measure voltage between throttle position sensor connector and engine ground. Connector & terminal (E13) No. 3 (+) — Engine ground (-): 	Is the voltage more than 4.9 V?	Repair battery short circuit in harness between throttle position sensor and ECM connector. After repair, replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>	Replace throttle position sensor. <ref. to<br="">FU(H4)-45 Throttle Position Sensor.></ref.>

Engine (DIAGNOSTICS)

S: DTC P0125 — INSUFFICIENT COOLANT TEMPERATURE FOR CLOSED LOOP FUEL CONTROL — 5008602822

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Engine would not return to idling.

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0117 or P0118?	Inspect DTC P0116 or P0117 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.> NOTE: In this case, it is not necessary to inspect DTC P0125.</ref.>	Go to step 2.
2	CHECK THERMOSTAT.	Does thermostat remain opened?	Replace thermo- stat. <ref. to<br="">EN(H4)-13 Ther- mostat.></ref.>	Replace engine coolant tempera- ture sensor. <ref. to EN(H4)-40 Engine Coolant Temperature Sen- sor.></ref.

Engine (DIAGNOSTICS)

T: DTC P0128 — THERMOSTAT MALFUNCTION — SOUBCOZF93

• DTC DETECTING CONDITION:

- Immediately at fault recognition
- TROUBLE SYMPTOM:
 - Thermostat remains open.

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

No.	Step	Check	Yes	No
1	CHECK VEHICLE CONDITION.	Has engine operated at idle or has vehicle been driven with part of engine sub- merged under water?	In this case, it is not necessary to inspect DTC P1490.	Go to step 2 .
2	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0125, P0301, P0302, P0303 and P0304 at same time?	Go to step 3.	Inspect DTC P0125, P0301, P0302, P0303 and P0304 using "19. List of Diag- nostic Trouble Code (DTC) for AT Vehicles". <ref. en(h4)-<br="" to="">301 List of Diag- nostic Trouble Code (DTC) for AT Vehicles.></ref.>
3	CHECK ENGINE COOLANT.	Are coolant level and mix- ture ratio of cooling water to anti-freeze solution cor- rect?	Go to step 4.	Replace engine coolant. <ref. to<br="">CO(H4)-6 REPLACEMENT, Engine Coolant.></ref.>
4	CHECK RADIATOR FAN.1) Start the engine.2) Check radiator fan operation.	Does radiator fan continu- ously rotate for more than 3 minutes during idling?	Repair radiator fan circuit. <ref. to CO(H4)-20 Radiator Main Fan and Fan Motor.> and <ref. to CO(H4)-23 Radiator Sub Fan and Fan Motor.></ref. </ref. 	Replace thermo- stat. <ref. to<br="">CO(H4)-13 Ther- mostat.></ref.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

U: DTC P0130 — FRONT OXYGEN (A/F) SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM (LEAN) — 5008022644

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No	Sten	Check	Vos	No
1	CHECK ANY OTHER DIC ON DISPLAY.	Does the Subaru Select		Go to step 2.
		Monitor or OBD-II general	PUISI, PUISZ,	
			PII32 OF PII33	
		P0131, P0132, P1132 01	Diagnastic	
		P1133?	Trauble Code	
			(DTC) IOLAT	
			of Diagnostic	
			Trouble Code	
			(DTC) for AT	
			Vehicles.>	
2	CHECK FRONT OXYGEN (A/F) SENSOR	Is the value equal to or	Go to step 3.	Go to step 4.
- 	DATA.	more than 0.85 and equal		
	1) Start engine.	to less than 1.15 in idling?		
	2) While observing the Subaru Select Monitor			
	or OBD-II general scan tool screen, warm-up			
	the engine until coolant temperature is above			
	70°C (160°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 Subaru Select Monitor or OBD-II			
	general scan tool.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to the			
	"READ CURRENT DATA FOR ENGINE".			
	CRET. to EIN(H4)-52 Subaru Select Monitor.>			
	OBD-II general scall tool For detailed operation precedures, refer to the			
	OBD-II General Scan Tool Instruction Manual			
3	CHECK EPONT OXYGEN (A/E) SENSOR	Is the value more than 1.1	Go to step 6	Go to step 4
ľ		for a moment?		
	Race engine at speeds from idling to 5.000			
	rom for a total of 5 cycles.			
	NOTE:			
	To increase engine speed to 5,000 rpm,			
	slowly depress accelerator pedal, taking			
	approximately 5 seconds, and quickly release			
	accelerator pedal to decrease engine speed.			
4	CHECK HARNESS BETWEEN ECM AND	Is the resistance less than	Go to step 5.	Repair open cir-
	FRONT OXYGEN (A/F) SENSOR.	5 Ω?		cuit between ECM
	1) Turn ignition switch to OFF.			and front oxygen
	2) Disconnect connector from ECM and front			(A/F) sensor.
	oxygen (A/F) sensor connector.			
	3) Measure resistance between ECM and			
	front oxygen (A/F) sensor.			
	(B130) NO. 0 — $(B18)$ NO. 1: (B126) NO. 7 (B19) NO. 6:			
	(B130) NO. 1 (B16) NO. 0: (B126) NO. 10 (B19) NO. 2:			
	(B136) No 20 - (B18) No 4			
	(DISU) NU. 20 - (DIO) NU. 4:		1	1

No.	Step	Check	Yes	No
5	CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR. Measure resistance between ECM and chas- sis ground. Connector & terminals (B136) No. 6 — Chassis ground: (B136) No. 7 — Chassis ground: (B136) No. 19 — Chassis ground: (B136) No. 20 — Chassis ground:	Is the resistance more than 1 MΩ?	Go to step 6 .	Repair ground short circuit between ECM and front oxygen (A/F) sensor.
6	CHECK EXHAUST SYSTEM. Check exhaust system parts. NOTE: Check the following items. • Loose installation of portions • Damage (crack, hole etc.) of parts • Looseness of front oxygen (A/F) sensor • Looseness and ill fitting of parts between front oxygen (A/F) sensor and rear oxygen sensor	Is there a fault in exhaust system?	Repair or replace faulty parts.	Replace front oxy- gen (A/F) sensor. <ref. to<br="">FU(H4)-63 Front Oxygen (A/F) Sensor.></ref.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

V: DTC P0131 — FRONT OXYGEN (A/F) SENSOR CIRCUIT MALFUNCTION (OPEN CIRCUIT) — 500802245

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC- TOR. 1) Turn ignition switch to OFF. 2) Disconnect connectors from ECM and front oxygen (A/F) sensor connector. 3) Measure resistance of harness between ECM and front oxygen (A/F) sensor connec- tor. Connector & terminal (B136) No. 6 — (E18) No. 1: (B136) No. 7 — (B18) No. 6: (B136) No. 19 — (B18) No. 3: (B136) No. 20 — (B18) No. 4:	Is the resistance less than 1 Ω?	Go to step 2.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and front oxygen (A/F) sen- sor connector • Poor contact in front oxygen (A/F) sensor connector • Poor contact in ECM connector
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 connector?	Repair poor con- tact in front oxy- gen (A/F) sensor connector.	Replace front oxy- gen (A/F) sensor. <ref. to<br="">FU(H4)-63 Front Oxygen (A/F) Sensor.></ref.>

Engine (DIAGNOSTICS)

W: DTC P0132 — FRONT OXYGEN (A/F) SENSOR CIRCUIT MALFUNCTION (SHORT CIRCUIT) — 5008002646

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR CONNEC- TOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from ECM. 3) Measure resistance of harness between ECM connector and chassis ground. Connector & terminal (B136) No. 6 — Chassis ground: (B136) No. 7 — Chassis ground: (B136) No. 19 — Chassis ground: (B136) No. 20 — Chassis ground:	Is the resistance more than 10 Ω?	Replace front oxy- gen (A/F) sensor. <ref. to<br="">FU(H4)-63 Front Oxygen (A/F) Sensor.></ref.>	Repair ground short circuit in harness between ECM and front oxygen (A/F) sen- sor connector.

Engine (DIAGNOSTICS)

X: DTC P0133 — FRONT OXYGEN (A/F) SENSOR CIRCUIT SLOW

RESPONSE — SOOB602 B26

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0131, P0132, P1132 or P1133?	Inspect DTC P0131, P0132, P1132 or P1133 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.> 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 	Is there a fault in exhaust system?	Repair exhaust system.	Replace front oxy- gen (A/F) sensor. <ref. to<br="">FU(H4)-63 Front Oxygen (A/F) Sensor.></ref.>

Engine (DIAGNOSTICS)

Y: DTC P0136 — REAR OXYGEN SENSOR CIRCUIT MALFUNCTION — SOURCE SUBJECT SENSOR CIRCUIT MALFUNCTION — SOURCE SUBJECT SENSOR SENSOR

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0131 or P0132?	Go to step 2 .	Go to step 3.

No.	Step	Check	Yes	No
2	CHECK FAILURE CAUSE OF P0131 or	Is the failure cause of	Check fuel sys-	Go to step 3.
	P0132.	P0131 or P0132 in the fuel	tem.	
	Inspect DTC P0131 or P0132 using "19. List	system?	NOTE:	
	of Diagnostic Trouble Code (DTC) for AT		In this case, it is	
	Vehicles". <ref. diag-<="" en(h4)-301="" list="" of="" th="" to=""><th></th><th>not necessary to</th><th></th></ref.>		not necessary to	
	nostic Trouble Code (DTC) for AT Vehicles.>		inspect DTC	
			P0136.	
3	CHECK REAR OXYGEN SENSOR DATA.	Does the value fluctuate?	Go to step 7.	Go to step 4.
	temperature is above 70°C (158°F) and keep			
	the engine speed at 2,000 rpm to 3,000 rpm			
	for two minutes.			
	2) Read data of rear oxygen sensor signal			
	using Subaru Select Monitor or OBD-II gen-			
	eral scan tool.			
	NOTE:			
	Subaru Select Monitor			
	PLAY FOR ENGINE" < Ref to EN(H4)-52			
	Subaru Select Monitor.>			
	OBD-II general scan tool			
	For detailed operation procedures, refer to the			
	OBD-II General Scan Tool Instruction Manual.			
4	CHECK REAR OXYGEN SENSOR DATA.	Is the value fixed between	Go to step 5.	Replace rear oxy-
	Read data of rear oxygen sensor signal using	0.2 and 0.4 V?		gen sensor. <ref.< td=""></ref.<>
	Subaru Select Monitor or OBD-II General			to FU(H4)-65
	Scan Tool.			Sensor >
5	CHECK HARNESS BETWEEN ECM AND	Is the resistance more than	Repair open cir-	Go to step 6.
	REAR OXYGEN SENSOR CONNECTOR.	3 Ω?	cuit in harness	
	1) Turn ignition switch to OFF.		between ECM	
	2) Disconnect connectors from ECM and rear		and rear oxygen	
	oxygen sensor.		sensor connector.	
	3) Measure resistance of harness between			
	ECM and rear oxygen sensor connector.			
	(B136) No 16 - (T6) No 3			
6	CHECK HARNESS BETWEEN REAR OXY-	Is the voltage more than	Replace rear oxy-	Repair harness
ľ	GEN SENSOR AND ECM CONNECTOR.	0.2 V?	aen sensor. <ref.< td=""><td>and connector.</td></ref.<>	and connector.
	1) Turn ignition switch to OFF.		to FU(H4)-65	NOTE:
	2) Disconnect connector from rear oxygen		Rear Oxygen	In this case,
	sensor.		Sensor.>	repair the follow-
	3) Turn ignition switch to ON.			ing:
	4) Measure voltage between rear oxygen sen-			Open circuit in
	chassis around			
	Connector & terminal			sor and ECM con-
	(T6) No. 4 (+) — Engine ground (–):			nector
				Poor contact in
				rear oxygen sen-
				sor connector
				Poor contact in
I				ECM connector

No.	Step	Check	Yes	No
7	CHECK EXHAUST SYSTEM. Check exhaust system parts. NOTE: Check the following items. • Loose installation of portions • Damage (crack, hole etc.) of parts • Looseness and ill fitting of parts between front oxygen (A/F) sensor and rear oxygen sensor	Is there a fault in exhaust system?	Repair or replace faulty parts.	Replace rear oxy- gen sensor. <ref. to FU(H4)-65 Rear Oxygen Sensor.></ref.

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

Z: DTC P0139 — REAR OXYGEN SENSOR CIRCUIT SLOW RESPONSE — SOUBCOZE29

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0136?	Inspect DTC P0136 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.> NOTE: In this case, it is not necessary to inspect DTC P0139.</ref.>	Replace rear oxy- gen sensor. <ref. to FU(H4)-65 Rear Oxygen Sensor.></ref.
Engine (DIAGNOSTICS)

AA: DTC P0170 — FUEL TRIM MALFUNCTION — SOUBCOZED31

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Erroneous idling
 - Engine stalls.
 - Poor driving performance

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

No.	Step	Check	Yes	No
1	CHECK EXHAUST SYSTEM.	Are there holes or loose bolts on exhaust system?	Repair 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 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 on the floor. 1) Release fuel pressure. (1) Disconnect connector from fuel pump relay. (2) Start the engine and run it until it stalls. (3) After the engine stalls, crank it for five more seconds. (4) Turn ignition switch to OFF. 2) Connect connector to fuel pump relay. 3) Disconnect fuel delivery hose from fuel filter, and connect fuel pressure gauge. 4) Install fuel filler cap. 5) Start the engine and idle while gear position is neutral. 6) Measure fuel pressure while disconnecting pressure regulator vacuum hose from intake manifold. WARNING: Before removing fuel pressure gauge, release fuel pressure. NOTE: If fuel pressure does not increase, squeeze fuel return hose 2 to 3 times, then measure fuel pressure again.	Is fuel pressure between 284 and 314 kPa (2.9 — 3.2 kg/cm ² , 41 — 46 psi)?	Go to step 4.	Repair the follow- ing items. Fuel pressure too high • Clogged fuel return line or bent hose Fuel pressure too low • Improper fuel pump discharge • Clogged fuel supply line

No.	Step	Check	Yes	No
4	CHECK FUEL PRESSURE. After connecting pressure regulator vacuum hose, measure fuel pressure. WARNING: Before removing fuel pressure gauge, release fuel pressure. NOTE: • If fuel pressure does not increase, squeeze fuel return hose 2 to 3 times, then measure fuel pressure again. • If out of specification as measured at this step, check or replace pressure regulator and pressure regulator vacuum hose.	Is fuel pressure between 206 and 235 kPa (2.1 — 2.4 kg/cm ² , 30 — 34 psi)?	Go to step 5 .	Repair the follow- ing items. Fuel pressure too high • Faulty pressure regulator • Clogged fuel return line or bent hose Fuel pressure too low • Faulty pressure regulator • Improper fuel pump discharge • Clogged fuel supply line
5	 CHECK ENGINE COOLANT TEMPERA- TURE SENSOR. 1) Start the engine and warm-up completely. 2) Read data of engine coolant temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.> OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool 	Is temperature between 70°C (158°F) and 100°C (212°F)?	Go to step 6.	Replace engine coolant tempera- ture sensor. <ref. to FU(H4)-40 Engine Coolant Temperature Sen- sor.></ref.
6	CHECK INTAKE MANIFOLD PRESSURE SENSOR SIGNAL. 1) Start the engine and warm-up engine until coolant temperature is greater than 60°C (140°F). 2) Place the selector lever in "N" or "P" posi- tion. 3) Turn A/C switch to OFF. 4) Turn all accessory switches to OFF. 5) Read data of intake manifold pressure sen- sor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""> • OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general Scan Tool Instruction Manual. Specification: <i>Idling</i> 24.0 — 41.3 kPa (180 — 310 mmHg, 7.09 — 12.20 inHg) <i>Ignition ON</i> 73.3 — 106.6 kPa (550 — 800 mmHg, 21.65 — 31.50 inHg)</ref.>	Is the voltage within the specifications?	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.	Replace intake air temperature and pressure sensor. <ref. to<br="">FU(H4)-51 Intake Air Temperature and Pressure Sensor.></ref.>

Engine (DIAGNOSTICS)

AB: DTC P0181 — FUEL TEMPERATURE SENSOR A CIRCUIT RANGE/PERFORMANCE PROBLEM — 5008002B34

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0182 or P0183?	Inspect DTC P0182 or P0183 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.> NOTE: In this case, it is not necessary to inspect DTC P0181.</ref.>	Replace fuel tem- perature sensor. <ref. to<br="">EC(H4)-10 Fuel Temperature Sen- sor.></ref.>

Engine (DIAGNOSTICS)

AC: DTC P0182 — FUEL TEMPERATURE SENSOR A CIRCUIT LOW INPUT —

S008602B35

• DTC DETECTING CONDITION:

• Immediately at fault recognition

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK CURRENT DATA. 1) Start engine. 2) Read data of fuel temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". < Ref. to EN(H4)-52 Subaru Select Monitor.> • OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.	Is the value greater than 150°C (302°F)?	Go to step 2.	Even if MIL lights up, the circuit has returned to a nor- mal condition at this time.
2	 CHECK CURRENT DATA. 1) Turn ignition switch to OFF. 2) Remove access hole lid. 3) Disconnect connector from fuel pump. 4) Turn ignition switch to ON. 5) Read data of fuel temperature sensor signal using Subaru Select Monitor or the OBD-II general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.> OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool 	Is the value less than -40°C (-40°F)?	Replace fuel tem- perature sensor. <ref. to<br="">EC(H4)-10 Fuel Temperature Sen- sor.></ref.>	Repair ground short circuit in harness between fuel pump and ECM connector.

Engine (DIAGNOSTICS)

AD: DTC P0183 — FUEL TEMPERATURE SENSOR A CIRCUIT HIGH INPUT

S008602B36

• DTC DETECTING CONDITION:

• Immediately at fault recognition

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
2	CHECK CURRENT DATA. 1) Start engine. 2) Read data of fuel temperature sensor sig- nal using Subaru Select Monitor or OBD-II general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""> • OBD-II general scan tool For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.</ref.>	Is the value less than -40°C (-40°F)?	Go to step 2.	Repair poor con- tact. NOTE: In this case, repair the follow- ing: • Poor contact in fuel pump con- nector • Poor contact in ECM connector • Poor contact in coupling connec- tors (B22, B99 and R57) • Poor contact in joint connector (B83) Go to step 3
2	 CHECK HARNESS BETWEEN FOEL TEM- PERATURE SENSOR AND ECM CONNEC- TOR. 1) Turn ignition switch to OFF. 2) Remove access hole lid. 3) Disconnect connector from fuel pump. 4) Measure voltage between fuel pump con- nector and chassis ground. Connector & terminal (R58) No. 6 (+) — Chassis ground (-): 	V?	short circuit in harness between ECM and fuel pump connector.	Go to step 3.
3	CHECK HARNESS BETWEEN FUEL TEM- PERATURE SENSOR AND ECM CONNEC- TOR. 1) Turn ignition switch to ON. 2) Measure voltage between fuel pump con- nector and chassis ground. Connector & terminal (R58) No. 6 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Repair battery short circuit in harness between ECM and fuel pump connector.	Go to step 4.
4	CHECK HARNESS BETWEEN FUEL TEM- PERATURE SENSOR AND ECM CONNEC- TOR. Measure voltage between fuel pump connec- tor and chassis ground. <i>Connector & terminal</i> (<i>R58</i>) No. 6 (+) — Chassis ground (-):	Is the voltage more than 4 V?	Go to step 5.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and fuel pump connector • Poor contact in fuel pump con- nector • Poor contact in ECM connector • Poor contact in ECM connector • Poor contact in coupling connec- tors (B99 and R57)

No.	Step	Check	Yes	No
5	CHECK HARNESS BETWEEN FUEL TEM- PERATURE SENSOR AND ECM CONNEC- TOR. 1) Turn ignition switch to OFF. 2) Measure resistance of harness between fuel pump connector and chassis ground. Connector & terminal (R58) No. 5 — Chassis ground:	Is the resistance less than 5 Ω?	Replace fuel tem- perature sensor. <ref. to<br="">EC(H4)-10 Fuel Temperature Sen- sor.></ref.>	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and fuel pump connector • Poor contact in fuel pump con- nector • Poor contact in ECM connector • Poor contact in ECM connector • Poor contact in coupling connec- tors (B99 and R57) • Poor contact in joint connector (B83)

Engine (DIAGNOSTICS)

AE: DTC P0301 — CYLINDER 1 MISFIRE DETECTED — SOUGCO2B37

NOTE:

For the diagnostic procedure, refer to DTC P0304. <Ref. to EN(H4)-392 DTC P0304 — CYLINDER 4 MIS-FIRE DETECTED —, Diagnostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.>

AF: DTC P0302 — CYLINDER 2 MISFIRE DETECTED — SOUBCOLDER

NOTE:

For the diagnostic procedure, refer to DTC P0304. <Ref. to EN(H4)-392 DTC P0304 — CYLINDER 4 MIS-FIRE DETECTED —, Diagnostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.>

AG: DTC P0303 — CYLINDER 3 MISFIRE DETECTED — SOUBCOLESS

NOTE:

For the diagnostic procedure, refer to DTC P0304. <Ref. to EN(H4)-392 DTC P0304 — CYLINDER 4 MIS-FIRE DETECTED —, Diagnostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.>

Engine (DIAGNOSTICS)

AH: DTC P0304 — CYLINDER 4 MISFIRE DETECTED — SOUBCOZEMO

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- Immediately at fault recognition (A misfire which could damage catalyst occurs.)
- TROUBLE SYMPTOM:
 - Engine stalls.
 - Erroneous idling
 - Rough driving

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

Engine (DIAGNOSTICS)

• WIRING DIAGRAM:





B2M3966

Engine (DIAGNOSTICS)



B2M3967

No	Step	Check	Ves	No
1		Does the Subaru Select	Inspect DTC	Go to step 2
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0106, P0107, P0108, P0116, P0117 or P0125?	Inspect DTC P0106, P0107, P0108, P0116, P0117 or P0125 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.> NOTE: In this case, it is not necessary to inspect DTC P0301, P0302, P0303 and</ref.>	Go to step 2.
			P0304.	
2	CHECK OUTPUT SIGNAL FROM ECM. 1) Turn ignition switch to ON. 2) Measure voltage between ECM connector and chassis ground on faulty cylinders. Connector & terminal #1 (B134) No. 4 (+) — Chassis ground (-): #2 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 14 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 7 .	Go to step 3.
3	CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from fuel injector on faulty cylinders. 3) Measure voltage 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:	Is the resistance less than 10 Ω?	Repair ground short circuit in harness between fuel injector and ECM connector.	Go to step 4.
4	CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. Measure resistance of harness connector between ECM connector and fuel injector on faulty cylinders. Connector & terminal #1 (B134) No. 4 — (E5) No. 1: #2 (B134) No. 13 — (E16) No. 1: #3 (B134) No. 14 — (E6) No. 1: #4 (B134) No. 15 — (E17) No. 1:	Is the resistance less than 1 Ω ?	Go to step 5 .	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and fuel injector connector • Poor contact in coupling connec- tor (B21)

Engine (DIAGNOSTICS)

Tool CHECK FUEL INJECTOR. Measure resistance between fuel injector ter- minals on faulty cylinder. Terminals is the resistance between 5 and 20 Ω? Go to step 6. Replace faulty fuel injector. <ref. to FUH/AP: 6F ruel injector. 6 CHECK POWER SUPLY LINE. 1) Turn ignition switch to ON. 2) Measure voltage between fuel injector and engine ground on faulty cylinders. Connector & terminal #1 (E5) No. 2 (+) — Engine ground (-): #3 (E6) No. 2 (+) — Engine ground (-): #4 (E17) No. 4 (+) — Chassis ground (-): #4 (E13) No. 13 (+) — Chassis ground (-): #4 (E13) No. 15 (+) — Chassis ground (-): #4 (E13) No. 15 (+) — Chassis ground (-): #5 (Check FUEL INJECTOR. 1) Turn ignition switch to OFF. 2) Measure resistance between fuel injector #4 (E13) No. 15 (+) — Chassis ground (-): #5 (Check RINSTALLATION OF CAMSHAFT POSITION SENSOR. 9 Is the resistance less than 1 (2) Replace faulty tuel injector. 10 Go to step 9. Control Module.> 9 CHECK RINSTALLATION OF CAMSHAFT POSITION SENSOR. Is car</ref. 	No.	Sten	Check	Yes	No
Measure resistance between fuel injector terminals on faulty cylinder: and 20 Ω? and 20 Ω? for Under Status for Under Status for Under Status 6 CHECK POWER SUPPLY LINE. 1) Turn ignition switch to ON. is the voltage more than 10 Repair poor contex is and connector. Repair poor contex is in this case, repair the follow-ing: Open circuit. Repair harness and connector. 10 Turn ignition switch to ON. State voltage more than 10 Repair harness is between fuel injector and (-): for Under State is all connector is the follow-ing: Open circuit in harness between fuel injector and (-): for Under State is all connector is connector is the follow-ing: Open circuit in harness between fuel injector on faulty cylinders. 7 CHECK HARNESS BETWEEN FUEL INJECT TOR AND ECM CONNECTOR. Is the voltage more than 10 Repair battery short circuit in main relay and fuel injector on faulty cylinders. So to step 8. 7 CHECK HARNESS BETWEEN FUEL INJECT TOR AND ECM CONNECTOR. Is the voltage more than 10 Repair battery short circuit in harness between fuel injector on faulty cylinders. Go to step 8. 7 CHECK HARNESS BETWEEN FUEL INJECT TOR AND ECM CONNECTOR. Is the rootage more than 10 Repair battery short circuit in harness between fuel injector on faulty cylinders. Go to step 8. Go to step 8. 8 CHECK FUEL INJECTOR. <t< th=""><th>5</th><th></th><th>Is the resistance between 5</th><th>Go to step 6</th><th>Replace faulty</th></t<>	5		Is the resistance between 5	Go to step 6	Replace faulty
minals on faulty cylinder. Ib FU(H4)-56 Fuel Injector.> 6 CHECK POWER SUPELY LINE. Is the voltage more than 10 Repair poor contact in all connector. Repair poor contact in all connector. Repair barress and connector. Repair barress and connector. NOTE: case. 7 Connector & terminal to f(C): #1 (E5) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #5 the voltage more than 10 Repair battery Open crottact in nector on faulty cylinders. • Poor contact in nector on faulty cylinders. 7 CHECK HARNESS BETWEEN FUEL INJECT Is the voltage more than 10 Repair battery Stor of ault for on faulty cylinders. Go to step 8. 8 CHECK FUEL INJECTOR. In mignition switch to OFF. Is the voltage more than 10 Fuel harress between fuel injector on faulty cylinder. Fuel harress for on faulty cylinder. Go to step 9. Fuel harress between fuel injector	ľ	Measure resistance between fuel injector ter-	and 20 Ω ?		fuel injector. <ref.< th=""></ref.<>
Terminals No. 1 – No. 2: Injector.> 6 1) Fun ignition switch to ON. 2) Measure voltage between fuel injector and engine ground of tally cylinders. Connector & terminal #1 (E5) No. 2 (+) — Engine ground (-): #3 (E5) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): Is the voltage more than 10 Y? Repair horroom- tors in fuel injector circuit. Repair horroom- tors in fuel injector work in all connec- tors in fuel injector con- nector on faulty cylinders NOTE: In this case, repair the follow- ing: • Open circuit in harness between main relay and fuel injector con- nector • Poor contact in main relay con- nector • Poor contact in the injector. After repair, replace ECMRet. INJECTOR. • If (B134) No. 14 (+) — Chassis ground (-): • # (B134) No. 15 (+) — Chassis ground (-): • Masure resistance between fuel injector terminals on faulty cylinder. • Terminals No. 1 — No. 2: • Check INSTALLATION OF CAMSHAFT POSITION SENSOR/CRAMSHAFT POSI- TION SENSOR/CRAMSHAFT POSI- TION SENSOR/CRAMSHAFT POSI- TION SENSOR/CRAMSHAFT SPROCKET. Is camshaft position sensor or		minals on faulty cylinder.			to FU(H4)-56 Fuel
No. 1 - No. 2: Repair location Repair location <thc< th=""><th></th><th>Terminals</th><th></th><th></th><th>Injector.></th></thc<>		Terminals			Injector.>
 6 CHECK POWER SUPPLY LINE. 1) Turn ignition switch to ON. 2) Measure voltage between fuel injector and engine ground on faulty cylinders. Connector & terminal #1 (E5) No. 2 (+) — Engine ground (-): #2 (E10) No. 2 (+) — Engine ground (-): #3 (E5) No. 2 (+) — Engine ground (-): #3 (E5) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #3 (E5) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #3 (E5) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #3 (E5) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #3 (E5) No. 1 (+) — Chassis ground (-): #3 (E134) No. 15 (+) — Chassis ground (-): #4 (E134) No. 15 (+) — Chassis ground (-): #5 (H14)-67 Engine Control Module.> S the resistance less than 1 Ω? ************************************		No. 1 — No. 2:			
 1) fun ignition switch to ON. 2) Measure voltage between fuel injector and engine ground on faulty cylinders. Connector & terminal #1 (E5) No. 2 (+) — Engine ground (-): #2 (E16) No. 2 (+) — Engine ground (-): #3 (E6) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #1 (E1) (F10) (F10)	6	CHECK POWER SUPPLY LINE.	Is the voltage more than 10	Repair poor con-	Repair harness
b) Integration of lange of source in the information of the informatin of the informatine informatin the informatin the information of		2) Measure voltage between fuel injector and	V ?	tors in fuel injector	
Connector & terminal #1 (ES) No. 2 (+) — Engine ground (-): #2 (E10) No. 2 (+) — Engine ground (-): #3 (E0) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): - Regine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): - Regine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): - Regine ground (-): - Regine ground (-): - Regine ground (-): - Poor contact in main relay and the linjector con- nector on faulty cylinders 7 CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from fuel injector on faulty cylinder. Is the voltage more than 10 V? Repair battery short circuit in harness between ECM and fuel injector. After repair, replace ECM Ref. to FU(H4)-67 Engine Connector X eterminal #1 (B134) No. 13 (+) — Chassis ground (-): #2 (B134) No. 13 (+) — Chassis ground (-): #4 (B134) No. 13 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-): #5 Check FUEL INJECTOR. 1) Turn ignition switch to OFF. 2) Measure resistance less than (-): #4 (B134) No. 15 (+) — Chassis ground (-): #5 Check FUEL INJECTOR. 1) Turn ignition switch to OFF. 2) Measure resistance less than (-): #6 Check FUEL INJECTOR. 1) Turn ignition switch to OFF. 2) Measure resistance between Itel injector Torminals No. 1 — No. 2: Is the resistance less than (-): #1 (2) Check INSTALLATION OF CAMSHAFT POSITION SENSOR/CRANKSHAFT POSI- TON SENSOR/CRANKSHAFT POSI- TON SENSOR/CRANKSHAFT POSI- TON SENSOR/CRANKSHAFT POSI- TON SENSOR/CRANKSHAFT SPROCKET. Is carankshaft position sensor or carankshaft position sensor. Go to step 10. position sensor.		engine around on faulty cylinders.		circuit.	In this case.
#1 (E5) No. 2 (+) — Engine ground (-): #3 (E6) No. 2 (+) — Engine ground (-): #3 (E6) No. 2 (+) — Engine ground (-): inc: • Open circui in harness between main relay and tuel injector con- nector on faulty cylinders • Poor contact in main relay con- nector on faulty cylinders 7 CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector for faulty cylinder. ************************************		Connector & terminal			repair the follow-
#2 (E16) No. 2 (+) — Engine ground (-): #3 (E6) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): #4 (E13) No. 12 (+) — Chassis ground (-): #3 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 13 (+) — Chassis ground (-): #4 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 14 (+) — Chassis ground (-): #3 (CHECK FUEL INJECTOR. 1) Turn ignition switch to OFF. 2) Measure resistance between fuel injector terminals on faulty cylinder. Terminals No. 1 — No. 2: Is the resistance less than 1 Ω? Replace faulty fuel injector. After repair, replace. ECM. <ref. to<br="">FU(H4)-67 Engine. Control Module.> Go to step 9. 9 CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR. Is camshaft position sensor or crankshaft position sensor. Go to step 10. 10 CHECK CRANKSHAFT SPROCKET. Is canshaft position sensor. Go to step 11.</ref.>		#1 (E5) No. 2 (+) — Engine ground (–):			ing:
(-): #3 (E6) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): harness between main relay and fuel injector con- nector on faulty cylinders 7 CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. is the voltage more than 10 1) Turn ignition switch to OFF. Repair battery short circuit in harness between ECM and fuel injector. After repair, replace Repair battery short circuit in harness between ECM and fuel injector. After repair, replace Go to step 8. 7 CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. Is the voltage more than 10 1) Turn ignition switch to OFF. Repair battery short circuit in harness between ECM and fuel injector. After repair, replace Go to step 8. 3 Turn ignition switch to ON. Is the resistance less than (-): #2 (B134) No. 14 (+) — Chassis ground (-): #3 (B134) No. 14 (+) — Chassis ground (-): #4 (B134) No. 14 (+) — Chassis ground (-): #4 (B134) No. 14 (+) — Chassis ground (-): #3 (CHECK FUEL INJECTOR, 1) Turn ignition switch to OFF. Is the resistance less than 1 Ω? Replace faulty fuel injector - Ref. to FU(H4)-66 Fuel Injector. > and ECM - Ref. to FU(H4)-66 Fuel Injector. > and ECM - Ref. to F		#2 (E16) No. 2 (+) — Engine ground			 Open circuit in
#3 (E17) No. 2 (+) — Engine ground (-): #4 (E17) No. 2 (+) — Engine ground (-): main felly and the linector con- nector on faulty cylinders 7 CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. is the voltage more than 10 V? Repair battery short circuit in harness between ECM and fuel injector con- nector on faulty cylinders 7 CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. Is the voltage more than 10 V? Repair battery short circuit in harness between ECM and fuel injector. After repair, replace ECMRef. to FU(H4)-67 Engine Control Module.> Go to step 8. 7 CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. Is the voltage more than 10 V? Repair battery short circuit in harness between ECMRef. to FU(H4)-67 Engine Control Module.> Go to step 8. 8 CHECK FUEL INJECTOR. 1 (B134) No. 15 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — C		(-):			harness between
arr (p:1) No. 2 (*) — Engine ground (-): Is the voltage more than 10 Repair battery short circuit in harness between ECM and fuel injector contector from fuel injector on faulty cylinders. Is the voltage more than 10 Repair battery short circuit in harness between ECM and fuel injector. After the injector con- nector So to step 8. 7 CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. Is the voltage more than 10 Repair battery short circuit in harness between ECM and fuel injector. After repair, replace ECMRef. to FU(H4)-67 Engine Connector 4 terminal #1 (B134) No. 14 (+) — Chassis ground (-): #2 (B134) No. 15 (+) — Chassis ground (-): #3 (B134) No. 15 (+) — Chassis ground (-): Is the resistance less than 1 Ω? Replace faulty fuel injector -Ref. to FU(H4)-67 Engine Control Module.> Go to step 9. 8 CHECK FUEL INJECTOR. 1) Lum ingition switch to OFF. 2) Measure resistance between fuel injector terminals on faulty cylinder. Terminals No. 1 — No. 2: Is the resistance less than 1 Ω? Replace faulty fuel injector -Ref. to FU(H4)-67 Engine Control Module.> Go to step 9. 9 CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR/CANKSHAFT POSI- TION SENSOR. Is camshaft position sensor or crankshaft sorocket Replace crank- Go to step 10.		#3 (E6) No. 2 (+) — Engine ground (-):			main relay and
1 1		(-)			nector on faulty
 Poor contact in coupling connector Poor contact in main relay connector on faulty cylinders. Connector & terminal Poor contact in the presence of the presence of					cylinders
Image: Section of the section of					 Poor contact in
7 CHECK HARNESS BETWEEN FUEL INJECTOR AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from fuel injector on faulty cylinders. 7) Turn ignition switch to ON. 4) Measure voltage between ECM connector and chassis ground on faulty cylinders. 7) Turn ignition switch to ON. 4) Measure voltage between ECM connector and chassis ground on faulty cylinders. 7) Turn ignition switch to ON. 7) Turn ignition switch to OFF. 7) Turn ignition switch to OFF. 7) Measure resistance between fuel injector 7) Turn ignition switch to OFF. 7) Measure resistance between fuel injector 7) Turninals 7) Turn ignition switch to OFF. 7) Measure resistance between fuel injector 7) Turninals 7) Turn ignition switch to OFF. 7) Measure resistance between fuel injector 7) Measure resistance between fuel injector 7) Measure resistance between fuel injector 7) Turninals 7) CHECK FUEL INJECTOR. 7) Measure resistance between fuel injector 7) Measure resistance between fuel injector 7) Turninals 7) CHECK INSTALLATION OF CAMSHAFT 70 STION SENSOR. 7) CHECK INSTALLATION OF CAMSHAFT 70 STION SENSOR. 7) CHECK CRANKSHAFT POSI- 70 Control Module. 7) CHECK CRANKSHAFT SPROCKET. 7) Standard sported measure resistance fuel specific					coupling connec-
7 CHECK HARNESS BETWEEN FUEL INJECTOR AND ECM CONNECTOR. Is the voltage more than 10 Repair battery short circuit in harness between ECM connector on faulty cylinders. Go to step 8. 7 CHECK HARNESS BETWEEN FUEL INJECTOR AND ECM CONNECTOR. Is the voltage more than 10 Repair battery short circuit in harness between ECM connector and chassis ground on faulty cylinders. Go to step 8. 7 CHECK HARNESS BETWEEN FUEL INJECTOR. Is the voltage more than 10 Repair battery short circuit in harness between ECM connector and chassis ground on faulty cylinders. Go to step 8. 7 Connector 3 terminal #1 (B134) No. 4 (+) — Chassis ground (-): #2 (B134) No. 13 (+) — Chassis ground (-): FU(H4)-67 Engine Control Module.> Go to step 9. 8 CHECK FUEL INJECTOR. Is the resistance less than 1 (-): Replace faulty fuel injector cafe. Go to step 9. 1) Turn ignition switch to OFF. Is the resistance less than 1. So to step 9. FU(H4)-65 Engine Control Module.> Go to step 9. 8 CHECK FUEL INJECTOR. Is the resistance less than 1. So to step 9. FU(H4)-65 Engine Control Module.> Go to step 9. 9 CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR. Is camshaft position sensor. Fighter camshaft sporecket Go to step 10. 10 CHECK CRAMKSHAFT SPROCKET.					tor
7 CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. Is the voltage more than 10 Y? Repair battery short circuit in harness between 2) Disconnect connector from fuel injector on faulty cylinder. Is the voltage more than 10 Y? Repair battery short circuit in harness between ECM and fuel injector. After repair, replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.> Go to step 8. 7 CHECK FUEL INJECTOR. Is the resistance less than 1 Turn ignition switch to ON. 4) Measure voltage between ECM connector and chassis ground on faulty cylinders. Connector & terminal #1 (B134) No. 13 (+) — Chassis ground (-): #2 (B134) No. 13 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-): #3 (B134) No. 15 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-): B Is the resistance less than 1 Turn ignition switch to OFF. 2) Measure resistance between fuel injector terminals on faulty cylinder. Terminals No. 1 — No. 2: Is the resistance less than 1 Ω? Replace faulty Lei injector. Ref. to FU(H4)-67 Engine Control Module.> Go to step 9. 9 CHECK INSTALLATION OF CAMSHAFT NO SENSOR. Is camshaft position sensor or closely installed? Is canshaft position sensor. or canshaft posi- tion sensor. Go to step 10. 10 CHECK CRANKSHAFT SPROCKET. Is crankshaft sprocket Replace crank- Go to step 11.</ref.>					 Poor contact in main relay con
7 CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. Is the voltage more than 10 Repair battery short circuit in harness between ECM and fuel injector. After repair, replace ECMRef. to FU(H4)-67 Engine Control Module.> Go to step 8. 7 CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. Is the voltage more than 10 Repair battery short circuit in harness between ECM and fuel injector. After repair, replace ECMRef. to FU(H4)-67 Engine Control Module.> Go to step 8. 3 Turn ignition switch to ON.					nector
1 CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from fuel injector on faulty cylinder. 3) Turn ignition switch to ON. 4) Measure voltage between ECM connector and chassis ground on faulty cylinders. Connector & terminal #1 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 15 (+) — Chassis ground (-): #3 (B134) No. 14 (+) — Chassis ground (-): #3 (B134) No. 15 (+) — Chassis ground (-): #3 (B134) No. 14 (+) — Chassis grou					 Poor contact in
7CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from fuel injector on faulty cylinder. 3) Turn ignition switch to ON. 4) Measure voltage between ECM connector and chassis ground on faulty cylinders. Connector & terminal #1 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 14 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-): #3 (B134) No. 15 (+) — Chassis ground (-): #3 (B134) No. 15 (+) — Chassis ground (-): #3 (B134) No. 15 (+) — Chassis ground (-):Is the resistance less than 1 Ω?Replace faulty fuel injector <ref. </ref. to FU(H4)-56 Fuel lnjector.> and FU(H4)-56 Fuel lnjector <ref. </ref. to FU(H4)-56 Fuel lnjector <ref. to<br=""></ref.> FU(H4)-56 Fuel lnjector <ref. to<br=""></ref.> FU(H4)-56 Fuel lnjector <ref. to<br=""></ref.> FU(H4)-56 Fuel lnjector <ref. to<br=""></ref.> FU(H4)-56 Fuel lnjector > Torminals No. 1 — No. 2:Is the resistance less than sor loosely installed?Replace faulty fuel injector <ref. to<br=""></ref.> FU(H4)-56 Fuel lnjector.> and sor loosely installed?Go to step 9.9CHECK CRANKSHAFT SPROCKET.Is camshaft position sensor or crankshaft position sensor or crankshaft position sensor or crankshaft position sensor or crankshaft sporketGo to step 11.					fuel injector con-
7 CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from fuel injector on faulty cylinder. 3) Turn ignition switch to ON. 4) Measure voltage between ECM connector and chassis ground on faulty cylinders. Connector & terminal #1 (B134) No. 4 (+) — Chassis ground (-): #2 (B134) No. 13 (+) — Chassis ground (-): #4 (B134) No. 13 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-): #3 (B134) No. 15 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-): #3 (B134) No. 15 (+) — Chassis ground (-): 8 Is the resistance less than 1) Turn ignition switch to OFF. 2) Measure resistance between fuel injector terminals No. 1 — No. 2: Is the resistance less than 1 Ω? Replace faulty fuel injector <ref. to FU(H4)-65 Fuel Injector. > and ECM <ref. to<br="">FU(H4)-67 Engine Control Module.> Go to step 9. 9 CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR. Is camshaft position sensor or crankshaft position sensor sor loosely installed? Is camshaft position sensor or crankshaft position sensor or crankshaft position sensor or crankshaft position sensor or crankshaft position sensor Go to step 10.</ref.></ref. 					nector on faulty
7 CHECK HARNESS BETWEEN FUEL INJEC- TOR AND ECM CONNECTOR. Is the voltage more than 10 Repair battery short circuit in harness between Go to step 8. 1) Turn ignition switch to OFF. Disconnect connector from fuel injector on faulty cylinder. Is the voltage more than 10 Repair battery short circuit in harness between Go to step 8. 4) Measure voltage between ECM connector and chassis ground on faulty cylinders. Connector & terminal FU(H4)-67 Engine Control Module.> Control Module.> #1 (B134) No. 4 (+) — Chassis ground (-): #2 (B134) No. 13 (+) — Chassis ground (-): Is the resistance less than 1 Turn ignition switch to OFF. Replace faulty fuel injector <ref. to FU(H4)-67 Engine Control Module.> 8 CHECK FUEL INJECTOR. 1) Turn ignition switch to OFF. 2) Measure resistance between fuel injector terminals on faulty cylinder. Is the resistance less than 1 Ω? Replace faulty fuel injector <ref. to FU(H4)-67 Engine Control Module.> 9 CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR. Is camshaft position sensor or crankshaft position sensor or crankshaft position sensor or crankshaft position sensor Go to step 10. 10 CHECK CRANKSHAFT SPROCKET. Is crankshaft sprocket Replace crank- Replace crank- Go to step 11.</ref. </ref. 					cylinders
1 OR AND ECM CONNECTOR. V? Short Circuit in 1) Turn ignition switch to OFF. Disconnector from fuel injector on faulty cylinder. harness between 2) Disconnect connector from fuel injector on faulty cylinder. injector. After ECM and fuel injector. After 3) Turn ignition switch to ON. Measure voltage between ECM connector and chassis ground on faulty cylinders. ECM. <ref. td="" to<=""> Connector & terminal #1 (B134) No. 4 (+) — Chassis ground (-): #2 (B134) No. 13 (+) — Chassis ground (-): Control Module.> #3 (B134) No. 14 (+) — Chassis ground (-): #3 (B134) No. 15 (+) — Chassis ground (-): Is the resistance less than Replace faulty fuel injector <ref. fu(h4)-56="" fuel="" injector.<="" td="" to=""> 1) Turn ignition switch to OFF. Is the resistance less than Replace faulty fuel injector <ref. <ref.="" control="" engine="" fu(h4)-56="" fu(h4)-67="" fuel="" injector="" module.="" to=""> Go to step 9. 9 CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR. Is camshaft position sensor or crankshaft position sensor. Tighten camshaft position sensor. 10 CHECK CRANKSHAFT SPROCKET. Is crankshaft sprocket Replace crank- Go to step 11. </ref.></ref.></ref.>	7	CHECK HARNESS BETWEEN FUEL INJEC-	Is the voltage more than 10	Repair battery	Go to step 8.
 a) Turn Ignition switch to OPT. 2) Disconnect connector from fuel injector on faulty cylinder. 3) Turn ignition switch to ON. 4) Measure voltage between ECM connector and chassis ground on faulty cylinders. Connector & terminal #1 (B134) No. 4 (+) — Chassis ground (-): #2 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 15 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-): #2 (B134) No. 15 (+) — Chassis ground (-): #3 (B134) No. 15 (+) — Chassis ground (-): B the resistance less than (-): Measure resistance between fuel injector terminals on faulty cylinder. Terminals No. 1 — No. 2: CHECK INSTALLATION OF CAMSHAFT POSI- No. 1 — No. 2: CHECK INSTALLATION OF CAMSHAFT POSI- TION SENSOR. CHECK CRANKSHAFT SPROCKET. Is camshaft position sensor or crankshaft position sensor. CHECK CRANKSHAFT SPROCKET. Is crankshaft sprocket 		1) Turn ignition switch to OEE	V?	snort circuit in	
Faulty cylinder.Connector3) Turn ignition switch to ON.injector. After4) Measure voltage between ECM connector and chassis ground of faulty cylinders.ECM. <ref. to<br=""></ref.> FU(H4)-67 Engine Control Module.> <i>Connector & terminal</i> #1 (B134) No. 4 (+) — Chassis ground (-): #2 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 14 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-):Is the resistance less than 1 \Overlap Turn ignition switch to OFF. 2) Measure resistance between fuel injector terminals on faulty cylinder.Is the resistance less than 1 \Overlap 2Replace faulty fuel injector <ref. </ref. to FU(H4)-56 Fuel Injector.> and ECM <ref. to<br=""></ref.> FU(H4)-67 Engine Control Module.>Go to step 9.9CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR.Is camshaft position sensor or crankshaft position sensor or crankshaft position sensor or crankshaft position sensor.Tighten camshaft position sensor ton sensor.Go to step 10.10CHECK CRANKSHAFT SPROCKET.Is crankshaft sporcketReplace crank- Go to step 11.Go to step 11.		2) Disconnect connector from fuel injector on		FCM and fuel	
3) Turn ignition switch to ON. Prepair, replace 4) Measure voltage between ECM connector and chassis ground neulty cylinders. repair, replace Connector & terminal #1 (B134) No. 4 (+) — Chassis ground (-): #2 (B134) No. 13 (+) — Chassis ground (-): #2 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 14 (+) — Chassis ground (-): #3 (B134) No. 15 (+) — Chassis ground (-): 8 CHECK FUEL INJECTOR. 1) Turn ignition switch to OFF. Is the resistance less than 1 Ω? 2) Measure resistance between fuel injector terminals on faulty cylinder. Is the resistance less than 1 Ω? Terminals No. 1 — No. 2: 9 CHECK INSTALLATION OF CAMSHAFT POSI- TION SENSOR. 9 CHECK CRANKSHAFT SPROCKET. 10 CHECK CRANKSHAFT SPROCKET.		faulty cylinder.		injector. After	
4) Measure voltage between ECM connector and chassis ground on faulty cylinders. Connector & terminal #1 (B134) No. 4 (+) — Chassis ground (-): #2 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 13 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-):ECM. <ref. to<br=""></ref.> FU(H4)-67 Engine Control Module.>8CHECK FUEL INJECTOR. (1) Turn ignition switch to OFF. (2) Measure resistance between fuel injector terminals on faulty cylinder. Terminals No. 1 — No. 2:Is the resistance less than 1 Ω?Replace faulty fuel injector <ref. </ref. to FU(H4)-67 Engine Control Module.>Go to step 9.9CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR.Is camshaft position sensor or crankshaft position sensor or crankshaft position sensor.Tighten camshaft position sensor.Go to step 10.10CHECK CRANKSHAFT SPROCKET.Is crankshaft sprocketReplace crank-Go to step 11.		3) Turn ignition switch to ON.		repair, replace	
and chassis ground on faulty cylinders. Connector & terminal #1 (B134) No. 4 (+) — Chassis ground (-): #2 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 14 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-):FU(H4)-67 Engine Control Module.>8CHECK FUEL INJECTOR. (1) Turn ignition switch to OFF. (2) Measure resistance between fuel injector terminals on faulty cylinder. Terminals No. 1 — No. 2:Is the resistance less than 1 Ω?Replace faulty fuel injector <ref. </ref. to FU(H4)-65 Fuel linjector. and ECM <ref. to<br=""></ref.> FU(H4)-67 Engine Control Module.>Go to step 9.9CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR.Is camshaft position sensor or crankshaft position sensor sor loosely installed?Tighten camshaft position sensor.Go to step 10.10CHECK CRANKSHAFT SPROCKET.Is crankshaft sprocketReplace crank- Go to step 11.Go to step 11.		4) Measure voltage between ECM connector		ECM. <ref. th="" to<=""><th></th></ref.>	
Connector & terminal #1 (B134) No. 4 (+) — Chassis ground (-): #2 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 13 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-):Control Module.>8CHECK FUEL INJECTOR. 1) Turn ignition switch to OFF. 2) Measure resistance between fuel injector terminals on faulty cylinder. Terminals No. 1 — No. 2:Is the resistance less than 1 Ω?Replace faulty fuel injector <ref. </ref. to FU(H4)-56 Fuel Injector.> and ECM <ref. to<br=""></ref.> FU(H4)-67 Engine Control Module.>.Go to step 9.9CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR/CRANKSHAFT POSI- TION SENSOR.Is camshaft position sensor or crankshaft position sensor or crankshaft position sensor.Tighten camshaft position sensor.Go to step 10.10CHECK CRANKSHAFT SPROCKET.Is crankshaft sprocketReplace rank- Replace rank-Go to step 11.		and chassis ground on faulty cylinders.		FU(H4)-67 Engine	
*** (E) 133 / No. 4 (+) — Chassis ground (-): #2 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 14 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-): Is the resistance less than 1 Ω? Replace faulty fuel injector < Ref. to FU(H4)-56 Fuel Injector.> and ECM < Ref. to FU(H4)-67 Engine Control Module.>. 9 CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR/CRANKSHAFT POSI- TION SENSOR. Is camshaft position sensor or crankshaft position sensor. Tighten camshaft position sensor. Go to step 10. 10 CHECK CRANKSHAFT SPROCKET. Is crankshaft sprocket Replace crank- Replace crank- Go to step 11.		Connector & terminal		Control Module.>	
#2 (B134) No. 13 (+) — Chassis ground (-): #3 (B134) No. 14 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground (-):Replace faulty fuel injector <ref. </ref. to FU(H4)-56 Fuel Injector.> and ECM <ref. fu(h4)-56="" fuel<br="" to=""></ref.> Injector.> and ECM <ref. to<br=""></ref.> FU(H4)-67 Engine Control Module.>.Go to step 9.9CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR.Is canshaft position sensor or crankshaft position sensor or loosely installed?Tighten canshaft position sensor.Go to step 10.10CHECK CRANKSHAFT SPROCKET.Is crankshaft sprocketReplace crank- Go to step 11.		$(-)^{-1}$			
(-): #3 (B134) No. 14 (+) — Chassis ground (-): #4 (B134) No. 15 (+) — Chassis ground *#4 (B134) No. 15 (+) — Chassis ground Is the resistance less than (-): #4 (B134) No. 15 (+) — Chassis ground *** CHECK FUEL INJECTOR. 1) Turn ignition switch to OFF. Is the resistance less than 2) Measure resistance between fuel injector 1 Ω? ferminals on faulty cylinder. 1 Ω? Terminals No. 1 — No. 2: 9 CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR/CRANKSHAFT POSI- Is camshaft position sensor rion SENSOR. Is crankshaft position sensor. 10 CHECK CRANKSHAFT SPROCKET.		#2 (B134) No. 13 (+) — Chassis ground			
#3 (B134) No. 14 (+) — Chassis ground (-):#4 (B134) No. 15 (+) — Chassis ground (-):Replace faulty fuel injector serviceGo to step 9.8CHECK FUEL INJECTOR. 1) Turn ignition switch to OFF. 2) Measure resistance between fuel injector terminals on faulty cylinder. Terminals No. 1 — No. 2:Is the resistance less than 1 Ω?Replace faulty fuel injector <ref. </ref. to FU(H4)-56 Fuel Injector.> and ECM <ref. to<br=""></ref.> FU(H4)-67 Engine Control Module.>.Go to step 9.9CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR/CRANKSHAFT POSI- TION SENSOR.Is camshaft position sensor or crankshaft position sensor.Tighten camshaft position sensor.Go to step 10.10CHECK CRANKSHAFT SPROCKET.Is crankshaft sprocketReplace crank- Replace crank-Go to step 11.		(–):			
(-): #4 (B134) No. 15 (+) — Chassis ground (-):Is the resistance less than 1 Turn ignition switch to OFF. 2) Measure resistance between fuel injector terminals on faulty cylinder. Terminals No. 1 — No. 2:Is the resistance less than 1 Ω?Replace faulty fuel injector <ref. </ref. to FU(H4)-56 Fuel Injector.> and ECM <ref. to<br=""></ref.> FU(H4)-67 Engine Control Module.>.Go to step 9.9CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR.Is camshaft position sensor or crankshaft position sensor.Tighten camshaft position sensor.Go to step 10.10CHECK CRANKSHAFT SPROCKET.Is crankshaft sprocketReplace crank- Go to step 11.		#3 (B134) No. 14 (+) — Chassis ground			
#4 (B134) No. 15 (+) — Chassis ground (-): Replace faulty fuel injector <ref. to FU(H4)-56 Fuel Injector.> and ECM <ref. to<br="">FU(H4)-67 Engine Control Module.>. Go to step 9. 9 CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR/CRANKSHAFT POSI- TION SENSOR. Is camshaft position sensor or crankshaft position sensor. Tighten camshaft position sensor. Go to step 10.</ref.></ref. 		(-):			
8 CHECK FUEL INJECTOR. Is the resistance less than Replace faulty Go to step 9. 1) Turn ignition switch to OFF. Is the resistance less than Replace faulty fuel injector <ref.< td=""> for FU(H4)-56 Fuel Go to step 9. 2) Measure resistance between fuel injector terminals on faulty cylinder. Is the resistance less than Replace faulty fuel injector <ref.< td=""> for FU(H4)-56 Fuel Injector.> and ECM <ref. td="" to<=""> FU(H4)-67 Engine Control Module.>. 9 CHECK INSTALLATION OF CAMSHAFT Is camshaft position sensor Tighten camshaft Go to step 10. 9 CHECK INSTALLATION OF CAMSHAFT Is camshaft position sensor Tighten camshaft Go to step 10. 10 CHECK CRANKSHAFT SPROCKET. Is crankshaft sprocket Replace crank- Go to step 11.</ref.></ref.<></ref.<>		(B134) No. 15 (+) — Chassis ground (_)			
1) Turn ignition switch to OFF. 1 Ω? fuel injector <ref.< td=""> 2) Measure resistance between fuel injector terminals on faulty cylinder. 1 Ω? fuel injector <ref.< td=""> <i>Terminals</i> No. 1 — No. 2: ECM <ref. td="" to<=""> ECM <ref. td="" to<=""> 9 CHECK INSTALLATION OF CAMSHAFT Is camshaft position sensor or crankshaft position sensor or crankshaft position sensor. Tighten camshaft position sensor or crankshaft position sensor. Go to step 10. 10 CHECK CRANKSHAFT SPROCKET. Is crankshaft sprocket Replace crank- Go to step 11.</ref.></ref.></ref.<></ref.<>	8	CHECK FUEL INJECTOR.	Is the resistance less than	Replace faulty	Go to step 9.
2) Measure resistance between fuel injector terminals on faulty cylinder. to FU(H4)-56 Fuel Injector.> and ECM <ref. control="" engine="" fu(h4)-67="" module.="" to="">. 9 CHECK INSTALLATION OF CAMSHAFT POSI-TION SENSOR/CRANKSHAFT POSI-TION SENSOR. Is camshaft position sensor or crankshaft position sensor or crankshaft position sensor. Tighten camshaft position sensor or crankshaft position sensor. 10 CHECK CRANKSHAFT SPROCKET. Is crankshaft sprocket Replace crank- Go to step 11.</ref.>		1) Turn ignition switch to OFF.	$1 \Omega?$	fuel injector <ref.< th=""><th></th></ref.<>	
terminals on faulty cylinder. Injector.> and ECM <ref. control="" engine="" fu(h4)-67="" module.="" to="">. 9 CHECK INSTALLATION OF CAMSHAFT POSI-TION SENSOR/CRANKSHAFT POSI-TION SENSOR. Is camshaft position sensor or crankshaft position sensor or crankshaft position sensor. Tighten camshaft position sensor or crankshaft position sensor. 10 CHECK CRANKSHAFT SPROCKET. Is crankshaft sprocket Replace crank- Go to step 11.</ref.>		2) Measure resistance between fuel injector		to FU(H4)-56 Fuel	
Terminals No. 1 — No. 2: ECM <ref. td="" to<=""> P CHECK INSTALLATION OF CAMSHAFT Is camshaft position sensor Tighten camshaft POSITION SENSOR/CRANKSHAFT POSI- TION SENSOR. Is camshaft position sensor Tighten camshaft 10 CHECK CRANKSHAFT SPROCKET. Is crankshaft sprocket Replace crank-</ref.>		terminals on faulty cylinder.		Injector.> and	
No. 1 — No. 2: FU(H4)-67 Engine Control Module.>. 9 CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR/CRANKSHAFT POSI- TION SENSOR. Is camshaft position sensor or crankshaft position sen- sor loosely installed? Tighten camshaft position sensor or crankshaft posi- tion sensor. 10 CHECK CRANKSHAFT SPROCKET. Is crankshaft sprocket Replace crank- Go to step 11.		Terminals		ECM <ref. th="" to<=""><th></th></ref.>	
9 CHECK INSTALLATION OF CAMSHAFT POSITION SENSOR/CRANKSHAFT POSI- TION SENSOR. Is camshaft position sensor or crankshaft position sen- sor loosely installed? Tighten camshaft position sensor or crankshaft posi- tion sensor. Go to step 10. 10 CHECK CRANKSHAFT SPROCKET. Is crankshaft sprocket Replace crank- Go to step 11.		No. 1 — No. 2:		FU(H4)-67 Engine	
POSITION SENSOR/CRANKSHAFT POSI- TION SENSOR. or crankshaft position sen- sor loosely installed? position sensor or crankshaft posi- tion sensor. 10 CHECK CRANKSHAFT SPROCKET. Is crankshaft sprocket Replace crank- Sor loosely installed?	9	CHECK INSTALLATION OF CAMSHAFT	Is camshaft position sensor	Tighten camshaft	Go to step 10
TION SENSOR. sor loosely installed? crankshaft position sensor. 10 CHECK CRANKSHAFT SPROCKET. Is crankshaft sprocket Replace crank- Go to step 11.	ľ	POSITION SENSOR/CRANKSHAFT POSI-	or crankshaft position sen-	position sensor or	
tion sensor. 10 CHECK CRANKSHAFT SPROCKET. Is crankshaft sprocket Replace crank- Go to step 11.		TION SENSOR.	sor loosely installed?	crankshaft posi-	
10 CHECK CRANKSHAFT SPROCKET. Is crankshaft sprocket Replace crank- Go to step 11.				tion sensor.	
	10	CHECK CRANKSHAFT SPROCKET.	Is crankshaft sprocket	Replace crank-	Go to step 11.
Remove timing belt cover. rusted or does it have bro- shaft sprocket.		Remove timing belt cover.	rusted or does it have bro-	shaft sprocket.	
ken teeth?			ken teeth?	Ket. to	
IME(H4)-32 Clauk- shaft Sprocket >				shaft Sprocket >	

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No.	Step	Check	Yes	No
11	CHECK INSTALLATION CONDITION OF TIMING BELT. Turn crankshaft using ST, and align alignment mark on crankshaft sprocket with alignment mark on cylinder block. ST 499987500 CRANKSHAFT SOCKET	Is timing belt dislocated from its proper position?	Repair installation condition of timing belt. <ref. to<br="">ME(H4)-46 Timing Belt Assembly.></ref.>	Go to step 12.
12	CHECK FUEL LEVEL.	Is the fuel meter indication higher than the "Lower" level?	Go to step 13.	Replenish fuel so fuel meter indica- tion is higher than the "Lower" level. After replenishing fuel, Go to step 13 .
13	CHECK STATUS OF CHECK ENGINE MAL- FUNCTION INDICATOR LAMP (MIL). 1) Clear memory using Subaru Select Moni- tor. <ref. clear="" en(h4)-63="" memory="" mode.="" to=""> 2) Start engine, and drive the vehicle more than 10 minutes.</ref.>	Is the MIL coming on or blinking?	Go to step 15 .	Go to step 14 .
14	CHECK CAUSE OF MISFIRE DIAGNOSED.	Was the cause of misfire diagnosed when the engine is running?	Finish diagnostics operation, if the engine has no abnormality. NOTE: Ex. Remove spark plug cord, etc.	Repair poor con- tact. NOTE: In this case, repair the follow- ing: • Poor contact in ignitor connector • Poor contact in ignition coil con- nector • Poor contact in fuel injector con- nector on faulty cylinders • Poor contact in ECM connector • Poor contact in coupling connec- tor
15	CHECK AIR INTAKE SYSTEM.	Is there a fault in air intake system?	Repair air intake system. NOTE: Check the follow- ing items: • Are there air leaks or air suc- tion caused by loose or dislo- cated nuts and bolts? • Are there cracks or any dis- connection of hoses?	Go to step 16.

Engine (DIAGNOSTICS)

No.	Step	Check	Yes	No
16	CHECK MISFIRE SYMPTOM.	Does the Subaru Select	Go to step 21.	Go to step 17.
	 1) Turn ignition switch to ON. 2) Read diagnostic trouble code (DTC). Subaru Select Monitor <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.> OBD-II general scan tool For detailed operation procedures, refer to the 	Monitor or OBD-II general scan tool indicate only one DTC?		
	NOTE: Perform diagnosis according to the items listed below.			
17	CHECK DIAGNOSTIC TROUBLE CODE (DTC) ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0301 and P0302?	Go to step 22.	Go to step 18 .
18	CHECK DIAGNOSTIC TROUBLE CODE (DTC) ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0303 and P0304?	Go to step 23.	Go to step 19.
19	CHECK DIAGNOSTIC TROUBLE CODE (DTC) ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0301 and P0303?	Go to step 24.	Go to step 20 .
20	CHECK DIAGNOSTIC TROUBLE CODE (DTC) ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0302 and P0304?	Go to step 25.	Go to step 26.
21	ONLY ONE CYLINDER	Is there a fault in that cylin- der?	Repair or replace faulty parts. NOTE: Check the follow- ing items. • Spark plug • Spark plug cord • Fuel injector • Compression ratio	Go to DTC P0170. <ref. to<br="">EN(H4)-382 DTC P0170 — FUEL TRIM MALFUNC- TION —, Diag- nostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.></ref.>
22	GROUP OF #1 AND #2 CYLINDERS	Are there faults in #1 and #2 cylinders?	Repair or replace faulty parts. NOTE: • Check the fol- lowing items. Spark plugs Fuel injectors Ignition coil Compression ratio • If no abnormal is discovered, check for "IGNI- TION CONTROL SYSTEM" of #1 and #2 cylinders side. <ref. to<br="">EN(H4)-86 IGNI- TION CONTROL SYSTEM, Diag- nostics for Engine Starting Failure.></ref.>	Go to DTC P0170. <ref. to<br="">EN(H4)-382 DTC P0170 — FUEL TRIM MALFUNC- TION —, Diag- nostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.></ref.>

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No.	Step	Check	Yes	No
23	GROUP OF #3 AND #4 CYLINDERS	Are there faults in #3 and #4 cylinders?	Repair or replace faulty parts. NOTE: • Check the fol- lowing items. Spark plugs Fuel injectors Ignition coil • If no abnormal is discovered, check for "16. D: IGNITION CON- TROL SYSTEM" of #3 and #4 cyl- inders side. <ref. to EN(H4)-86 IGNITION CON- TROL SYSTEM, Diagnostics for Engine Starting Failure.></ref. 	Go to DTC P0170. <ref. to<br="">EN(H4)-382 DTC P0170 — FUEL TRIM MALFUNC- TION —, Diag- nostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.></ref.>
24	GROUP OF #1 AND #3 CYLINDERS	Are there faults in #1 and #3 cylinders?	Repair or replace faulty parts. NOTE: Check the follow- ing items. • Spark plugs • Fuel injectors • Skipping timing belt teeth	Go to DTC P0170. <ref. to<br="">EN(H4)-382 DTC P0170 — FUEL TRIM MALFUNC- TION —, Diag- nostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.></ref.>
25	GROUP OF #2 AND #4 CYLINDERS	Are there faults in #2 and #4 cylinders?	Repair or replace faulty parts. NOTE: Check the follow- ing items. • Spark plugs • Fuel injectors • Compression ratio • Skipping timing belt teeth	Go to DTC P0170. <ref. to<br="">EN(H4)-382 DTC P0170 — FUEL TRIM MALFUNC- TION —, Diag- nostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.></ref.>
26	CYLINDER AT RANDOM	Is the engine idle rough?	Go to DTC P0170. <ref. to<br="">EN(H4)-382 DTC P0170 — FUEL TRIM MALFUNC- TION —, Diag- nostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.></ref.>	Repair or replace faulty parts. NOTE: Check the follow- ing items. • Spark plugs • Fuel injectors • Compression ratio

Engine (DIAGNOSTICS)

AI: DTC P0327 — KNOCK SENSOR CIRCUIT LOW INPUT — SOUBBOLE F94

• DTC DETECTING CONDITION:

• Immediately at fault recognition

• TROUBLE SYMPTOM:

- Poor driving performance
- Knocking occurs.

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN KNOCK SENSOR AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from ECM. 3) Measure resistance between ECM harness connector and chassis ground. Connector & terminal (B136) No. 4 — Chassis ground:	Is the resistance more than 700 kΩ?	Go to step 2.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between knock sensor and ECM connector • Poor contact in knock sensor con- nector • Poor contact in coupling connec- tor (B21)
2	CHECK KNOCK SENSOR. 1) Disconnect connector from knock sensor. 2) Measure resistance between knock sensor connector terminal and engine ground. Terminal No. 2 — Engine ground:	Is the resistance more than 700 kΩ?	Go to step 3.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between knock sensor and ECM connector • Poor contact in knock sensor con- nector • Poor contact in coupling connec- tor (B21)
3	CHECK CONDITION OF KNOCK SENSOR INSTALLATION.	Is the knock sensor instal- lation bolt tightened securely?	Replace knock sensor. <ref. to<br="">FU(H4)-43 Knock Sensor.></ref.>	Tighten knock sensor installation bolt securely.

Engine (DIAGNOSTICS)

AJ: DTC P0328 — KNOCK SENSOR CIRCUIT HIGH INPUT — S008602F95

• DTC DETECTING CONDITION:

- Immediately at fault recognition
- TROUBLE SYMPTOM:
 - Poor driving performance
 - Knocking occurs.

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN KNOCK SENSOR AND ECM CONNECTOR. Measure resistance of harness between ECM connector and chassis ground. Connector & terminal (B136) No. 4 — Chassis ground:	Is the resistance less than 400 k Ω ?	Go to step 2.	Go to step 3.
2	CHECK KNOCK SENSOR. 1) Disconnect connector from knock sensor. 2) Measure resistance between knock sensor connector terminal and engine ground. <i>Terminal</i> <i>No. 2 — Engine ground:</i>	Is the resistance less than 400 kΩ?	Replace knock sensor. <ref. to<br="">FU(H4)-43 Knock Sensor.></ref.>	Repair ground short circuit in harness between knock sensor con- nector and ECM connector. NOTE: The harness between both connectors is shielded. Repair short circuit of harness together with shield.
3	CHECK INPUT SIGNAL FOR ECM. 1) Connect connectors to ECM and knock sensor. 2) Turn ignition switch to ON. 3) Measure voltage between ECM and chas- sis ground. Connector & terminal (B136) No. 4 (+) — Chassis ground (-):	Is the voltage more than 2 V?	Even if MIL lights up, the circuit has returned to a nor- mal condition at this time. (However, the possibility of poor contact still remains.) NOTE: In this case, repair the follow- ing: • Poor contact in knock sensor con- nector • Poor contact in ECM connector • Poor contact in coupling connec- tor (B21)	Repair poor con- tact in ECM con- nector.

Engine (DIAGNOSTICS)

AK: DTC P0335 — CRANKSHAFT POSITION SENSOR CIRCUIT MALFUNCTION — S008602.E42

• DTC DETECTING CONDITION:

- Immediately at fault recognition
- TROUBLE SYMPTOM:
 - Engine stalls.
 - Failure of engine to start

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN CRANK- SHAFT POSITION SENSOR AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from crankshaft posi- tion sensor. 3) Measure resistance of harness between crankshaft position sensor connector and engine ground. Connector & terminal (E10) No. 1 — Engine ground:	Is the resistance more than 100 kΩ?	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between crankshaft posi- tion sensor and ECM connector • Poor contact in ECM connector • Poor contact in coupling connec- tor (B21)	Go to step 2.
2	CHECK HARNESS BETWEEN CRANK- SHAFT POSITION SENSOR AND ECM CONNECTOR. Measure resistance of harness between crankshaft position sensor connector and engine ground. Connector & terminal (E10) No. 1 — Engine ground:	Is the resistance less than 10 Ω?	Repair ground short circuit in harness between crankshaft posi- tion sensor and ECM connector. NOTE: The harness between both connectors are shielded. Repair ground short cir- cuit in harness together with shield.	Go to step 3.
3	CHECK HARNESS BETWEEN CRANK- SHAFT POSITION SENSOR AND ECM CONNECTOR. Measure resistance of harness between crankshaft position sensor connector and engine ground. Connector & terminal (E10) No. 2 — Engine ground:	Is the resistance less than 5 Ω?	Go to step 4.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between crankshaft posi- tion sensor and ECM connector • Poor contact in ECM connector • Poor contact in coupling connec- tor (B21)
4	CHECK CONDITION OF CRANKSHAFT POSITION SENSOR.	Is the crankshaft position sensor installation bolt tightened securely?	Go to step 5 .	Tighten crankshaft position sensor installation bolt securely.
5	 CHECK CRANKSHAFT POSITION SENSOR. 1) Remove crankshaft position sensor. 2) Measure resistance between connector terminals of crankshaft position sensor. Terminals No. 1 - No. 2: 	Is the resistance between 1 and 4 $k\Omega$?	Repair poor con- tact in crankshaft position sensor connector.	Replace crank- shaft position sen- sor. <ref. to<br="">FU(H4)-41 Crank- shaft Position Sensor.></ref.>

Engine (DIAGNOSTICS)

AL: DTC P0336 — CRANKSHAFT POSITION SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM — 5005022843

• DTC DETECTING CONDITION:

- Immediately at fault recognition
- TROUBLE SYMPTOM:
 - Engine stalls.
 - Failure of engine to start

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0335?	Inspect DTC P0335 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.></ref.>	Go to step 2.
2	CHECK CONDITION OF CRANKSHAFT POSITION SENSOR. Turn ignition switch to OFF.	Is the crankshaft position sensor installation bolt tightened securely?	Go to step 3.	Tighten crankshaft position sensor installation bolt securely.
3	CHECK CRANKSHAFT SPROCKET. Remove front belt cover.	Are crankshaft sprocket teeth cracked or damaged?	Replace crank- shaft sprocket. <ref. to<br="">ME(H4)-52 Crank- shaft Sprocket.></ref.>	Go to step 4.
4	CHECK INSTALLATION CONDITION OF TIMING BELT. Turn crankshaft using ST, and align alignment mark on crankshaft sprocket with alignment mark on cylinder block. ST 499987500 CRANKSHAFT SOCKET	Is timing belt dislocated from its proper position?	Repair installation condition of timing belt. <ref. to<br="">ME(H4)-46 Timing Belt Assembly.></ref.>	Replace crank- shaft position sen- sor. <ref. to<br="">FU(H4)-41 Crank- shaft Position Sensor.></ref.>

Engine (DIAGNOSTICS)

AM: DTC P0340 — CAMSHAFT POSITION SENSOR CIRCUIT MALFUNCTION

S008602B44

- DTC DETECTING CONDITION:
 - Immediately at fault recognition
- TROUBLE SYMPTOM:
 - Engine stalls.
 - Failure of engine to start

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	 CHECK HARNESS BETWEEN CAMSHAFT POSITION SENSOR AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from camshaft position sensor. 3) Measure resistance of harness between camshaft position sensor connector and engine ground. Connector & terminal (E15) No. 1 — Engine ground: 	Is the resistance more than 100 kΩ?	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between camshaft position sensor and ECM connector • Poor contact in ECM connector • Poor contact in coupling connec- tor (B21)	Go to step 2.
2	CHECK HARNESS BETWEEN CAMSHAFT POSITION SENSOR AND ECM CONNEC- TOR. Measure resistance of harness between cam- shaft position sensor connector and engine ground. Connector & terminal (E15) No. 1 — Engine ground:	Is the resistance less than 10 Ω?	Repair ground short circuit in harness between camshaft position sensor and ECM connector. NOTE: The harness between both connectors are shielded. Repair ground short cir- cuit in harness together with shield.	Go to step 3.
3	CHECK HARNESS BETWEEN CAMSHAFT POSITION SENSOR AND ECM CONNEC- TOR. Measure resistance of harness between cam- shaft position sensor connector and engine ground. Connector & terminal (E15) No. 2 — Engine ground:	Is the resistance less than 5 Ω?	Go to step 4.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between camshaft position sensor and ECM connector • Poor contact in ECM connector • Poor contact in coupling connec- tor (B21)
4	CHECK CONDITION OF CAMSHAFT POSI- TION SENSOR.	Is the camshaft position sensor installation bolt tightened securely?	Go to step 5 .	Tighten camshaft position sensor installation bolt securely.
5	 CHECK CAMSHAFT POSITION SENSOR. 1) Remove camshaft position sensor. 2) Measure resistance between connector terminals of camshaft position sensor. Terminals No. 1 - No. 2: 	Is the resistance between 1 and 4 $k\Omega?$	Repair poor con- tact in camshaft position sensor connector.	Replace camshaft position sensor. <ref. to<br="">FU(H4)-42 Cam- shaft Position Sensor.></ref.>

Engine (DIAGNOSTICS)

AN: DTC P0341 — CAMSHAFT POSITION SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM — 500002245

• DTC DETECTING CONDITION:

- Immediately at fault recognition
- TROUBLE SYMPTOM:
 - Engine stalls.
 - Failure of engine to start

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0340?	Inspect DTC P0340 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.></ref.>	Go to step 2.
2	CHECK HARNESS BETWEEN CAMSHAFT POSITION SENSOR AND ECM CONNEC- TOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from camshaft posi- tion sensor. 3) Measure resistance of harness between camshaft position sensor connector and engine ground. Connector & terminal (E15) No. 1 — Engine ground:	Is the resistance more than 100 kΩ?	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between camshaft position sensor and ECM connector • Poor contact in ECM connector • Poor contact in coupling connec- tor (B21)	Go to step 3.
3	CHECK HARNESS BETWEEN CAMSHAFT POSITION SENSOR AND ECM CONNEC- TOR. Measure resistance of harness between cam- shaft position sensor connector and engine ground. Connector & terminal (E15) No. 1 — Engine ground:	Is the resistance less than 10 Ω?	Repair ground short circuit in harness between camshaft position sensor and ECM connector. NOTE: The harness between both connectors are shielded. Repair ground short cir- cuit in harness together with shield.	Go to step 4.
4	CHECK HARNESS BETWEEN CAMSHAFT POSITION SENSOR AND ECM CONNEC- TOR. Measure resistance of harness between cam- shaft position sensor connector and engine ground. Connector & terminal (E15) No. 2 — Engine ground:	Is the resistance less than 5 Ω ?	Go to step 5 .	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between camshaft position sensor and ECM connector • Poor contact in ECM connector • Poor contact in coupling connec- tor (B21)

No.	Step	Check	Yes	No
5	CHECK CONDITION OF CAMSHAFT POSI- TION SENSOR.	Is the camshaft position sensor installation bolt tightened securely?	Go to step 6 .	Tighten camshaft position sensor installation bolt securely.
6	 CHECK CAMSHAFT POSITION SENSOR. 1) Remove camshaft position sensor. 2) Measure resistance between connector terminals of camshaft position sensor. Terminals No. 1 — No. 2: 	Is the resistance between 1 and 4 k Ω ?	Go to step 7.	Replace camshaft position sensor. <ref. to<br="">FU(H4)-42 Cam- shaft Position Sensor.></ref.>
7	CHECK CONDITION OF CAMSHAFT POSI- TION SENSOR. Turn ignition switch to OFF.	Is the camshaft position sensor installation bolt tightened securely?	Go to step 8.	Tighten camshaft position sensor installation bolt securely.
8	CHECK CAMSHAFT SPROCKET. Remove front belt cover. <ref. me(h4)-45<br="" to="">Belt Cover.></ref.>	Are camshaft sprocket teeth cracked or damaged?	Replace camshaft sprocket. <ref. to<br="">ME(H4)-51 Cam- shaft Sprocket.></ref.>	Go to step 9 .
9	CHECK INSTALLATION CONDITION OF TIMING BELT. Turn camshaft using ST, and align alignment mark on camshaft sprocket with alignment mark on timing belt cover LH. ST 499207100 CAMSHAFT SPROCKET WRENCH	Is timing belt dislocated from its proper position?	Repair installation condition of timing belt. <ref. to<br="">ME(H4)-46 Timing Belt Assembly.></ref.>	Replace camshaft position sensor. <ref. to<br="">FU(H4)-42 Cam- shaft Position Sensor.></ref.>

MEMO:

Engine (DIAGNOSTICS)

AO: DTC P0420 — CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD

S008602B46

- DTC DETECTING CONDITION:
 - Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Engine stalls.
 - Idle mixture is out of specifications.

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0130, P0133, P0136, P0139, P0037, P0301, P0302, P0303, P0304, P1130, P1131, P0031, P0032 and P0038?	Inspect the rel- evant DTC using "19. List of Diag- nostic Trouble Code (DTC) for AT Vehicles". <ref. en(h4)-<br="" to="">301 List of Diag- nostic Trouble Code (DTC) for AT Vehicles.> NOTE: In this case, it is not necessary to inspect DTC P0420.</ref.>	Go to step 2.
2	 CHECK EXHAUST SYSTEM. Check for gas leaks or air suction caused by loose or dislocated nuts and bolts, and open hole at exhaust pipes. NOTE: Check the following positions. Between cylinder head and front exhaust pipe Between front exhaust pipe and front catalytic converter Between front catalytic converter and rear catalytic converter 	Is there a fault in exhaust system?	Repair or replace exhaust system. <ref. 2.="" to=""></ref.>	Go to step 3.
3	CHECK REAR CATALYTIC CONVERTER. Separate rear catalytic converter from rear exhaust pipe.	Is there damage at rear face of rear catalyst?	Replace front catalytic converter <ref. ec(h4)-3<br="" to="">Front Catalytic Converter.> and rear catalytic con- verter <ref. to<br="">EC(H4)-6 Rear Catalytic Con- verter.>.</ref.></ref.>	Go to step 4.
4	CHECK FRONT CATALYTIC CONVERTER. Remove front catalytic converter.	Is there damage at rear face or front face of front catalyst?	Replace front catalytic con- verter. <ref. to<br="">EC(H4)-3 Front Catalytic Con- verter.></ref.>	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.

Engine (DIAGNOSTICS)

AP: DTC P0442 — EVAPORATIVE EMISSION CONTROL SYSTEM MALFUNCTION — SOUBOOL BAG

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
- Gasoline smell
 - There is a hole of more than 1.0 mm (0.04 in) dia. in evaporation system or fuel tank.

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

Engine (DIAGNOSTICS)



B2M3882
No	Ston	Check	Vas	No
1NO.			Its	
1		display?	evant DTC using "19. List of Diag- nostic Trouble Code (DTC) for AT Vehicles". <ref. en(h4)-<br="" to="">301 List of Diag- nostic Trouble Code (DTC) for AT Vehicles.></ref.>	Go to step 2.
2	CHECK FUEL FILLER CAP. 1) Turn ignition switch to OFF. 2) Check the fuel filler cap. NOTE: The DTC code is stored in memory if fuel filler cap is or was loose or if the cap chain was caught while tightening.	Is the fuel filler cap tight- ened securely?	Go to step 3.	Tighten fuel filler cap securely.
3	CHECK FUEL FILLER PIPE PACKING.	Is there any damage to the seal between fuel filler cap and fuel filler pipe?	Repair or replace fuel filler cap and fuel filler pipe. <ref. to<br="">FU(H4)-82 Fuel Filler Pipe.></ref.>	Go to step 4.
4	CHECK DRAIN VALVE. 1) Connect test mode connector. 2) Turn ignition switch to ON. 3) Operate drain valve. NOTE: Drain valve operation can also be executed using Subaru Select Monitor. For the procedure, refer to "Compulsory Valve Opera- tion Check Mode". <ref. com-<br="" en(h4)-64="" to="">pulsory Valve Operation Check Mode.></ref.>	Does drain valve produce operating sound?	Go to step 5.	Replace drain valve. <ref. to<br="">EC(H4)-17 Drain Valve.></ref.>
5	CHECK PURGE CONTROL SOLENOID VALVE. Operate purge control solenoid valve. NOTE: Purge control solenoid valve operation can also be executed using Subaru Select Moni- tor. For the procedure, refer to "Compulsory Valve Operation Check Mode". <ref. to<br="">EN(H4)-64 Compulsory Valve Operation Check Mode.></ref.>	Does purge control sole- noid valve produce operat- ing sound?	Go to step 6 .	Replace purge control solenoid valve. <ref. to<br="">EC(H4)-8 Purge Control Solenoid Valve.></ref.>
6	CHECK PRESSURE CONTROL SOLENOID VALVE. Operate pressure control solenoid valve. NOTE: Pressure control solenoid valve operation can also be executed using Subaru Select Moni- tor. For the procedure, refer to "Compulsory Valve Operation Check Mode". <ref. to<br="">EN(H4)-64 Compulsory Valve Operation Check Mode.></ref.>	Does pressure control sole- noid valve produce operat- ing sound?	Go to step 7.	Replace pressure control solenoid valve. <ref. to<br="">EC(H4)-13 Pres- sure Control Sole- noid Valve.></ref.>
7	CHECK EVAPORATIVE EMISSION CON- TROL SYSTEM LINE. Turn ignition switch to OFF.	Is there a hole of more than 1.0 mm (0.04 in) dia. on fuel line?	Repair or replace fuel line. <ref. to<br="">FU(H4)-98 Fuel Delivery, Return and Evaporation Lines.></ref.>	Go to step 8.

Na	Ctore.	Chaole	Vee	Na
NO.	Step	Check	res	NO
8	CHECK CANISTER.	Is canister damaged or is there a hole of more than 1.0 mm (0.04 in) dia. in it?	Repair or replace canister. <ref. to<br="">EC(H4)-7 Canis- ter.></ref.>	Go to step 9.
9	CHECK FUEL TANK. Remove fuel tank. <ref. fu(h4)-73="" fuel<br="" to="">Tank.></ref.>	Is fuel tank damaged or is there a hole of more than 1.0 mm (0.04 in) dia. in it?	Repair or replace fuel tank. <ref. to<br="">FU(H4)-73 Fuel Tank.></ref.>	Go to step 10 .
10	CHECK ANY OTHER MECHANICAL TROUBLE IN EVAPORATIVE EMISSION CONTROL SYSTEM.	Are there holes of more than 1.0 mm (0.04 in) dia., cracks, clogging or discon- nections of hoses or pipes in evaporative emission control system?	Repair or replace hoses or pipes.	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.

Engine (DIAGNOSTICS)

AQ: DTC P0444 — EVAPORATIVE EMISSION CONTROL SYSTEM PURGE CONTROL VALVE CIRCUIT LOW INPUT — 500602G47

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Erroneous idling

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
<u>No.</u> 1	Step CHECK OUTPUT SIGNAL FROM ECM. 1) Turn ignition switch to ON. 2) Measure voltage between ECM and chas- sis ground. Connector & terminal (B134) No. 2 (+) — Chassis ground (-):	Check Is the voltage more than 10 V?	Yes Even if MIL lights up, the circuit has returned to a nor- mal condition at this time. Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio-	No Go to step 2.
2	CHECK HARNESS BETWEEN PURGE	Is the resistance less than	ration of multiple parts. Repair ground	Go to step 3.
	 CONTROL SOLENOID VALVE AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connectors from purge control solenoid valve and ECM. 3) Measure resistance of harness between purge control solenoid valve connector and engine ground. Connector & terminal (E4) No. 2 — Engine ground: 	10 Ω?	short circuit in harness between ECM and purge control solenoid valve connector.	
3	CHECK HARNESS BETWEEN PURGE CONTROL SOLENOID VALVE AND ECM CONNECTOR. Measure resistance of harness between ECM and purge control solenoid valve of harness connector. Connector & terminal (B134) No. 2 — (E4) No. 2:	Is the resistance less than 1 Ω?	Go to step 4.	Repair open cir- cuit in harness between ECM and purge control solenoid valve connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and purge control solenoid valve connector • Poor contact in coupling connec- tor (B22)
4	CHECK PURGE CONTROL SOLENOID VALVE. 1) Remove purge control solenoid valve. 2) Measure resistance between purge control solenoid valve terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance between 10 and 100 Ω?	Go to step 5.	Replace purge control solenoid valve. <ref. to<br="">EC(H4)-8 Purge Control Solenoid Valve.></ref.>
5	CHECK POWER SUPPLY TO PURGE CON- TROL SOLENOID VALVE. 1) Turn ignition switch to ON. 2) Measure 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 open cir- cuit in harness between main relay and purge control solenoid valve connector.

No.	Step	Check	Yes	No
6	CHECK POOR CONTACT. Check poor contact in purge control solenoid valve connector.	Is there poor contact in purge control solenoid valve connector?	Repair poor con- tact in purge con- trol solenoid valve connector.	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

AR: DTC P0445 — EVAPORATIVE EMISSION CONTROL SYSTEM PURGE CONTROL VALVE CIRCUIT HIGH INPUT — 5008602G48

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Erroneous idling

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK OUTPUT SIGNAL FROM ECM. 1) Turn ignition switch to OFF. 2) Connect test mode connector at the lower portion of instrument panel (on the driver's side), to the side of the center console box. 3) Turn ignition switch to ON. 4) While operating purge control solenoid valve, measure voltage between ECM and chassis ground. NOTE: Purge control solenoid valve operation can be executed using Subaru Select Monitor. For procedure, refer to "Compulsory Valve Opera- tion Check Mode". <ref. com-<br="" en(h4)-64="" to="">pulsory Valve Operation Check Mode.> Connector & terminal (B134) No. 2 (+) — Chassis ground (-):</ref.>	Does voltage change between 0 and 10 V?	Go to step 2.	Even if MIL light up, the circuit has returned to a nor- mal condition at this time. In this case, repair poor contact in ECM connector.
2	 CHECK OUTPUT SIGNAL FROM ECM. 1) Turn ignition switch to ON. 2) Measure voltage between ECM and chassis ground. Connector & terminal (B134) No. 2 (+) — Chassis ground (-): 	Is the voltage more than 10 V?	Go to step 4.	Go to step 3.
3	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>
4	CHECK HARNESS BETWEEN PURGE CONTROL SOLENOID VALVE AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from purge control solenoid valve. 3) Turn ignition switch to ON. 4) Measure voltage between ECM and chas- sis ground. Connector & terminal (B134) No. 2 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Repair battery short circuit in harness between ECM and purge control solenoid valve connector. After repair, replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>	Go to step 5.
5	CHECK PURGE CONTROL SOLENOID VALVE. 1) Turn ignition switch to OFF. 2) Measure resistance between purge control solenoid valve terminals. Terminals No. 1 — No. 2:	Is the resistance less than 1 Ω ?	Replace purge control solenoid valve <ref. to<br="">EC(H4)-13 Purge Control Solenoid Valve.> and ECM <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.></ref.>	Go to step 6 .
6	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>

Engine (DIAGNOSTICS)

AS: DTC P0447 — EVAPORATIVE EMISSION CONTROL SYSTEM VENT CONTROL LOW INPUT — 5008002 F98

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No	Sten	Check	Ves	No
1		Le the voltage more than 10	Co to step 2	Co to step 3
	 Turn ignition switch to ON. Measure voltage between ECM and chassis ground. Connector & terminal (B134) No. 10 (+) — Chassis ground (-): 	V?	90 10 Step 2.	GU IU SIEP J .
2	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Even if MIL lights up, the circuit has returned to a nor- mal condition at this time. (However, the possibility of poor contact still remains.) NOTE: In this case, repair the follow- ing: • Poor contact in drain valve con- nector • Poor contact in ECM connector • Poor contact in coupling connec- tors (B97 and B99)
3	 CHECK HARNESS BETWEEN DRAIN VALVE AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connectors from drain valve and ECM. 3) Measure resistance of harness between drain valve connector and chassis ground. Connector & terminal (R69) No. 2 — Chassis ground: 	Is the resistance less than 10 Ω?	Repair ground short circuit in harness between ECM and drain valve connector.	Go to step 4.
4	CHECK HARNESS BETWEEN DRAIN VALVE AND ECM CONNECTOR. Measure resistance of harness between ECM and drain valve connector. Connector & terminal (B134) No. 10 — (R69) No. 2:	Is the voltage less than 1 Ω ?	Go to step 5.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and drain valve connector • Poor contact in coupling connec- tors (B99)
5	CHECK DRAIN VALVE. Measure resistance between drain valve ter- minals. Terminals No. 1 — No. 2:	Is the resistance between 10 and 100 Ω?	Go to step 6.	Replace drain valve. <ref. to<br="">EC(H4)-17 Drain Valve.></ref.>

No.	Step	Check	Yes	No
6	CHECK POWER SUPPLY TO DRAIN VALVE. 1) Turn ignition switch to ON. 2) Measure voltage between drain valve and chassis ground. Connector & terminal (R69) No. 1 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 7.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between main relay and drain valve • Poor contact in coupling connec- tors (B97) • Poor contact in main relay con- nector
7	CHECK POOR CONTACT. Check poor contact in drain valve connector.	Is there poor contact in drain valve connector?	Repair poor con- tact in drain valve connector.	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

AT: DTC P0448 — EVAPORATIVE EMISSION CONTROL SYSTEM VENT CONTROL HIGH INPUT — 5006602F99

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK OUTPUT SIGNAL FROM ECM. 1) Turn ignition switch to OFF. 2) Connect test mode connector at the lower portion of instrument panel (on the driver's side), to the side of the center console box. 3) Turn ignition switch to ON. 4) While operating drain valve, measure volt- age between ECM and chassis ground. NOTE: Drain valve operation can be excecuted using Subaru Select Monitor. For procedure, refer to "Compulsory Valve Operation Check Mode". <ref. compulsory="" en(h4)-64="" opera-<br="" to="" valve="">tion Check Mode.> Connector & terminal (B134) No. 10 (+) — Chassis ground (-):</ref.>	Does voltage change between 0 and 10 V?	Go to step 2.	Even if MIL light up, the circuit has returned to a nor- mal condition at this time. In this case, repair poor contact in ECM connector.
2	 CHECK OUTPUT SIGNAL FROM ECM. 1) Turn ignition switch to ON. 2) Measure voltage between ECM and chassis ground. Connector & terminal (B134) No. 10 (+) — Chassis ground (-): 	Is the voltage more than 10 V?	Go to step 4.	Go to step 3.
3	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>
4	 CHECK HARNESS BETWEEN DRAIN VALVE AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from drain valve. 3) Turn ignition switch to ON. 4) Measure voltage between ECM and chassis ground. Connector & terminal (B134) No. 10 (+) — Chassis ground (-): 	Is the voltage more than 10 V?	Repair battery short circuit in harness between ECM and drain valve connector. After repair, replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>	Go to step 5.
5	 CHECK DRAIN VALVE. 1) Turn ignition switch to OFF. 2) Measure resistance between drain valve terminals. Terminals No. 1 — No. 2: 	Is the resistance less than 1 Ω?	Replace drain valve <ref. to<br="">EC(H4)-17 Drain Valve.> and ECM <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.></ref.>	Go to step 6.
6	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>

Engine (DIAGNOSTICS)

AU: DTC P0451 — EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR RANGE/PERFORMANCE PROBLEM — SOUTH STATEMENT

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Is there any DTC on display?	Inspect the rel- evant DTC using "19. List of Diag- nostic Trouble Code (DTC) for AT Vehicles". <ref. en(h4)-<br="" to="">301 List of Diag- nostic Trouble Code (DTC) for AT Vehicles.></ref.>	Go to step 2.
2	CHECK FUEL FILLER CAP.1) Turn ignition switch to OFF.2) Open the fuel flap.	Is the fuel filler cap tight- ened securely?	Go to step 3.	Tighten fuel filler cap securely.
3	 CHECK PRESSURE/VACUUM LINE. NOTE: Check the following items. Disconnection, leakage and clogging of the vacuum hoses and pipes between fuel tank pressure sensor and fuel tank Disconnection, leakage and clogging of air ventilation hoses and pipes between fuel filler pipe and fuel tank 	Is there a fault in pressure/ vacuum line?	Repair or replace hoses and pipes.	Replace fuel tank pressure sensor. <ref. to<br="">EC(H4)-12 Fuel Tank Pressure Sensor.></ref.>

Engine (DIAGNOSTICS)

AV: DTC P0452 — EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR LOW INPUT — 5005022852

• DTC DETECTING CONDITION:

• Immediately at fault recognition

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	 CHECK CURRENT DATA. 1) Turn ignition switch to OFF. 2) Remove fuel filler cap. 3) Install fuel filler cap. 4) Turn ignition switch to ON. 5) Read the data of fuel tank pressure sensor signal using Subaru Select Monitor or the OBD-II general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool 	Is the value less than -2.8 kPa (-21.0 mmHg, -0.827 inHg)?	Go to step 2.	Even if MIL lights up, the circuit has returned to a nor- mal condition at this time.
2	CHECK POWER SUPPLY TO FUEL TANK PRESSURE SENSOR. Measure voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 15 (+) — Chassis ground (-):	Is the voltage more than 4.5 V?	Go to step 4 .	Go to step 3.
3	CHECK POWER SUPPLY TO FUEL TANK PRESSURE SENSOR. Measure voltage between ECM connector and chassis ground. <i>Connector & terminal</i> (B136) No. 15 (+) — Chassis ground (-):	Does the voltage change more than 4.5 V by shaking harness and connector of ECM while monitoring the value with voltage meter?	Repair poor con- tact in ECM con- nector.	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.
4	CHECK INPUT SIGNAL FOR ECM. Measure voltage between ECM and chassis ground. Connector & terminal (B136) No. 12 (+) — Chassis ground (-):	Is the voltage less than 0.2 V?	Go to step 6.	Go to step 5.
5	CHECK INPUT SIGNAL FOR ECM. (USING SUBARU SELECT MONITOR.) Read data of fuel tank pressure sensor signal using Subaru Select Monitor. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.>	Does the value change more than -2.8 kPa (-21.0 mmHg, -0.827 inHg) by shaking harness and con- nector of ECM while moni- toring the value with Subaru Select Monitor?	Repair poor con- tact in ECM con- nector.	Go to step 6 .

No.	Sten	Check	Yes	No
6		Is the voltage more than	Go to step 7	Renair harness
	 COUPLING CONNECTOR IN REAR WIRING HARNESS. 1) Turn ignition switch to OFF. 2) Remove rear seat cushion (Sedan) or move rear seat cushion (Wagon). 3) Separate rear wiring harness and fuel tank cord. 4) Turn ignition switch to ON. 5) Measure voltage between rear wiring harness connector and chassis ground. Connector & terminal (R134) No. 5 (+) — Chassis ground (-): 	4.5 V?		and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and rear wiring harness connector (R134) • Poor contact in coupling connec- tor (B99)
7	CHECK HARNESS BETWEEN ECM AND COUPLING CONNECTOR IN REAR WIRING HARNESS. 1) Turn ignition switch to OFF. 2) Disconnect connector from ECM. 3) Measure resistance of harness between ECM and rear wiring harness connector. Connector & terminal (B136) No. 16 — (R134) No. 3:	Is the resistance less than 1 Ω?	Go to step 8.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and rear wiring harness connector (R134) • Poor contact in coupling connec- tor (B99) • Poor contact in joint connector (B83)
8	CHECK HARNESS BETWEEN ECM AND COUPLING CONNECTOR IN REAR WIRING HARNESS. Measure resistance of harness between rear wiring harness connector and chassis ground. Connector & terminal (R134) No. 3 — Chassis ground:	Is the resistance more than 500 kΩ?	Go to step 9.	Repair ground short circuit in harness between ECM and rear wiring harness connector (R134).
9	 CHECK FUEL TANK CORD. 1) Disconnect connector from fuel tank pressure sensor. 2) Measure resistance of fuel tank cord. Connector & terminal (R135) No. 5 — (R47) No. 3: 	Is the resistance less than 1 Ω?	Go to step 10 .	Repair open cir- cuit in fuel tank cord.
10	CHECK FUEL TANK CORD. Measure resistance of fuel tank cord. Connector & terminal (R135) No. 3 — (R47) No. 1:	Is the resistance less than 1 Ω?	Go to step 11.	Repair open cir- cuit in fuel tank cord.
11	CHECK FUEL TANK CORD. Measure resistance of harness between fuel tank pressure sensor connector and chassis ground. Connector & terminal (R47) No. 2 — Chassis ground:	Is the resistance more than 500 kΩ?	Go to step 12.	Repair ground short circuit in fuel tank cord.
12	CHECK POOR CONTACT. Check poor contact in fuel tank pressure sen- sor connector.	Is there poor contact in fuel tank pressure sensor con- nector?	Repair poor con- tact in fuel tank pressure sensor connector.	Replace fuel tank pressure sensor. <ref. to<br="">EC(H4)-12 Fuel Tank Pressure Sensor.></ref.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

AW: DTC P0453 — EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR HIGH INPUT — 5008022853

• DTC DETECTING CONDITION:

• Immediately at fault recognition

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



Engine (DIAGNOSTICS)

	e t		X	
No.	Step	Check	Yes	No
1	CHECK CURRENT DATA.	Is the value more than 2.8	Go to step 12.	Go to step 2.
	1) Turn ignition switch to OFF.	kPa (21.0 mmHg, 0.827		
	2) Remove fuel filler cap.	inHg)?		
	3) Install fuel filler cap.			
	4) Turn ignition switch to ON.			
	5) Read data of fuel tank pressure sensor sig-			
	nal using Subaru Select Monitor or OBD-II			
	general scan tool.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure refer to the			
	"READ CURRENT DATA FOR ENGINE".			
	<ref. en(h4)-52="" monitor="" select="" subaru="" to=""></ref.>			
	OBD-II general scan tool			
	For detailed operation procedures, refer to the			
	OBD-II General Scan Tool Instruction Manual			
2	CHECK POWER SUPPLY TO FUEL TANK	Is the voltage more than	Go to step 4.	Go to step 3.
	PRESSURE SENSOR.	4.5 V?		
	Measure voltage between ECM connector			
	and chassis ground.			
	Connector & terminal			
	(B136) No. 15 (+) — Chassis ground			
	(–):			
3	CHECK POWER SUPPLY TO FUEL TANK	Does the voltage change	Repair poor con-	Replace ECM.
	PRESSURE SENSOR.	more than 4.5 V by shaking	tact in ECM con-	<ref. th="" to<=""></ref.>
	Measure voltage between ECM connector	harness and connector of	nector.	FU(H4)-67 Engine
	and chassis ground.	ECM while monitoring the		Control Module.>
	Connector & terminal	value with voltage meter?		
	(B136) No. 15 (+) — Chassis ground	_		
	(-):			
4	CHECK INPUT SIGNAL FOR ECM.	Is the voltage less than 0.2	Go to step 6.	Go to step 5.
	Measure voltage between FCM and chassis	V?		
	around.			
	Connector & terminal			
	(B136) No. 12 (+) — Chassis ground			
	(-):			
5	CHECK INPUT SIGNAL FOR FCM (USING	Does the value change	Renair noor con-	Go to step 6
ľ	SUBARU SELECT MONITOR)	more than -2.8 kPa (-21.0	tact in ECM con-	
	Pead data of fuel tank pressure sensor signal	mmHa = 0.827 inHa) by		
	using Subaru Select Monitor	shaking harness and con-		
		nector of ECM while moni-		
	Subaru Select Monitor	toring the value with		
	For detailed operation procedure, refer to the	Subaru Select Monitor?		
	"READ CURRENT DATA FOR ENGINE"			
	<pre>>Ref to EN(H4)-52 Subaru Select Monitor ></pre>			
			Cata star 7	Denein hennese
0		is the voltage more than	GO IO SIEP 7.	Repair namess
		4.5 V !		
				NOTE:
	1) Turn Ignition switch to OFF.			In this case,
	2) Remove rear seat cushion (Sedan) or			repair the follow-
	move rear seat cushion (Wagon).			ing:
	ord Separate rear wiring namess and fuel tank			Open circuit in
	COIG.			namess between
	4) Turn Ignition switch to ON.			ECIM and rear
	5) ivieasure voltage between rear wiring har-			wiring harness
	ness connector and chassis ground.			connector (R134)
	Connector & terminal			Poor contact in
	(R134) No. 5 (+) — Chassis ground (–):			coupling connec-
1				tor (B99)

EN(H4)-439

No.	Step	Check	Yes	No
7	CHECK HARNESS BETWEEN ECM AND COUPLING CONNECTOR IN REAR WIRING HARNESS. 1) Turn ignition switch to OFF. 2) Disconnect connector from ECM. 3) Measure resistance of harness between ECM and rear wiring harness connector. Connector & terminal (B136) No. 12 — (R134) No. 6:	Is the resistance less than 1 Ω?	Go to step 8.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and rear wiring harness connector (R134) • Poor contact in coupling connec- tor (B99)
8	CHECK HARNESS BETWEEN ECM AND COUPLING CONNECTOR IN REAR WIRING HARNESS. Measure resistance of harness between rear wiring harness connector and chassis ground. Connector & terminal (B136) No. 16 — (R134) No. 3:	Is the resistance less than 1 Ω?	Go to step 9 .	Repair ground short circuit in harness between ECM and rear wiring harness connector (R134).
9	 CHECK FUEL TANK CORD. 1) Disconnect connector from fuel tank pressure sensor. 2) Measure resistance of fuel tank cord. Connector & terminal (R135) No. 6 — (R47) No. 2: 	Is the resistance less than 1 Ω ?	Go to step 10.	Repair open cir- cuit in fuel tank cord.
10	CHECK FUEL TANK CORD. Measure resistance of fuel tank cord. Connector & terminal (R135) No. 3 — (R47) No. 1:	Is the resistance less than 1 Ω ?	Go to step 11.	Repair open cir- cuit in fuel tank cord.
11	CHECK POOR CONTACT. Check poor contact in fuel tank pressure sen- sor connector.	Is there poor contact in fuel tank pressure sensor con- nector?	Repair poor con- tact in fuel tank pressure sensor connector.	Replace fuel tank pressure sensor. <ref. to<br="">FU(H4)-12 Fuel Tank Pressure Sensor.></ref.>
12	CHECK HARNESS BETWEEN ECM AND FUEL TANK PRESSURE SENSOR CON- NECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from fuel tank pres- sure sensor. 3) Turn ignition switch to ON. 4) Read data of fuel tank pressure sensor sig- nal using Subaru Select Monitor or the OBD-II general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". < Ref. to EN(H4)-52 Subaru Select Monitor.> • OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool	Is the value more than 2.8 kPa (21.0 mmHg, 0.827 inHg)?	Repair battery short circuit in harness between ECM and fuel tank pressure sensor connector.	Replace fuel tank pressure sensor. <ref. to<br="">FU(H4)-12 Fuel Tank Pressure Sensor.></ref.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

AX: DTC P0456 — EVAPORATIVE EMISSION CONTROL SYSTEM MALFUNCTION — SOURCE CONTROL SYSTEM

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
- Gasoline smell
 - There is a hole of more than 0.5 mm (0.020 in) dia. in evaporation system or fuel tank.

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

Engine (DIAGNOSTICS)



B2M3882

			1	
No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Is there any other DTC on display?	Inspect the rel- evant DTC using "19. List of Diag- nostic Trouble Code (DTC) for AT Vehicles". <ref. en(h4)-<br="" to="">301 List of Diag- nostic Trouble Code (DTC) for AT Vehicles.></ref.>	Go to step 2.
2	CHECK FUEL FILLER CAP. 1) Turn ignition switch to OFF. 2) Check the fuel filler cap. NOTE: The DTC code is stored in memory if fuel filler cap is or was loose or if the cap chain was caught while tightening.	Is the fuel filler cap tight- ened securely?	Go to step 3.	Tighten fuel filler cap securely.
3	CHECK FUEL FILLER PIPE PACKING.	Is there any damage to the seal between fuel filler cap and fuel filler pipe?	Repair or replace fuel filler cap and fuel filler pipe. <ref. to<br="">FU(H4)-82 Fuel Filler Pipe.></ref.>	Go to step 4.
4	CHECK DRAIN VALVE. 1) Connect test mode connector. 2) Turn ignition switch to ON. 3) Operate drain valve. NOTE: Drain valve operation can also be executed using Subaru Select Monitor. For the procedure, refer to "Compulsory Valve Opera- tion Check Mode". <ref. com-<br="" en(h4)-64="" to="">pulsory Valve Operation Check Mode.></ref.>	Does drain valve produce operating sound?	Go to step 5.	Replace drain valve. <ref. to<br="">EC(H4)-17 Drain Valve.></ref.>
5	CHECK PURGE CONTROL SOLENOID VALVE. Operate purge control solenoid valve. NOTE: Purge control solenoid valve operation can also be executed using Subaru Select Moni- tor. For the procedure, refer to "Compulsory Valve Operation Check Mode". <ref. to<br="">EN(H4)-64 Compulsory Valve Operation Check Mode.></ref.>	Does purge control sole- noid valve produce operat- ing sound?	Go to step 6 .	Replace purge control solenoid valve. <ref. to<br="">EC(H4)-8 Purge Control Solenoid Valve.></ref.>
6	CHECK PRESSURE CONTROL SOLENOID VALVE. Operate pressure control solenoid valve. NOTE: Pressure control solenoid valve operation can also be executed using Subaru Select Moni- tor. For the procedure, refer to "Compulsory Valve Operation Check Mode". <ref. to<br="">EN(H4)-64 Compulsory Valve Operation Check Mode.></ref.>	Does pressure control sole- noid valve produce operat- ing sound?	Go to step 7.	Replace pressure control solenoid valve. <ref. to<br="">EC(H4)-13 Pres- sure Control Sole- noid Valve.></ref.>
7	CHECK EVAPORATIVE EMISSION CON- TROL SYSTEM LINE. Turn ignition switch to OFF.	Is there a hole of more than 0.5 mm (0.020 in) dia. on fuel line?	Repair or replace fuel line. <ref. to<br="">FU(H4)-98 Fuel Delivery, Return and Evaporation Lines.></ref.>	Go to step 8.

No	Ston	Chaok	Vac	No
NO.	Step	Спеск	res	NO
8	CHECK CANISTER.	Is canister damaged or is there a hole of more than 0.5 mm (0.020 in) dia. in it?	Repair or replace canister. <ref. to<br="">EC(H4)-7 Canis- ter.></ref.>	Go to step 9.
9	CHECK FUEL TANK. Remove fuel tank. <ref. fu(h4)-73="" fuel<br="" to="">Tank.></ref.>	Is fuel tank damaged or is there a hole of more than 0.5 mm (0.020 in) dia. in it?	Repair or replace fuel tank. <ref. to<br="">FU(H4)-73 Fuel Tank.></ref.>	Go to step 10 .
10	CHECK ANY OTHER MECHANICAL TROUBLE IN EVAPORATIVE EMISSION CONTROL SYSTEM.	Are there holes of more than 0.5 mm (0.020 in) dia., cracks, clogging or disconnections of hoses or pipes in evaporative emis- sion control system?	Repair or replace hoses or pipes.	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.

Engine (DIAGNOSTICS)

AY: DTC P0461 — FUEL LEVEL SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM — 500602054

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0462 or P0463?	Inspect DTC P0462 or P0463 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.> NOTE: In this case, it is not necessary to inspect this trouble.</ref.>	Replace fuel level sensor <ref. to<br="">EC(H4)-9 Main Fuel Level Sen- sor.> and fuel sub level sensor <ref. to FU(H4)-94 Fuel Sub Level Sen- sor.>.</ref. </ref.>

Engine (DIAGNOSTICS)

AZ: DTC P0462 — FUEL LEVEL SENSOR CIRCUIT LOW INPUT — S006602855

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK SPEEDOMETER AND TACHOM- ETER OPERATION IN COMBINATION METER.	Does speedometer and tachometer operate nor- mally?	Go to step 2.	Repair or replace combination meter. <ref. to<br="">IDI-4 Combination Meter System.></ref.>

No.	Step	Check	Yes	No
2	CHECK INPUT SIGNAL FOR ECM.	Is the voltage less than	Go to step 6.	Go to step 3.
	1) Turn ignition switch to ON. (Engine OFF)	0.12 V?		
	2) Measure voltage between ECM connector			
	and chassis ground.			
	(B136) No 27 (+) — Chassis ground			
	(-);			
3	CHECK INPUT SIGNAL FOR ECM. (USING	Does the value change	Repair poor con-	Even if MIL lights
	SUBARU SELECT MONITOR.) Read data of fuel level sensor signal using Subaru Select Monitor. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.>	less than 0.12 V by shak- ing harness and connector of ECM while monitoring the value with Subaru Select Monitor?	tact in ECM con- nector.	up, the circuit has returned to a nor- mal condition at this time. A tem- porary poor con- tact of the con- nector may be the cause. NOTE: In this case, repair the follow- ing: • Poor contact in combination meter connector • Poor contact in
				ECM connector • Poor contact in coupling connec- tors (B99)
4	CHECK INPUT VOLTAGE OF ECM.	Is the voltage more than	Go to step 4.	Go to step 7.
	 Turn ignition switch to OFF. Separate fuel tank cord connector (R57) and rear wiring harness connector (R15). Turn ignition switch to ON. Measure voltage of harness between ECM connector and chassis ground. Connector & terminal (B136) No. 27 (+) — Chassis ground (-): 	0.12 V?		
5	CHECK HARNESS BETWEEN ECM AND	Is the resistance more than	Go to step 6.	Repair ground
	 COMBINATION METER. 1) Turn ignition switch to OFF. 2) Disconnect connector from connector (i10) and ECM connector. 3) Measure resistance between ECM and chassis ground. Connector & terminal (B136) No. 27 — Chassis ground: 	1 ΜΩ?		short circuit in harness between ECM and combi- nation meter con- nector.
6	CHECK HARNESS BETWEEN ECM AND	Is the resistance less than	Repair or replace	Repair open cir-
	COMBINATION METER. Measure resistance between ECM and combi- nation meter connector. Connector & terminal (B136) No. 27 — (i10) No. 3:	10 Ω?	combination meter. <ref. to<br="">IDI-4 Combination Meter System.></ref.>	cuit between ECM and combination meter connector. NOTE: In this case, repair the follow- ing: Poor contact in coupling connec-
				tor (R98)

No.	Step	Check	Yes	No
7	 CHECK FUEL TANK CORD. 1) Turn ignition switch to OFF. 2) Disconnect connector from fuel sub level sensor. 3) Measure resistance between fuel sub level sensor and chassis ground. Connector & terminal (R59) No. 1 — Chassis ground: 	Is the resistance more than 1 MΩ?	Go to step 8.	Repair ground short circuit in fuel tank cord.
8	 CHECK FUEL TANK CORD. 1) Disconnect connector from fuel pump assembly. 2) Measure resistance between fuel pump assembly and chassis ground. Connector & terminal (R59) No. 2 — Chassis ground: 	Is the resistance more than 1 MΩ?	Go to step 9 .	Repair ground short circuit in fuel tank cord.
9	CHECK FUEL LEVEL SENSOR. WARNING: During work procedures, if fuel tank is more than 3/4 full, be careful because fuel may spill. 1) Remove fuel pump assembly. <ref. to<br="">FU(H4)-90 Fuel Pump.> 2) Measure resistance between fuel level sen- sor and terminals with its float set to the full position. <i>Terminals</i> <i>No. 3 — No. 6:</i></ref.>	Is the resistance between 0.5 and 2.5 Ω?	Go to step 10.	Replace fuel level sensor.
10	CHECK FUEL SUB LEVLE SENSOR. WARNING: During work procedures, if fuel tank is more than 3/4 full, be careful because fuel may spill. 1) Remove fuel sub level sensor. < Ref. to FU(H4)-94 Fuel Sub Level Sensor.> 2) Measure resistance between fuel sub level sensor and terminals with its float set to the full position. Terminals No. 1 — No. 2:	Is the resistance between 0.5 and 2.5 Ω?	Repair poor con- tact in harness between ECM and combination meter connector.	Replace fuel sub level sensor.

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

BA: DTC P0463 — FUEL LEVEL SENSOR CIRCUIT HIGH INPUT — SUBBOLEDE

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK SPEEDOMETER AND TACHOM- ETER OPERATION IN COMBINATION METER.	Does speedometer and tachometer operate nor- mally?	Go to step 2.	Repair or replace combination meter. <ref. to<br="">IDI-4 Combination Meter System.></ref.>

No.	Step	Check	Yes	No
2	CHECK INPUT SIGNAL FOR ECM. 1) Turn ignition switch to ON. (Engine OFF) 2) Measure voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 27 (+) — Chassis ground (-):	Is the voltage more than 4.75 V?	Go to step 3.	Even if MIL lights up, the circuit has returned to a nor- mal condition at this time. A tem- porary poor con- tact of the con- nector may be the cause. NOTE: In this case, repair the follow- ing: • Poor contact in fuel pump con- nector • Poor contact in coupling connec- tor (B22, R98 and R57)
3	 CHECK INPUT VOLTAGE OF ECM. 1) Turn ignition switch to OFF. 2) Disconnect combination meter connector (i10) and ECM connector. 3) Turn ignition switch to ON. 4) Measure voltage of harness between ECM and chassis ground. Connector & terminal (B136) No. 27 (+) — Chassis ground (-): 	Is the voltage more than 4.75 V?	Go to step 4.	Repair battery short circuit between ECM and combination meter connector.
4	 CHECK HARNESS BETWEEN ECM AND FUEL TANK CORD. 1) Turn ignition switch to OFF. 2) Separate fuel tank cord connector (R57) and rear wiring harness connector (R15). 3) Measure resistance between ECM and fuel tank cord. Connector & terminal (B136) No. 27 — (R15) No. 6: 	Is the resistance less than 5 Ω ?	Go to step 5.	Repair open cir- cuit between ECM and fuel tank cord.
5	CHECK HARNESS BETWEEN FUEL TANK CORD AND CHASSIS GROUND. Measure resistance between fuel tank cord and chassis ground. Connector & terminal (R15) No. 5 — Chassis ground:	Is the resistance less than 5 Ω ?	Go to step 6 .	Repair open cir- cuit between fuel tank cord and chassis ground. NOTE: In this case, repair the follow- ing: Poor contact in coupling connec- tors (B22 and B99)
6	 CHECK FUEL TANK CORD. 1) Disconnect connector from fuel level sensor. 2) Measure resistance between fuel level sensor and coupling connector. Connector & terminal (R57) No. 5 — (R58) No. 3: 	Is the resistance less than 10 Ω ?	Go to step 7 .	Repair open cir- cuit between cou- pling connector and fuel level sen- sor.
No.	Step	Check	Yes	No
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7	 CHECK FUEL TANK CORD. 1) Disconnect connector from fuel sub level sensor. 2) Measure resistance between fuel level sensor and fuel sub level sensor. Connector & terminal (R58) No. 6 — (R59) No. 2: 	Is the resistance less than 10 Ω?	Go to step 8.	Repair open cir- cuit between fuel level sensor and fuel sub level sen- sor.
8	CHECK FUEL TANK CORD. Measure resistance between fuel sub level sensor and coupling connector. Connector & terminal (R57) No. 6 — (R59) No. 1:	Is the resistance less than 10 Ω ?	Go to step 9 .	Repair open cir- cuit between cou- pling connector and fuel sub level sensor.
9	CHECK FUEL LEVEL SENSOR. WARNING: During work procedures, if fuel tank is more than 3/4 full, be careful because fuel may spill. 1) Remove fuel pump assembly. <ref. to<br="">FU(H4)-90 Fuel Pump.> 2) While moving fuel level sensor float up and down, measure resistance between fuel level sensor terminals. <i>Terminals</i> <i>No. 3 — No. 6:</i></ref.>	Is the resistance more than 54.5 Ω?	Replace fuel level sensor. <ref. to<br="">FU(H4)-93 Fuel Level Sensor.></ref.>	Go to step 10.
10	CHECK FUEL SUB LEVEL SENSOR. WARNING: During work procedures, if fuel tank is more than 3/4 full, be careful because fuel may spill. 1) Remove fuel sub level sensor. <ref. to<br="">FU(H4)-94 Fuel Sub Level Sensor.> 2) While moving fuel sub level sensor float up and down, measure resistance between fuel sub level sensor terminals. Terminals No. 1 — No. 2:</ref.>	Is the resistance more than 41.5 Ω?	Replace fuel sub level sensor. <ref. to<br="">FU(H4)-94 Fuel Sub Level Sen- sor.></ref.>	Replace combina- tion meter. <ref. to IDI-17 Combi- nation Meter Assembly.></ref.

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

BB: DTC P0464 — FUEL LEVEL SENSOR INTERMITTENT INPUT SOURCE SOURCE SOURCE STATEMENT INPUT

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0462 or P0463?	Inspect DTC P0462 or P0463 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.></ref.>	Go to step 2 .
2	CHECK FUEL LEVEL SENSOR. WARNING: During work procedures, if fuel tank is more than 3/4 full, be careful because fuel may spill. 1) Remove fuel pump assembly. <ref. to<br="">FU(H4)-90 Fuel Pump.> 2) While moving fuel level sensor float up and down, make sure that the resistance between fuel level sensro terminals changes smoothly. <i>Terminals</i> <i>No. 3 — No. 6:</i></ref.>	Does the resistance change smoothly?	Go to step 3.	Replace fuel level sensor. <ref. to<br="">FU(H4)-93 Fuel Level Sensor.></ref.>
3	CHECK FUEL SUB LEVEL SENSOR. WARNING: During work procedures, if fuel tank is more than 3/4 full, be careful because fuel may spill. 1) Remove fuel sub level sensor. <ref. to<br="">FU(H4)-94 Fuel Sub Level Sensor.> 2) While moving fuel sub level sensor float up and down, make sure that the resistance between fuel level sensro terminals changes smoothly. Terminals No. 1 — No. 2:</ref.>	Does the resistance change smoothly?	Repair poor con- tact in ECM, com- bination meter and coupling con- nectors.	Replace fuel sub level sensor. <ref. to<br="">FU(H4)-94 Fuel Sub Level Sen- sor.></ref.>

Engine (DIAGNOSTICS)

BC: DTC P0480 — COOLING FAN RELAY 1 CIRCUIT LOW INPUT — SOUBCOZED57

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Radiator fan does not operate properly.
 - Overheating

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

Engine (DIAGNOSTICS)

WIRING DIAGRAM:



B2M3939

01 02 P1 P2

No	Sten	Check	Yes	No
1		Does voltage change	Repair poor con-	Go to step 2
l'	1) Turn ignition switch to OFF	between 0 and 10 V?	tact in FCM con-	00 to step 2.
	2) Connect test mode connector at the lower		nector.	
	portion of instrument panel (on the driver's			
	side), to the side of the center console box.			
	3) Turn ignition switch to ON.			
	4) While operating radiator fan relay, measure			
	voltage between ECM terminal and ground.			
	NOTE:			
	Radiator fan relay operation can be executed			
	using Subaru Select Monitor. For procedure,			
	refer to "Compulsory valve Operation Check			
	Mode . <rei. 10="" en(h4)-52="" select<="" subaru="" th=""><th></th><th></th><th></th></rei.>			
	Connector & terminal			
	(B134) No $3(+)$ — Chassis ground (-):			
2		Is the resistance less than	Repair ground	Go to step 3
1	RADIATOR FAN REI AY 1 CONTROL CIR-		short circuit in	Gu iu siep 3 .
	CUIT.	10 12.	radiator fan relav	
	1) Turn ignition switch to OFF.		1 control circuit.	
	2) Disconnect connectors from ECM.			
	3) Measure resistance of harness between			
	ECM connector and chassis ground.			
	Connector & terminal			
	(B134) No. 3 — Chassis ground:			
3	CHECK POWER SUPPLY FOR RELAY.	Is the voltage more than 10	Go to step 4.	Repair open cir-
	1) Remove main fan relay from A/C relay	V?		cuit in harness
	holder.			between ignition
	2) Turn ignition switch to ON. 2) Measure veltage between fuse and relay			switch and fuse
	box (E/B) connector and chassis around			(F/B) connector
	Connector & terminal			
	(F66) No. 5 (+) — Chassis ground (–):			
4	CHECK MAIN FAN RELAY.	Is the resistance between	Go to step 5.	Replace main fan
	1) Turn ignition switch to OFF.	87 and 107 Ω?		relay.
	2) Measure resistance between main fan			
	relay terminals.			
	Terminal			
	No. 5 — No. 6:			
5	CHECK OPEN CIRCUIT IN MAIN FAN	Is the resistance less than	Go to step 6.	Repair harness
	RELAY CONTROL CIRCUIT.	1 Ω?		and connector.
	Measure resistance of harness between ECM			NOTE:
	and main fan relay connector.			In this case,
	(B134) No. 3 — (E66) No. 6:			ing.
	(B134) No. $3 - (100)$ No. $0.$			• Open circuit in
				harness between
				ECM and main
				fan relay connec-
				tor
				 Poor contact in
				coupling connec-
				tor (F45)
6	CHECK POOR CONTACT.	Is there poor contact in	Repair poor con-	Contact with SOA
	Check poor contact in ECM or main fan relay	ECM or main fan relay con-	tact in ECM or	service.
	connector.	nector?	main fan relay	

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

BD: DTC P0483 — COOLING FAN FUNCTION PROBLEM — SOURCE SOUR

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• TROUBLE SYMPTOM:

- Occurrence of noise
- Overheating

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

NOTE:

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

Engine (DIAGNOSTICS)

• WIRING DIAGRAM:



B2M3939

01 02 P1 P2

No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Is there any other DTC on display?	Inspect the rel- evant DTC using "19. List of Diag- nostic Trouble Code (DTC) for AT Vehicles". <ref. en(h4)-<br="" to="">301 List of Diag- nostic Trouble Code (DTC) for AT Vehicles.></ref.>	Check radiator fan and fan motor. <ref. to<br="">CO(H4)-22 INSPECTION, Radiator Main Fan and Fan Motor.> and <ref. to CO(H4)-24 INSPECTION, Radiator Sub Fan and Fan Motor.></ref. </ref.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

BE: DTC P0500 — VEHICLE SPEED SENSOR MALFUNCTION — SUBSCIENCE

• DTC DETECTING CONDITION:

• Immediately at fault recognition

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK DTC P0720 ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0720?	Check front vehicle speed sensor signal cir- cuit. <ref. to<br="">AT-56 TROUBLE CODE 33 — FRONT VEHICLE SPEED SENSOR —, Diagnostic Procedure with Trouble Code.></ref.>	Go to step 2.
2	CHECK SPEEDOMETER OPERATION IN COMBINATION METER.	Does speedometer operate normally?	Go to step 3.	Check speedom- eter and vehicle speed sensor. <ref. idi-19<br="" to="">Speedometer.> and <ref. to<br="">AT-31 Front and Rear Vehicle Speed Sensor, Torque Converter Turbine Speed Sensor and Har- ness Assembly.></ref.></ref.>
3	CHECK HARNESS BETWEEN ECM AND COMBINATION METER CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from combination meter. 3) Measure resistance between ECM and combination meter. Connector & terminal (B135) No. 24 — (i10) No. 13:	Is the resistance less than 10 Ω?	Repair poor con- tact in ECM con- nector.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and combi- nation meter con- nector • Poor contact in ECM connector • Poor contact in combination meter connector • Poor contact in combination meter connector • Poor contact in coupling connec- tor (B36)

Engine (DIAGNOSTICS)

BF: DTC P0506 — IDLE CONTROL SYSTEM RPM LOWER THAN EXPECTED

S008602B61

- DTC DETECTING CONDITION:
 - Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Engine is difficult to start.
 - Engine does not start.
 - Erroneous idling
 - Engine stalls.

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P1510, P1511, P1512, P1513, P1514, P1515, P1516 or P1517?	Inspect DTC P1510, P1511, P1512, P1513, P1514, P1515, P1516 or P1517 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.> NOTE: In this case, it is not necessary to inspect DTC P0506.</ref.>	Go to step 2.
2	 CHECK AIR BY-PASS LINE. 1) Turn ignition switch to OFF. 2) Remove idle air control solenoid valve from throttle body. <ref. air="" at="" control="" fu(h4)-53="" idle="" removal,="" solenoid="" to="" valve.="" vehicles,=""></ref.> 3) Remove throttle body from intake manifold. <ref. at="" body.="" fu(h4)-17="" removal,="" throttle="" to="" vehicles,=""></ref.> 4) Using an air gun, force air into idle air control solenoid valve installation area. Confirm that forced air subsequently escapes from throttle body interior. 	Does air flow out?	Replace idle air control solenoid valve. <ref. to<br="">FU(H4)-54 AT VEHICLES, INSTALLATION, Idle Air Control Solenoid Valve.></ref.>	Replace throttle body. <ref. to<br="">FU(H4)-17 AT VEHICLES, INSTALLATION, Throttle Body.></ref.>

Engine (DIAGNOSTICS)

BG: DTC P0507 — IDLE CONTROL SYSTEM RPM HIGHER THAN EXPECTED

S008602B62

- DTC DETECTING CONDITION:
 - Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Engine keeps running at higher revolution than specified idling revolution.

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P1510, P1511, P1512, P1513, P1514, P1515, P1516 or P1517?	Inspect DTC P1510, P1511, P1512, P1513, P1514, P1515, P1516 or P1517 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.> NOTE: In this case, it is not necessary to inspect DTC P0507.</ref.>	Go to step 2.
2	 CHECK AIR INTAKE SYSTEM. 1) Turn ignition switch to ON. 2) Start engine, and idle it. 3) Check the following items. Loose installation of intake manifold, idle air control solenoid valve and throttle body Cracks of intake manifold gasket, idle air control solenoid valve gasket and throttle body gasket Disconnections of vacuum hoses 	Is there a fault in air intake system?	Repair air suction and leaks.	Go to step 3.
3	CHECK THROTTLE CABLE.	Does throttle cable have play for adjustment?	Go to step 4.	Adjust throttle cable. <ref. to<br="">SP(H4)-6 INSTALLATION, Accelerator Con- trol Cable.></ref.>
4	 CHECK AIR BY-PASS LINE. 1) Turn ignition switch to OFF. 2) Remove idle air control solenoid valve from throttle body. <ref. at<="" fu(h4)-53="" li="" to=""> VEHICLES, REMOVAL, Idle Air Control Solenoid Valve.> 3) Confirm that there are no foreign particles in by-pass air line. </ref.>	Are foreign particles in by- pass air line?	Remove foreign particles from by- pass air line.	Replace idle air control solenoid valve. <ref. to<br="">FU(H4)-53 Idle Air Control Solenoid Valve.></ref.>

Engine (DIAGNOSTICS)

BH: DTC P0512 — STARTER SWITCH CIRCUIT HIGH INPUT — SOUBCOLGOZ

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Failure of engine to start

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK OPERATION OF STARTER MOTOR. NOTE: Place the inhibitor switch in each position.	Does starter motor operate when ignition switch to "ON"?	Repair battery short circuit in starter motor cir- cuit. After repair, replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>	Check starter motor circuit. <ref. to<br="">EC(H4)-77 Diag- nostics for Engine Starting Failure.></ref.>

Engine (DIAGNOSTICS)

BI: DTC P0604 — INTERNAL CONTROL MODULE MEMORY CHECK SUM

ERROR — S008602G03

- DTC DETECTING CONDITION:
 - Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Engine does not start.
 - Engine stalls.

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0601?	Replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>	It is not necessary to inspect DTC P0601.

Engine (DIAGNOSTICS)

BJ: DTC P0703 — BRAKE SWITCH INPUT MALFUNCTION — SOUBCOLEGA

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK OPERATION OF BRAKE LIGHT.	Does brake light come on when depressing the brake pedal?	Go to step 2.	Repair or replace brake light circuit.

No.	Step	Check	Yes	No
2	CHECK HARNESS BETWEEN TCM AND BRAKE LIGHT SWITCH CONNECTOR. 1) Disconnect connectors from TCM and brake light switch. 2) Measure resistance of harness between TCM and brake light switch connector. Connector & terminal (B55) No. 24 — (B64) No. 2: (B55) No. 24 — (B65) No. 3 (With cruise control):	Is the resistance less than 1 Ω?	Go to step 3.	Repair or replace harness and con- nector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between TCM and brake light switch con- nector • Poor contact in TCM connector • Poor contact in brake light switch connector
3	CHECK HARNESS BETWEEN TCM AND BRAKE LIGHT SWITCH CONNECTOR. Measure resistance of harness between TCM and chassis ground. Connector & terminal (B55) No. 24 — Chassis ground:	Is the resistance more than 1 MΩ?	Go to step 4.	Repair ground short circuit in harness between TCM and brake light switch con- nector.
4	 CHECK INPUT SIGNAL FOR TCM. 1) Connect connectors to TCM and brake light switch. 2) Measure voltage between TCM and chassis ground. Connector & terminal (B55) No. 24 (+) — Chassis ground (-): 	Is the voltage less than 1 V when releasing the brake pedal?	Go to step 5 .	Adjust or replace brake light switch. <ref. li-19<br="" to="">STOP LIGHT SWITCH, INSPECTION, Stop Light Sys- tem.></ref.>
5	CHECK INPUT SIGNAL FOR TCM. Measure voltage between TCM and chassis ground. Connector & terminal (B55) No. 24 (+) — Chassis ground (–):	Is the voltage more than 10 V when depressing the brake pedal?	Go to step 6.	Adjust or replace brake light switch. <ref. li-19<br="" to="">STOP LIGHT SWITCH, INSPECTION, Stop Light Sys- tem.></ref.>
6	CHECK POOR CONTACT. Check poor contact in TCM connector.	Is there poor contact in TCM connector?	Repair poor con- tact in TCM con- nector.	Replace TCM. <ref. at-42<br="" to="">Transmission Control Module.></ref.>

Engine (DIAGNOSTICS)

BK: DTC P0705 — TRANSMISSION RANGE SENSOR CIRCUIT MALFUNCTION — 5008602705

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Starter does not rotate when selector lever is in "P" or "N" range.
 - Starter rotates when selector lever is in "R", "D", "3", "2" or "1" range.
 - Engine brake is not effected when selector lever is in "3" range.
 - Shift characteristics are erroneous.

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

NOTE:

Check inhibitor switch circuit. <Ref. to AT-124 CHECK INHIBITOR SWITCH, Diagnostic Procedure for No-Trouble Code.>

BL: DTC P0710 — TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT MALFUNCTION — SOUBCOLEG

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• TROUBLE SYMPTOM:

- No shift up to 4th speed (after engine warm-up)
- No lock-up (after engine warm-up)
- Excessive shift shock

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

NOTE:

Check ATF temperature sensor circuit. <Ref. to AT-44 TROUBLE CODE 27 — ATF TEMPERATURE SEN-SOR —, Diagnostic Procedure with Trouble Code.>

BM: DTC P0715 — TORQUE CONVERTER TURBINE SPEED SENSOR CIRCUIT MALFUNCTION — SOUBCE DE7

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

NOTE:

Check torque converter turbine speed sensor circuit. <Ref. to AT-62 TROUBLE CODE 36 — TORQUE CONVERTER TURBINE SPEED SENSOR —, Diagnostic Procedure with Trouble Code.>

Engine (DIAGNOSTICS)

BN: DTC P0720 — OUTPUT SPEED SENSOR (VEHICLE SPEED SENSOR 2) CIRCUIT MALFUNCTION — SOUBCE BEB

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - No shift or excessive tight corner "braking"

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

NOTE:

Check front vehicle speed sensor circuit. <Ref. to AT-56 TROUBLE CODE 33 — FRONT VEHICLE SPEED SENSOR —, Diagnostic Procedure with Trouble Code.>

BO: DTC P0725 — ENGINE SPEED INPUT CIRCUIT MALFUNCTION — SOURCE SPEED

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

- TROUBLE SYMPTOM:
 - No lock-up (after engine warm-up)
 - AT diagnostic indicator light (AT OIL TEMP indicator light) remains on when vehicle speed is "0".

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

NOTE:

Check engine speed input signal circuit. <Ref. to AT-40 TROUBLE CODE 11 — ENGINE SPEED SIGNAL —, Diagnostic Procedure with Trouble Code.>

BP: DTC P0731 — GEAR 1 INCORRECT RATIO — SOUBCO2BTO

NOTE:

For the diagnostic procedure, refer to DTC P0734. <Ref. to EN(H4)-480 DTC P0734 — GEAR 4 INCOR-RECT RATIO —, Diagnostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.>

BQ: DTC P0732 — GEAR 2 INCORRECT RATIO — S008602B71

NOTE:

For the diagnostic procedure, refer to DTC P0734. <Ref. to EN(H4)-480 DTC P0734 — GEAR 4 INCOR-RECT RATIO —, Diagnostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.>

BR: DTC P0733 — GEAR 3 INCORRECT RATIO — SOUBCO2B72

NOTE:

For the diagnostic procedure, refer to DTC P0734. <Ref. to EN(H4)-480 DTC P0734 — GEAR 4 INCOR-RECT RATIO —, Diagnostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.>

Engine (DIAGNOSTICS)

BS: DTC P0734 — GEAR 4 INCORRECT RATIO — SOUBCOLET3

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

• TROUBLE SYMPTOM:

• Shift point too high or too low; engine brake not effected in "3" range; excessive shift shock; excessive tight corner "braking"

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Is there any other DTC on display?	Inspect relevant DTC using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.></ref.>	Go to step 2.
2	CHECK THROTTLE POSITION SENSOR CIRCUIT. Check throttle position sensor circuit. <ref. to<br="">AT-48 TROUBLE CODE 31 — THROTTLE POSITION SENSOR —, Diagnostic Proce- dure with Trouble Code.></ref.>	Is there any trouble in throttle position sensor cir- cuit?	Repair or replace throttle position sensor circuit.	Go to step 3.
3	CHECK FRONT VEHICLE SPEED SENSOR CIRCUIT. Check front vehicle speed sensor circuit. <ref. 33="" at-56="" code="" to="" trouble="" —<br="">FRONT VEHICLE SPEED SENSOR —, Diag- nostic Procedure with Trouble Code.></ref.>	Is there any trouble in vehicle speed sensor 2 cir- cuit?	Repair or replace vehicle speed sensor 2 circuit.	Go to step 4.
4	CHECK TORQUE CONVERTER TURBINE SPEED SENSOR CIRCUIT. Check torque converter turbine speed sensor circuit. <ref. 36="" at-62="" code="" to="" trouble="" —<br="">TORQUE CONVERTER TURBINE SPEED SENSOR —, Diagnostic Procedure with Trouble Code.></ref.>	Is there any trouble in torque converter turbine speed sensor circuit?	Repair or replace torque converter turbine speed sensor circuit.	Go to step 5.
5	CHECK POOR CONTACT. Check poor contact in TCM connector.	Is there poor contact in TCM connector?	Repair poor con- tact in TCM con- nector.	Go to step 6 .
6	CHECK MECHANICAL TROUBLE. Check mechanical trouble in automatic trans- mission.	Is there any mechanical trouble in automatic trans- mission?	Repair or replace automatic trans- mission. <ref. to<br="">AT-11 INSPECTION, Road Test.></ref.>	Replace TCM. <ref. at-42<br="" to="">Transmission Control Module (TCM).></ref.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

BT: DTC P0741 — TORQUE CONVERTER CLUTCH SYSTEM MALFUNCTION

S008602G04

- DTC DETECTING CONDITION:
 - Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - No lock-up (after engine warm-up)
 - No shift or excessive tight corner "braking"

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Is there any other DTC on display?	Inspect the rel- evant DTC using "19. List of Diag- nostic Trouble Code (DTC) for AT Vehicles". <ref. en(h4)-<br="" to="">301 List of Diag- nostic Trouble Code (DTC) for AT Vehicles.></ref.>	Go to step 2.
2	CHECK LOCK-UP DUTY SOLENOID CIR- CUIT. Check lock-up duty solenoid circuit. <ref. to<br="">AT-102 TROUBLE CODE 77 — LOCK-UP DUTY SOLENOID —, Diagnostic Procedure with Trouble Code.></ref.>	Is there any trouble in lock-up duty solenoid cir- cuit?	Repair or replace lock-up duty sole- noid circuit.	Go to step 3.
3	CHECK THROTTLE POSITION SENSOR CIRCUIT. Check throttle position sensor circuit. <ref. to<br="">AT-48 TROUBLE CODE 31 — THROTTLE POSITION SENSOR —, Diagnostic Proce- dure with Trouble Code.></ref.>	Is there any trouble in throttle position sensor cir- cuit?	Repair or replace throttle position sensor circuit.	Go to step 4.
4	CHECK TORQUE CONVERTER TURBINE SPEED SENSOR CIRCUIT. Check torque converter turbine speed sensor circuit. <ref. 36="" at-62="" code="" to="" trouble="" —<br="">TORQUE CONVERTER TURBINE SPEED SENSOR —, Diagnostic Procedure with Trouble Code.></ref.>	Is there any trouble in torque converter turbine speed sensor circuit?	Repair or replace torque converter turbine speed sensor circuit.	Go to step 5.
5	CHECK ENGINE SPEED INPUT CIRCUIT. Check engine speed input circuit. <ref. to<br="">AT-40 TROUBLE CODE 11 — ENGINE SPEED SIGNAL —, Diagnostic Procedure with Trouble Code.></ref.>	Is there any trouble in engine speed input circuit?	Repair or replace engine speed input circuit.	Go to step 6 .
6	CHECK INHIBITOR SWITCH CIRCUIT. Check inhibitor switch circuit. <ref. at-124<br="" to="">CHECK INHIBITOR SWITCH, Diagnostic Pro- cedure for No-trouble Code.></ref.>	Is there any trouble in inhibitor switch circuit?	Repair or replace inhibitor switch circuit.	Go to step 7.
7	CHECK BRAKE LIGHT SWITCH CIRCUIT. Check brake light switch circuit. <ref. to<br="">AT-122 CHECK BRAKE SWITCH, Diagnostic Procedure for No-trouble Code.></ref.>	Is there any trouble in brake light switch circuit?	Repair or replace brake light switch circuit.	Go to step 8.

No.	Step	Check	Yes	No
8	CHECK ATF TEMPERATURE SENSOR CIR- CUIT. Check ATF temperature sensor circuit. <ref. to AT-44 TROUBLE CODE 27 — ATF TEM- PERATURE SENSOR —, Diagnostic Proce- dure with Trouble Code.></ref. 	Is there any trouble in ATF temperature sensor circuit?	Repair or replace ATF temperature sensor circuit.	Go to step 9.
9	CHECK POOR CONTACT. Check poor contact in TCM connector.	Is there poor contact in TCM connector?	Repair poor con- tact in TCM con- nector.	Go to step 10.
10	CHECK MECHANICAL TROUBLE. Check mechanical trouble in automatic trans- mission.	Is there any mechanical trouble in automatic trans- mission?	Repair or replace automatic trans- mission. <ref. to<br="">AT-11 INSPECTION, Road Test.></ref.>	Replace TCM. <ref. at-42<br="" to="">Transmission Control Module (TCM).></ref.>

Engine (DIAGNOSTICS)

BU: DTC P0743 — TORQUE CONVERTER CLUTCH SYSTEM (LOCK-UP DUTY SOLENOID) ELECTRICAL — SOUBCOLE75

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
- No lock-up (after engine warm-up)

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

NOTE:

Check lock-up duty solenoid circuit. <Ref. to AT-102 TROUBLE CODE 77 — LOCK-UP DUTY SOLENOID —, Diagnostic Procedure with Trouble Code.>

BV: DTC P0748 — PRESSURE CONTROL SOLENOID (LINE PRESSURE DUTY SOLENOID) ELECTRICAL — 5008022076

- DTC DETECTING CONDITION:
- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Excessive shift shock

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

NOTE:

Check line pressure duty solenoid circuit. <Ref. to AT-90 TROUBLE CODE 75 — LINE PRESSURE DUTY SOLENOID —, Diagnostic Procedure with Trouble Code.>

BW: DTC P0753 — SHIFT SOLENOID A (SHIFT SOLENOID 1) ELECTRICAL

S008602B77

- DTC DETECTING CONDITION:
- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - No shift

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

NOTE:

Check shift solenoid 1 circuit. <Ref. to AT-74 TROUBLE CODE 71 — SHIFT SOLENOID 1 —, Diagnostic Procedure with Trouble Code.>

Engine (DIAGNOSTICS)

BX: DTC P0758 — SHIFT SOLENOID B (SHIFT SOLENOID 2) ELECTRICAL —

S008602B78

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

- TROUBLE SYMPTOM:
 - No shift

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

NOTE:

Check shift solenoid 2 circuit. <Ref. to AT-78 TROUBLE CODE 72 — SHIFT SOLENOID 2 —, Diagnostic Procedure with Trouble Code.>

BY: DTC P0778 — 2-4 BRAKE PRESSURE CONTROL SOLENOID VALVE CIRCUIT MALFUNCTION — S00802205

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

NOTE:

Check 2-4 brake pressure control solenoid valve circuit. <Ref. to AT-96 TROUBLE CODE 76 — 2-4 BRAKE DUTY SOLENOID —, Diagnostic Procedure with Trouble Code.>

BZ: DTC P0785 — 2-4 BRAKE TIMING CONTROL SOLENOID VALVE CIRCUIT MALFUNCTION — S008022006

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

NOTE:

Check 2-4 brake timing control solenoid valve circuit. <Ref. to AT-86 TROUBLE CODE 74 — 2-4 BRAKE TIMING SOLENOID —, Diagnostic Procedure with Trouble Code.>

Engine (DIAGNOSTICS)

CA: DTC P1110 — ATMOSPHERIC PRESSURE SENSOR CIRCUIT LOW INPUT — SOUBCE BEA

• DTC DETECTING CONDITION:

• Immediately at fault recognition

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	 CHECK CURRENT DATA. 1) Start engine. 2) Read the data of intake manifold absolute pressure signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.> OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool 	Is the value less than 0 kPa (0 mmHg, 0 inHg)?	Go to step 3.	Go to step 2.
2	CHECK POOR CONTACT. Check poor contact in ECM and pressure sensor connector.	Is there poor contact in ECM or pressure sensor connector?	Repair poor con- tact in ECM or atmospheric pres- sure sensor con- nector.	Even if MIL lights up, the circuit has returned to a nor- mal condition at this time.
3	CHECK INPUT SIGNAL FOR ECM. Measure voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 15 (+) — Chassis ground (-):	Is the voltage more than 4.5 V?	Go to step 5.	Go to step 4.
4	CHECK INPUT SIGNAL FOR ECM. Measure voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 15 (+) — Chassis ground (-):	Does the voltage change more than 4.5 V by shaking harness and connector of ECM while monitoring the value with voltage meter?	Repair poor con- tact in ECM con- nector.	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.
5	CHECK INPUT SIGNAL FOR ECM. Measure voltage between ECM and chassis ground. Connector & terminal (B136) No. 29 (+) — Chassis ground (-):	Is the voltage less than 0.2 V?	Go to step 7 .	Go to step 6 .
6	CHECK INPUT SIGNAL FOR ECM. (USING SUBARU SELECT MONITOR.) Read data of atmospheric absolute pressure signal using Subaru Select Monitor. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.>	Does the value change more than 0 kPa (0 mmHg, 0 inHg) by shaking harness and connector of ECM while monitoring the value with Subaru select moni- tor?	Repair poor con- tact in ECM con- nector.	Go to step 7.

No.	Step	Check	Yes	No
7	CHECK HARNESS BETWEEN ECM AND ATMOSPHERIC PRESSURE SENSOR CON- NECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from atmospheric pressure sensor. 3) Turn ignition switch to ON. 4) Measure voltage between atmospheric pressure sensor connector and engine ground. Connector & terminal (B2) No. 3 (+) — Engine ground (-):	Is the voltage more than 4.5 V?	Go to step 8.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and atmo- spheric pressure sensor connector • Poor contact in joint connector (B83)
8	CHECK HARNESS BETWEEN ECM AND ATMOSPHERIC PRESSURE SENSOR CON- NECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from ECM. 3) Measure resistance of harness between ECM and pressure sensor connector. Connector & terminal (B136) No. 16 — (B2) No. 1:	Is the resistance less than 1 Ω?	Go to step 9.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and pres- sure sensor con- nector
9	CHECK HARNESS BETWEEN ECM AND ATMOSPHERIC PRESSURE SENSOR CON- NECTOR. Measure resistance of harness between pres- sure sensor connector and engine ground. Connector & terminal (B2) No. 2 — Engine ground:	Is the resistance more than 500 k Ω ?	Go to step 10 .	Repair ground short circuit in harness between ECM and pres- sure sensor con- nector.
10	CHECK POOR CONTACT. Check poor contact in pressure sensor con- nector.	Is there poor contact in pressure sensor connec- tor?	Repair poor con- tact in atmo- spheric pressure sensor connector.	Replace atmo- spheric pressure sensor. <ref. to<br="">FU(H4)-52 Atmo- spheric Pressure Sensor.></ref.>

Engine (DIAGNOSTICS)

MEMO:
Engine (DIAGNOSTICS)

CB: DTC P1111 — ATMOSPHERIC PRESSURE SENSOR CIRCUIT HIGH INPUT — SOUGCEZEDES

• DTC DETECTING CONDITION:

• Immediately at fault recognition

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	 CHECK CURRENT DATA. 1) Start engine. 2) Read the data of intake manifold absolute pressure signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.> OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general Scan Tool Instruction Manual. 	Is the value more than 140 kPa (1,050 mmHg, 41.34 inHg)?	Go to step 10.	Go to step 2.
2	CHECK INPUT SIGNAL FOR ECM. Measure voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 15 (+) — Chassis ground (-):	Is the voltage more than 4.5 V?	Go to step 4.	Go to step 3.
3	CHECK INPUT SIGNAL FOR ECM. Measure voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 15 (+) — Chassis ground (-):	Does the voltage change more than 4.5 V by shaking harness and connector of ECM while monitoring the value with voltage meter?	Repair poor con- tact in ECM con- nector.	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.
4	CHECK INPUT SIGNAL FOR ECM. Measure voltage between ECM connector and chassis ground. Connector & terminal (B136) No. 29 (+) — Chassis ground (-):	Is the voltage less than 0.2 V?	Go to step 6.	Go to step 5.
5	CHECK INPUT SIGNAL FOR ECM. (USING SUBARU SELECT MONITOR.) Read data of atmospheric absolute pressure signal using Subaru Select Monitor. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.>	Does the value change more than 0 kPa (0 mmHg, 0 inHg) by shaking harness and connector of ECM while monitoring the value with Subaru select moni- tor?	Repair poor con- tact in ECM con- nector.	Go to step 6 .
6	CHECK HARNESS BETWEEN ECM AND PRESSURE SENSOR CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from atmospheric pressure sensor. 3) Turn ignition switch to ON. 4) Measure voltage between atmospheric pressure sensor connector and engine ground. Connector & terminal (B2) No. 3 (+) — Engine ground (-):	Is the voltage more than 4.5 V?	Go to step 7.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and pres- sure sensor con- nector • Poor contact in joint connector (B83)

No.	Step	Check	Yes	No
7	CHECK HARNESS BETWEEN ECM AND PRESSURE SENSOR CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from ECM. 3) Measure resistance of harness between ECM and pressure sensor connector. Connector & terminal (B136) No. 29 — (B2) No. 2:	Is the resistance less than 1 Ω ?	Go to step 8.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and pres- sure sensor con- nector • Poor contact in joint connector (B83)
8	CHECK HARNESS BETWEEN ECM AND PRESSURE SENSOR CONNECTOR. Measure resistance of harness between ECM and pressure sensor connector. Connector & terminal (B136) No. 16 — (B2) No. 1:	Is the resistance less than 1 Ω?	Go to step 9.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and pres- sure sensor con- nector • Poor contact in joint connector (B83)
9	CHECK POOR CONTACT. Check poor contact in pressure sensor con- nector.	Is there poor contact in pressure sensor connec- tor?	Repair poor con- tact in atmo- spheric pressure sensor connector.	Replace atmo- spheric pressure sensor. <ref. to<br="">FU(H4)-52 Atmo- spheric Pressure Sensor.></ref.>
10	 CHECK CURRENT DATA. 1) Turn ignition switch to OFF. 2) Disconnect connector from atmospheric pressure sensor. 3) Turn ignition switch to ON. 4) Read data of intake manifold absolute pressure signal using Subaru select monitor or OBD-II general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.> OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool 	Is the value more than 140 kPa (1,050 mmHg, 41.34 inHg)?	Repair battery short circuit in harness between ECM and atmo- spheric pressure sensor connector.	Replace atmo- spheric pressure sensor. <ref. to<br="">FU(H4)-52 Atmo- spheric Pressure Sensor.></ref.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

CC: DTC P1112 — ATMOSPHERIC PRESSURE SENSOR CIRCUIT RANGE/ PERFORMANCE PROBLEM — SOURCE SENSOR CIRCUIT RANGE/

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY. NOTE: In this case, it is not necessary to inspect DTC P0106.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0106, P0107, P0108, P1110 or P1111?	Inspect DTC P0106, P0107, P0108, P1110 or P1111 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.></ref.>	Go to step 2.
2	 CHECK ATMOSPHERIC PRESSURE SEN- SOR FILTER. 1) Turn ignition switch to OFF. 2) Disconnect connector from atmospheric pressure sensor. 3) Remove atmospheric pressure sensor. 4) Check atmospheric pressure sensor filter. 	Is atmospheric pressure sensor filter non-functional? (Check for contamination, damage, water leakage, etc.)	Replace atmo- spheric pressure sensor filter.	Go to step 3.
3	 CHECK CURRENT DATA. 1) Turn ignition switch to ON. 2) Read data of intake manifold absolute pressure signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.> OBD-II general scan tool For detailed operation procedures, refer to the OBD-II general scan tool 	Is the value between 73.3 kPa (550 mmHg, 21.65 inHg) and 106.6 kPa (800 mmHg, 31.50 inHg)?	Replace atmo- spheric pressure sensor. <ref. to<br="">FU(H4)-52 Atmo- spheric Pressure Sensor.></ref.>	Replace intake air temperature and pressure sensor. <ref. to<br="">FU(H4)-51 Intake Air Temperature and Pressure Sensor.></ref.>

Engine (DIAGNOSTICS)

CD: DTC P1137 — FRONT OXYGEN (A/F) SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM — 5008602649

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No	Sten	Check	Vos	No
1	CHECK ANY OTHER DIC ON DISPLAY.	Does the Subaru Select		Go to step 2.
		Monitor or OBD-II general	PUISI, PUISZ,	
			PII32 OF PII33	
		P0131, P0132, P1132 01	Diagnastic	
		P1133?	Trauble Code	
			(DTC) IOLAT	
			of Diagnostic	
			Trouble Code	
			(DTC) for AT	
			Vehicles.>	
2	CHECK FRONT OXYGEN (A/F) SENSOR	Is the value equal to or	Go to step 3.	Go to step 4.
- 	DATA.	more than 0.85 and equal		
	1) Start engine.	to less than 1.15 in idling?		
	2) While observing the Subaru Select Monitor			
	or OBD-II general scan tool screen, warm-up			
	the engine until coolant temperature is above			
	70°C (160°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 Subaru Select Monitor or OBD-II			
	general scan tool.			
	NOTE:			
	Subaru Select Monitor			
	For detailed operation procedure, refer to the			
	"READ CURRENT DATA FOR ENGINE".			
	CRET. to EIN(H4)-52 Subaru Select Monitor.>			
	OBD-II general scall tool For detailed operation precedures, refer to the			
	OBD-II General Scan Tool Instruction Manual			
3	CHECK EPONT OXYGEN (A/E) SENSOR	Is the value more than 1.1	Go to step 6	Go to step 4
ľ		for a moment?		
	Race engine at speeds from idling to 5.000			
	rom for a total of 5 cycles.			
	NOTE:			
	To increase engine speed to 5,000 rpm,			
	slowly depress accelerator pedal, taking			
	approximately 5 seconds, and quickly release			
	accelerator pedal to decrease engine speed.			
4	CHECK HARNESS BETWEEN ECM AND	Is the resistance less than	Go to step 5.	Repair open cir-
	FRONT OXYGEN (A/F) SENSOR.	5 Ω?		cuit between ECM
	1) Turn ignition switch to OFF.			and front oxygen
	2) Disconnect connector from ECM and front			(A/F) sensor.
	oxygen (A/F) sensor connector.			
	3) Measure resistance between ECM and			
	front oxygen (A/F) sensor.			
	(B130) NO. 0 — $(B18)$ NO. 1: (B126) NO. 7 (B19) NO. 6:			
	(B130) NO. 1 (B16) NO. 0: (B126) NO. 10 (B19) NO. 2:			
	(B136) No 20 - (B18) No 4			
	(DISU) NU. 20 - (DIO) NU. 4:		1	1

No.	Step	Check	Yes	No
5	CHECK HARNESS BETWEEN ECM AND FRONT OXYGEN (A/F) SENSOR. Measure resistance between ECM and chas- sis ground. Connector & terminals (B136) No. 6 — Chassis ground: (B136) No. 7 — Chassis ground: (B136) No. 19 — Chassis ground: (B136) No. 20 — Chassis ground:	Is the resistance more than 1 MΩ?	Go to step 6 .	Repair ground short circuit between ECM and front oxygen (A/F) sensor.
6	CHECK EXHAUST SYSTEM. Check exhaust system parts. NOTE: Check the following items. • Loose installation of portions • Damage (crack, hole etc.) of parts • Looseness of front oxygen (A/F) sensor • Looseness and ill fitting of parts between front oxygen (A/F) sensor and rear oxygen sensor	Is there a fault in exhaust system?	Repair or replace faulty parts.	Replace front oxy- gen (A/F) sensor. <ref. to<br="">FU(H4)-63 Front Oxygen (A/F) Sensor.></ref.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

CE: DTC P1142 — THROTTLE POSITION SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM (LOW INPUT) — SOUBCOZED

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Erroneous idling
 - Engine stalls.
 - Poor driving performance

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

• WIRING DIAGRAM:



EN(H4)-500

No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0122 or P0123?	Inspect DTC P0122 or P0123 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.> NOTE: In this case, it is not necessary to inspect DTC P1142.</ref.>	Replace throttle position sensor. <ref. to<br="">FU(H4)-45 Throttle Position Sensor.></ref.>

Engine (DIAGNOSTICS)

CF: DTC P1146 — PRESSURE SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM (HIGH INPUT) — SOUBCEZGOT

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY. NOTE: In this case, it is not necessary to inspect DTC P0106.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0107, P0108 or P1112?	Inspect DTC P0107, P0108 or P1112 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.></ref.>	Go to step 2.
2	CHECK AIR INTAKE SYSTEM.	Are there holes, loose bolts or disconnection of hose on air intake system?	Repair air intake system.	Go to step 3.
3	CHECK PRESSURE 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 the selector lever in "N" or "P" position. 3) Turn A/C switch to OFF. 4) Turn all accessory switches to OFF. 5) Read data of intake manifold pressure sen- sor signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: • Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""> • OBD-II general scan tool For detailed operation procedure, refer to the OBD-II general Scan tool Instruction Manual. Specification: • Intake manifold absolute pressure Ignition ON 73.3 — 106.6 kPa (550 — 800 mmHg, 21.65 — 31.50 inHg) Idling 20.0 — 46.7 kPa (150 — 350 mmHg, 5.91 — 13.78 inHg)</ref.>	Is the value within the specifications?	Go to step 4.	Replace intake air temperature sen- sor and pressure sensor. <ref. to<br="">FU(H4)-51 Intake Air Temperature and Pressure Sensor.></ref.>
4	 CHECK THROTTLE POSITION. Read data of throttle position signal using Subaru Select Monitor or OBD-II general scan tool. NOTE: Subaru Select Monitor For detailed operation procedure, refer to the "READ CURRENT DATA FOR ENGINE". <ref. en(h4)-52="" monitor.="" select="" subaru="" to=""></ref.> OBD-II general scan tool For detailed operation procedure, refer to the OBD-II general scan tool 	Is throttle positioning ratio equal to or less than 5% when throttle is fully closed?	Go to step 5 .	Adjust or replace throttle position sensor. <ref. to<br="">FU(H4)-45 Throttle Position Sensor.></ref.>

No.	Step	Check	Yes	No
5	CHECK THROTTLE POSITION.	Is throttle positioning ratio equal to or more than 85% when throttle is fully open?	Replace intake air temperature and pressure sensor. <ref. to<br="">FU(H4)-51 Intake Air Temperature and Pressure Sensor.></ref.>	Replace throttle position sensor. <ref. to<br="">FU(H4)-45 Throttle Position Sensor.></ref.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

CG: DTC P1400 — FUEL TANK PRESSURE CONTROL SOLENOID VALVE CIRCUIT LOW INPUT — 500802207

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK OUTPUT SIGNAL FROM ECM. 1) Turn ignition switch to ON. 2) Measure voltage between ECM and chas- sis ground. Connector & terminal (B124) No. 1 (1) Chassis ground (1):	Is the voltage more than 10 V?	Go to step 2.	Go to step 3.

No.	Step	Check	Yes	No
2	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.
3	 CHECK HARNESS BETWEEN FUEL TANK PRESSURE CONTROL SOLENOID VALVE AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connectors from fuel tank pressure control solenoid valve and ECM. 3) Measure resistance of harness between fuel tank pressure control solenoid valve con- nector and chassis ground. Connector & terminal (R68) No. 2 — Chassis ground: 	Is the resistance less than 10 Ω?	Repair ground short circuit in harness between ECM and fuel tank pressure control solenoid valve connector.	Go to step 4.
4	CHECK HARNESS BETWEEN FUEL TANK PRESSURE CONTROL SOLENOID VALVE AND ECM CONNECTOR. Measure resistance of harness between ECM and fuel tank pressure control solenoid valve connector. Connector & terminal (B134) No. 1 — (R68) No. 2:	Is the voltage less than 1 Ω?	Go to step 5.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and fuel tank pressure control solenoid valve connector • Poor contact in coupling connec- tors (R134 and B99)
5	CHECK FUEL TANK PRESSURE CONTROL SOLENOID VALVE. Measure resistance between fuel tank pres- sure 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 fuel tank pressure control solenoid valve. <ref. to<br="">EC(H4)-13 Pres- sure Control Sole- noid Valve.></ref.>

No.	Step	Check	Yes	No
6	CHECK POWER SUPPLY TO FUEL TANK PRESSURE CONTROL SOLENOID VALVE. 1) Turn ignition switch to ON. 2) Measure voltage between fuel tank pres- sure control solenoid valve and chassis ground. Connector & terminal (R68) No. 1 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 7.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between main relay and fuel tank pressure control solenoid valve connector • Poor contact in coupling connec- tors (R134 and B97) • Poor contact in main relay con- nector
7	CHECK POOR CONTACT. Check poor contact in fuel tank pressure con- trol solenoid valve connector.	Is there poor contact in fuel tank pressure control sole- noid valve connector?	Repair poor con- tact in fuel tank pressure control solenoid valve connector.	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

CH: P1420 — FUEL TANK PRESSURE CONTROL SOLENOID VALVE CIRCUIT HIGH INPUT — SUBBOLCOB

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK OUTPUT SIGNAL FROM ECM. 1) Turn ignition switch to OFF. 2) Connect test mode connector at the lower portion of instrument panel (on the driver's side), to the side of the center console box. 3) Turn ignition switch to ON. 4) While operating fuel tank pressure control solenoid valve, measure voltage between ECM and chassis ground. NOTE: Fuel tank pressure control solenoid valve operation can be executed using Subaru Select Monitor. For procedure, refer to "Com- pulsory Valve Operation Check Mode". <ref. to EN(H4)-64 Compulsory Valve Operation Check Mode.> Connector & terminal (B134) No. 1 (+) — Chassis ground (-):</ref. 	Does voltage change between 0 and 10 V?	Go to step 2.	Even if MIL light up, the circuit has returned to a nor- mal condition at this time. In this case, repair poor contact in ECM connector.
2	 CHECK OUTPUT SIGNAL FROM ECM. 1) Turn ignition switch to ON. 2) Measure voltage between ECM and chassis ground. Connector & terminal (B134) No. 1 (+) — Chassis ground (-): 	Is the voltage more than 10 V?	Go to step 4.	Go to step 3.
3	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>
4	CHECK HARNESS BETWEEN FUEL TANK PRESSURE CONTROL SOLENOID VALVE AND ECM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from fuel tank pres- sure control solenoid valve. 3) Turn ignition switch to ON. 4) Measure voltage between ECM and chas- sis ground. Connector & terminal (B134) No. 1 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Repair battery short circuit in harness between ECM and fuel tank pressure control solenoid valve connector. After repair, replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>	Go to step 5 .
5	 CHECK FUEL TANK PRESSURE CONTROL SOLENOID VALVE. 1) Turn ignition switch to OFF. 2) Measure resistance between fuel tank pressure control solenoid valve terminals. <i>Terminals</i> <i>No. 1 — No. 2:</i> 	Is the resistance less than 1 Ω ?	Replace fuel tank pressure control solenoid valve <ref. to<br="">EC(H4)-13 Pres- sure Control Sole- noid Valve.> and ECM <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.></ref.>	Go to step 6.
6	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>

Engine (DIAGNOSTICS)

CI: DTC P1442 — FUEL LEVEL SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM 2 — SUDBOLC 11

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0461, P0462 or P0463?	Inspect DTC P0461, P0462 or P0463 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.> NOTE: In this case, it is not necessary to inspect this trouble</ref.>	Replace fuel level sensor <ref. to<br="">FU(H4)-93 Fuel Level Sensor.> and fuel sub level sensor. <ref. to<br="">FU(H4)-94 Fuel Sub Level Sen- sor.></ref.></ref.>

Engine (DIAGNOSTICS)

CJ: DTC P1443 — EVAPORATIVE EMISSION CONTROL SYSTEM VENT CONTROL FUNCTION PROBLEM — 5008602C12

• DTC DETECTING CONDITION:

- Immediately after fault occurrence
- TROUBLE SYMPTOM:
 - Improper fuel supply

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Is there any other DTC on display?	Inspect the rel- evant DTC using "19. List of Diag- nostic Trouble Code (DTC) for AT Vehicles". <ref. en(h4)-<br="" to="">301 List of Diag- nostic Trouble Code (DTC) for AT Vehicles.></ref.>	Go to step 2.
2	 CHECK VENT LINE HOSES. Check the following items. Clogging of vent hoses between canister and drain valve Clogging of vent hose between drain valve and air filter Clogging of drain filter 	Is there a fault in vent line?	Repair or replace the faulty part.	Go to step 3.
3	CHECK DRAIN VALVE OPERATION. 1) Turn ignition switch to OFF. 2) Connect test mode connector at the lower portion of instrument panel (on the driver's side), to the side of the center console box. 3) Turn ignition switch to ON. 4) Operate drain valve. NOTE: Drain valve operation can also be executed using Subaru Select Monitor. For the procedure, refer to the "Compulsory Valve Operation Check Mode". <ref. en(h4)-64<br="" to="">Compulsory Valve Operation Check Mode.></ref.>	Does drain valve produce operating sound?	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.	Replace drain valve. <ref. to<br="">EC(H4)-17 Drain Valve.></ref.>

Engine (DIAGNOSTICS)

CK: DTC P1480 — COOLING FAN RELAY 1 CIRCUIT HIGH INPUT — SOUBCOZGOB

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Radiator fan does not operate properly.
 - Overheating

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

Engine (DIAGNOSTICS)

• WIRING DIAGRAM:



B2M3939

01 02 P1 P2

No.	Step	Check	Yes	No
1	CHECK OUTPUT SIGNAL FROM ECM. 1) Turn ignition switch to OFF. 2) Connect test mode connector at the lower portion of instrument panel (on the driver's side), to the side of the center console box. 3) Turn ignition switch to ON. 4) While operating radiator fan relay, measure voltage between ECM and chassis ground. NOTE: Radiator fan relay operation can be executed using Subaru Select Monitor. For procedure, refer to "Compulsory Valve Operation Check Mode". <ref. compulsory="" en(h4)-64="" to="" valve<br="">Operation Check Mode.> Connector & terminal (B134) No. 3 (+) — Chassis ground (-):</ref.>	Does voltage change between 0 and 10 V?	Even if MIL lights up, the circuit has returned to a nor- mal condition at this time. In this case, repair poor contact in ECM connector.	Go to step 2.
2	CHECK SHORT CIRCUIT IN RADIATOR FAN RELAY CONTROL CIRCUIT. 1) Turn ignition switch to OFF. 2) Remove main fan relay and sub fan relay. (with A/C models) 3) Disconnect test mode connector. 4) Turn ignition switch to ON. 5) Measure voltage between ECM and chas- sis ground. Connector & terminal (B134) No. 3 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Repair battery short circuit in radiator fan relay control circuit. After repair, replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>	Go to step 3.
3	 CHECK MAIN FAN RELAY. 1) Turn ignition switch to OFF. 2) Remove main fan relay. 3) Measure resistance between main fan relay terminals. Terminal No. 1 — No. 3: 	Is the resistance less than 1 Ω ?	Replace main fan relay and ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>	Go to step 4.
4	 CHECK SUB FAN RELAY. 1) Remove sub fan relay. 2) Measure resistance between sub fan relay terminals. Terminal No. 1 — No. 3 	Is the resistance less than 1 Ω?	Replace sub fan relay and ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>	Go to step 5.
5	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

CL: DTC P1507 — IDLE CONTROL SYSTEM MALFUNCTION (FAIL-SAFE) —

S008602C16

- DTC DETECTING CONDITION:
 - Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Engine keeps running at higher revolution than specified idling revolution.

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P1510, P1511, P1512, P1513, P1514, P1515, P1516 or P1517?	Inspect DTC P1510, P1511, P1512, P1513, P1514, P1515, P1516 or P1517 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.> NOTE: In this case, it is not necessary to inspect DTC P0507.</ref.>	Go to step 2.
2	 CHECK AIR INTAKE SYSTEM. 1) Turn ignition switch to ON. 2) Start engine, and idle it. 3) Check the following items. Loose installation of intake manifold, idle air control solenoid valve and throttle body Cracks of intake manifold gasket, idle air control solenoid valve gasket and throttle body gasket Disconnections of vacuum hoses 	Is there a fault in air intake system?	Repair air suction and leaks.	Go to step 3.
3	CHECK THROTTLE CABLE.	Does throttle cable have play for adjustment?	Go to step 4.	Adjust throttle cable. <ref. to<br="">SP(H4)-6 INSTALLATION, Accelerator Con- trol Cable.></ref.>
4	 CHECK AIR BY-PASS LINE. 1) Turn ignition switch to OFF. 2) Remove idle air control solenoid valve from throttle body. <ref. air="" control="" fu(h4)-53="" idle="" solenoid="" to="" valve.=""></ref.> 3) Confirm that there are no foreign particles in by-pass air line. 	Are foreign particles in by- pass air line?	Remove foreign particles from by- pass air line.	Replace idle air control solenoid valve. <ref. to<br="">FU(H4)-53 Idle Air Control Solenoid Valve.></ref.>

Engine (DIAGNOSTICS)

CM: DTC P1510 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 1 CIRCUIT LOW INPUT — 500802217

NOTE:

For the diagnostic procedure, refer to DTC P1516. <Ref. to EN(H4)-524 DTC 1516 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 4 CIRCUIT LOW INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.>

CN: DTC P1511 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 1 CIRCUIT HIGH INPUT — 5008602C18

NOTE:

For the diagnostic procedure, refer to DTC P1517. <Ref. to EN(H4)-528 DTC 1517 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 4 CIRCUIT HIGH INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.>

CO: DTC P1512 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 2 CIRCUIT LOW INPUT — 500802C19

NOTE:

For the diagnostic procedure, refer to DTC P1516. <Ref. to EN(H4)-524 DTC 1516 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 4 CIRCUIT LOW INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.>

CP: DTC P1513 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 2 CIRCUIT HIGH INPUT — 5008602C20

NOTE:

For the diagnostic procedure, refer to DTC P1517. <Ref. to EN(H4)-528 DTC 1517 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 4 CIRCUIT HIGH INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.>

CQ: DTC P1514 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 3 CIRCUIT LOW INPUT — 500602C21

NOTE:

For the diagnostic procedure, refer to DTC P1516. <Ref. to EN(H4)-524 DTC 1516 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 4 CIRCUIT LOW INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.>

CR: DTC P1515 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 3 CIRCUIT HIGH INPUT — 500802C22

NOTE:

For the diagnostic procedure, refer to DTC P1517. <Ref. to EN(H4)-528 DTC 1517 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 4 CIRCUIT HIGH INPUT —, Diagnostic Procedure with Diagnostic Trouble Code (DTC) for AT Vehicles.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

CS: DTC P1516 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 4 CIRCUIT LOW INPUT — 5008602C23

• DTC DETECTING CONDITION:

- Immediately at fault recognition
- TROUBLE SYMPTOM:
 - Erroneous idling
 - Engine stalls.
 - Engine breathing

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK POWER SUPPLY TO IDLE AIR CONTROL SOLENOID VALVE. 1) Turn ignition switch to OFF. 2) Disconnect connector from idle air control solenoid valve. 3) Turn ignition switch to ON. 4) Measure voltage between idle air control solenoid valve connector and engine ground. Connector & terminal (E7) No. 2 (+) — Engine ground (-):	Is the voltage more than 10 V?	Go to step 2 .	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between idle air control solenoid valve and main relay connector • Poor contact in coupling connec- tor (B22)
2	CHECK POWER SUPPLY TO IDLE AIR CONTROL SOLENOID VALVE. Measure voltage between idle air control sole- noid valve connector and engine ground. Connector & terminal (E7) No. 5 (+) — Engine ground (–):	Is the voltage more than 10 V?	Go to step 3.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between idle air control solenoid valve and main relay connector • Poor contact in coupling connec- tor (B22)
3	CHECK HARNESS BETWEEN ECM AND IDLE AIR CONTROL SOLENOID VALVE CONNECTOR. 1) Turn ignition switch to OFF. 2) Measure resistance between ECM and idle air control solenoid valve connector. Connector & terminal DTC P1510; (B134) No. 5 — (E7) No. 3: DTC P1512; (B134) No. 6 — (E7) No. 1: DTC P1514; (B134) No. 19 — (E7) No. 6: DTC P1516; (B134) No. 20 — (E7) No. 4:	Is the resistance less than 1 Ω?	Go to step 4.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and idle air control solenoid valve connector • Poor contact in coupling connec- tor (B21)
4	CHECK HARNESS BETWEEN ECM AND IDLE AIR CONTROL SOLENOID VALVE CONNECTOR. 1) Disconnect connector from ECM. 2) Measure resistance between ECM connec- tor and chassis ground. Connector & terminal DTC P1510; (B134) No. 5 — Chassis ground: DTC P1512; (B134) No. 6 — Chassis ground: DTC P1514; (B134) No. 19 — Chassis ground: DTC P1516; (B134) No. 20 — Chassis ground:	Is the resistance less than 10 Ω?	Repair ground short circuit in harness between ECM and idle air control solenoid valve connector.	Go to step 5.
No.	Step	Check	Yes	No
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5	CHECK POOR CONTACT. Check poor contact in ECM connector and idle air control solenoid valve connector.	Is there poor contact in ECM connector or idle air control solenoid valve con- nector?	Repair poor con- tact in ECM con- nector or idle air control solenoid valve connector.	Replace idle air control solenoid valve. <ref. to<br="">FU(H4)-53 Idle Air Control Solenoid Valve.></ref.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

CT: DTC P1517 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 4 CIRCUIT HIGH INPUT — 5008602C24

• DTC DETECTING CONDITION:

- Immediately at fault recognition
- TROUBLE SYMPTOM:
 - Erroneous idling
 - Engine stalls.
 - Engine breathing

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK ANY OTHER DTC ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P1511, P1513, P1515 and P1517 at same time?	Go to step 2.	Go to step 3.
2	 CHECK GROUND CIRCUIT FOR ECM. 1) Turn ignition switch to OFF. 2) Measure resistance between ECM connector and chassis ground. Connector & terminal (B134) No. 7 — Chassis ground: 	Is the resistance less than 5 Ω?	Go to step 3.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM connector and engine ground terminal • Poor contact in ECM connector • Poor contact in coupling connec- tor (B22)
3	CHECK HARNESS BETWEEN ECM AND IDLE AIR CONTROL SOLENOID VALVE CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from idle air control solenoid valve. 3) Turn ignition switch to ON. 4) Measure voltage between ECM connector and chassis ground. Connector & terminal DTC P1511; (B134) No. 5 (+) — Chassis ground (-): DTC P1513; (B134) No. 6 (+) — Chassis ground (-): DTC P1515; (B134) No. 19 (+) — Chas- sis ground (-): DTC P1517; (B134) No. 20 (+) — Chas- sis ground (-):	Is the voltage more than 10 V?	Repair battery short circuit in harness between ECM and idle air control solenoid valve connector. After repair, replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>	Replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>

Engine (DIAGNOSTICS)

CU: DTC P1518 — STARTER SWITCH CIRCUIT LOW INPUT — SOUBCOZGO9

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Failure of engine to start

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

• WIRING DIAGRAM:



EN(H4)-530

No.	Step	Check	Yes	No
1	CHECK OPERATION OF STARTER MOTOR. NOTE: Place the inhibitor switch in the "P" or "N" position.	Does starter motor operate when ignition switch to "ST"?	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open or ground short circuit in harness between ECM and starter motor connector. • Poor contact in ECM connector.	Check starter motor circuit. <ref. to<br="">EN(H4)-78 STARTER MOTOR CIRCUIT, Diagnostic for Engine Starting Failure.></ref.>

Engine (DIAGNOSTICS)

CV: DTC P1540 — VEHICLE SPEED SENSOR MALFUNCTION 2 — SUBSCIENCE

• DTC DETECTING CONDITION:

• Immediately at fault recognition

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK DTC P0720 ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0720?	Check front vehicle speed sensor signal cir- cuit. <ref. to<br="">AT-56 TROUBLE CODE 33 — FRONT VEHICLE SPEED SENSOR —, Diagnostic Procedure with Trouble Code.></ref.>	Go to step 2.
2	CHECK SPEEDOMETER OPERATION IN COMBINATION METER.	Does speedometer operate normally?	Go to step 3.	Check speedom- eter and vehicle speed sensor. <ref. idi-19<br="" to="">Speedometer.></ref.>
3	CHECK HARNESS BETWEEN ECM AND COMBINATION METER CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from combination meter. 3) Measure resistance between ECM and combination meter. Connector & terminal (B135) No. 24 — (i10) No. 13:	Is the resistance less than 10 Ω?	Repair poor con- tact in ECM con- nector.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and combi- nation meter con- nector • Poor contact in ECM connector • Poor contact in combination meter connector • Poor contact in combination meter connector • Poor contact in coupling connec- tor (i2)

Engine (DIAGNOSTICS)

CW: DTC P1560 — BACK-UP VOLTAGE CIRCUIT MALFUNCTION — SOUBCOLT

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK INPUT SIGNAL FOR ECM.	Is the voltage more than 10	Repair poor con-	Go to step 2.
	1) Turn ignition switch to OFF.	V?	tact in ECM con-	
	2) Measure voltage between ECM and chassis ground.		nector.	
	Connector & terminal			
	(B136) No. 9 (+) — Chassis ground (–):			

No.	Step	Check	Yes	No
2	CHECK HARNESS BETWEEN ECM AND MAIN FUSE BOX CONNECTOR. 1) Disconnect connector from ECM. 2) Measure resistance of harness between ECM and chassis ground. Connector & terminal (B136) No. 9 — Chassis ground:	Is the resistance less than 10 Ω?	Repair ground short circuit in harness between ECM connector and battery termi- nal.	Go to step 3.
3	CHECK FUSE SBF-5.	Is fuse blown?	Replace fuse.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and battery • Poor contact in ECM connector • Poor contact in battery terminal

Engine (DIAGNOSTICS)

CX: DTC P1590 — NEUTRAL POSITION SWITCH CIRCUIT HIGH INPUT — S008602G10

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
- Erroneous idling

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK DTC P0705 ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0705?	Inspect DTC P0705 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.></ref.>	Go to step 2.
2	 CHECK INPUT SIGNAL FOR ECM. 1) Turn ignition switch to ON. 2) Measure voltage between ECM and chassis ground in selector lever "N" and "P" positions. Connector & terminal (B135) No. 26 (+) — Chassis ground (-): 	Is the voltage less than 1 V?	Go to step 3.	Go to step 5.
3	CHECK INPUT SIGNAL FOR ECM. Measure voltage between ECM and chassis ground in selector lever except for "N" and "P" positions. Connector & terminal (B135) No. 26 (+) — Chassis ground (-):	Is the voltage between 4.5 and 5.5 V?	Go to step 4.	Go to step 5 .
4	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.
5	CHECK INPUT SIGNAL FOR ECM. Measure voltage between ECM and chassis ground. Connector & terminal (B135) No. 26 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Repair battery short circuit in harness between ECM and inhibitor switch connector.	Go to step 6 .
6	CHECK HARNESS BETWEEN ECM AND INHIBITOR SWITCH CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connectors from ECM and inhibitor switch. 3) Measure resistance of harness between ECM and inhibitor switch connector. Connector & terminal (B135) No. 26 — (T7) No. 12:	Is the resistance less than 1 Ω ?	Go to step 7.	Repair harness and connector. NOTE: In this case, repair the follow- ing: • Open circuit in harness between ECM and inhibitor switch connector • Poor contact in coupling connec- tor (B12) • Poor contact in inhibitor switch connector • Poor contact in ECM connector

No.	Step	Check	Yes	No
7	CHECK INHIBITOR SWITCH GROUND LINE. Measure resistance of harness between inhibitor switch connector and engine ground. Connector & terminal (T7) No. 7 — Engine ground:	Is the resistance less than 5 Ω ?	Go to step 8.	Repair open cir- cuit in harness between inhibitor switch connector and starter motor ground line. NOTE: In this case, repair the follow- ing: • Open circuit in harness between inhibitor switch connector and starter motor ground line • Poor contact in starter motor con- nector • Poor contact in starter motor ground • Starter motor
8	CHECK INHIBITOR SWITCH. Measure resistance between inhibitor switch connector receptacle's terminals in selector lever "N" and "P" positions. <i>Terminals</i> No. 7 — No. 12:	Is the resistance less than 1 Ω ?	Go to step 9.	Replace inhibitor switch. <ref. to<br="">AT-28 Inhibitor Switch.></ref.>
9	CHECK SELECTOR CABLE CONNECTION.	Is there any fault in selec- tor cable connection to inhibitor switch?	Repair selector cable connection. <ref. cs-25<br="" to="">INSPECTION, Select Cable.></ref.>	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

CY: DTC P1591 — NEUTRAL POSITION SWITCH CIRCUIT LOW INPUT — S008602G11

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
- Erroneous idling

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK DTC P0705 ON DISPLAY.	Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0705?	Inspect DTC P0705 using "19. List of Diagnostic Trouble Code (DTC) for AT Vehicles". <ref. to<br="">EN(H4)-301 List of Diagnostic Trouble Code (DTC) for AT Vehicles.></ref.>	Go to step 2 .
2	CHECK INPUT SIGNAL FOR ECM. 1) Turn ignition switch to ON. 2) Measure voltage between ECM and chas- sis ground. Connector & terminal (B135) No. 26 (+) — Chassis ground (-):	Is the voltage between 4.5 and 5.5 V at except "N" and "P" positions?	Even if MIL lights up, the circuit has returned to a nor- mal condition at this time.	Go to step 3 .
3	 CHECK HARNESS BETWEEN ECM AND TRANSMISSION HARNESS CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connectors from ECM and transmission harness connector (T3). 3) Measure resistance of harness between ECM connector and chassis ground. Connector & terminal (B135) No. 26 — Chassis ground: 	Is the resistance less than 10 Ω?	Repair ground short circuit in harness between ECM and trans- mission harness connector.	Go to step 4.
4	CHECK TRANSMISSION HARNESS CON- NECTOR. 1) Disconnect connector from inhibitor switch. 2) Measure resistance of harness between transmission harness connector and engine ground. Connector & terminal (T3) No. 12 — Engine ground:	Is the resistance less than 10 Ω?	Repair ground short circuit in harness between transmission har- ness and inhibitor switch connector.	Go to step 5.
5	CHECK INHIBITOR SWITCH. Measure resistance between inhibitor switch connector receptacle's terminals in selector lever except for "N" position. Terminals No. 7 — No. 12:	Is the resistance more than 1 $M\Omega$ at except "N" and "P" positions?	Go to step 6.	Replace inhibitor switch. <ref. to<br="">AT-28 Inhibitor Switch.></ref.>
6	CHECK SELECTOR CABLE CONNECTION.	Is there any fault in selec- tor cable connection to inhibitor switch?	Repair selector cable connection. <ref. cs-25<br="" to="">INSPECTION, Select Cable.></ref.>	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.

Engine (DIAGNOSTICS)

CZ: DTC P1594 — AUTOMATIC TRANSMISSION DIAGNOSIS INPUT SIGNAL CIRCUIT MALFUNCTION — 5008622312

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK DRIVING CONDITION. 1) Start and warm-up the engine until the radiator fan makes one complete rotation. 2) Drive the vehicle.	Is AT shift control function- ing properly?	Go to step 2 .	Replace TCM. <ref. at-42<br="" to="">Transmission Control Module (TCM).></ref.>

No.	Step	Check	Yes	No
2	CHECK ACCESSORY.	Are car phone and/or CB installed on vehicle?	Repair grounding line of car phone or CB system.	Replace TCM. <ref. at-42<br="" to="">Transmission Control Module (TCM).></ref.>

Engine (DIAGNOSTICS)

DA: DTC P1595 — AUTOMATIC TRANSMISSION DIAGNOSIS INPUT SIGNAL CIRCUIT LOW INPUT — 5008602613

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR. 1) Turn ignition switch to ON. 2) Measure voltage between ECM and chas- sis ground. Connector & terminal (B135) No. 4 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 2.	Even if MIL lights up, the circuit has returned to a nor- mal condition at this time. NOTE: In this case, repair the follow- ing: • Poor contact in ECM connector • Poor contact in TCM connector
2	 CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connector from ECM and TCM. 3) Measure resistance of harness between ECM and chassis ground. Connector & terminal (B135) No. 4 — Chassis ground: 	Is the resistance less than 10 Ω?	Repair ground short circuit in harness between ECM and TCM connector.	Go to step 3.
3	 CHECK OUTPUT SIGNAL FOR ECM. 1) Connect connector to ECM. 2) Turn ignition switch to ON. 3) Measure voltage between ECM and chassis ground. Connector & terminal (B135) No. 4 (+) — Chassis ground (-): 	Is the voltage more than 5 V?	Go to step 4 .	Repair poor con- tact in ECM con- nector.
4	CHECK TROUBLE CODE FOR AUTOMATIC TRANSMISSION. Read trouble code for automatic transmission. <ref. at-26="" diagnostic="" read="" to="" trouble<br="">Code.></ref.>	Does trouble code appear for automatic transmission?	Inspect trouble code for auto- matic transmis- sion. <ref. to<br="">AT-36 Diagnostic Procedure with Trouble Code.></ref.>	Replace TCM. <ref. at-42<br="" to="">Transmission Control Module (TCM).></ref.>

Engine (DIAGNOSTICS)

DB: DTC P1596 — AUTOMATIC TRANSMISSION DIAGNOSIS INPUT SIGNAL CIRCUIT HIGH INPUT — 5008022014

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR. 1) Turn ignition switch to ON. 2) Measure voltage between ECM and chas- sis ground. Connector & terminal (B135) No. 4 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Repair battery short circuit in harness between ECM and TCM connector. After repair, replace ECM. <ref. to<br="">FU(H4)-67 Control Module.></ref.>	Go to step 2.
2	CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR. Measure voltage between ECM connector and chassis ground. Connector & terminal (B135) No. 4 (+) — Chassis ground (–):	Is the voltage more than 4 V?	Go to step 5 .	Go to step 3.
3	CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR. Measure voltage between ECM connector and chassis ground. Connector & terminal (B135) No. 4 (+) — Chassis ground (–):	Is the voltage less than 1 V?	Repair poor con- tact in ECM con- nector.	Go to step 4.
4	CHECK OUTPUT SIGNAL FROM ECM. Measure voltage between ECM and chassis ground. Connector & terminal (B135) No. 4 (+) — Chassis ground (–):	Does the voltage change from 1 V to 4 V while moni- toring the value with volt- age meter?	Even if MIL lights up, the circuit has returned to a nor- mal condition at this time. NOTE: In this case, repair the follow- ing: • Poor contact in ECM connector • Poor contact in TCM connector	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.
5	CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR. Measure voltage between TCM and chassis ground. Connector & terminal (B54) No. 4 (+) — Chassis ground (-):	Is the voltage more than 4 V?	Go to step 6 .	Repair open cir- cuit in harness between ECM and TCM connec- tor.
6	CHECK POOR CONTACT. Check poor contact in TCM connector.	Is there poor contact in TCM connector?	Repair poor con- tact in TCM con- nector.	Check TCM power supply line and grounding line.

Engine (DIAGNOSTICS)

DC: DTC P1698 — ENGINE TORQUE CONTROL CUT SIGNAL CIRCUIT LOW INPUT — SUBBLICITS

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	 CHECK OUTPUT SIGNAL FROM ECM. 1) Start engine, and warm-up the engine. 2) Turn ignition switch to OFF. 3) Turn ignition switch to ON. 4) Measure voltage between ECM and chassis ground. Connector & terminal (B134) No. 31 (+) — Chassis ground (-): 	Is the voltage more than 3 V?	Repair poor con- tact in ECM con- nector.	Go to step 2.
2	 CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connectors from ECM and TCM. 3) Measure resistance of harness between ECM and chassis ground. Connector & terminal (B134) No. 31 — Chassis ground: 	Is the resistance less than 10 Ω?	Repair ground short circuit in harness between ECM and TCM connector.	Go to step 3.
3	CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR. Measure resistance of harness betwee ECM and TCM connector. Connector & terminal (B134) No. 31 — (B54) No. 2:	Is the resistance less than 1 Ω ?	Repair poor con- tact in ECM or TCM connector.	Repair open cir- cuit in harness between ECM and TCM connec- tor.

Engine (DIAGNOSTICS)

DD: DTC P1699 — ENGINE TORQUE CONTROL CUT SIGNAL CIRCUIT HIGH INPUT — SOUBCOL 716

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	 CHECK OUTPUT SIGNAL FROM ECM. 1) Start engine, and warm-up the engine. 2) Turn ignition switch to OFF. 3) Disconnect connector from TCM. 4) Turn ignition switch to ON. 5) Measure voltage between ECM and chassis ground. Connector & terminal (B134) No. 31 (+) — Chassis ground (-): 	Is the voltage less than 3 V?	Go to step 2.	Repair battery short circuit in harness between ECM and TCM connector. After repair, replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>
2	CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR. 1) Turn ignition switch to OFF. 2) Measure voltage between ECM and chas- sis ground. Connector & terminal (B134) No. 31 (+) — Chassis ground (-):	Does the voltage change more than 10 V by shaking harness and connector of ECM while monitoring the value with voltage meter?	Repair battery short circuit in harness between ECM and TCM connector. After repair, replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>	Contact with SOA service. NOTE: Inspection by DTM is required, because probable cause is deterio- ration of multiple parts.

Engine (DIAGNOSTICS)

DE: DTC P1700 — THROTTLE POSITION SENSOR CIRCUIT MALFUNCTION FOR AUTOMATIC TRANSMISSION — SOUBCACES

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:

• Shift point too high or too low; engine brake not effected in "3" range; excessive shift shock; excessive tight corner "braking"

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

NOTE:

Check throttle position sensor circuit. <Ref. to AT-48 TROUBLE CODE 31 — THROTTLE POSITION SEN-SOR —, Diagnostic Procedure with Trouble Code.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

DF: DTC P1701 — CRUISE CONTROL SET SIGNAL CIRCUIT MALFUNCTION FOR AUTOMATIC TRANSMISSION — SUBJECT 9

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	 CHECK HARNESS BETWEEN TCM AND CCM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connectors from TCM and CCM. 3) Measure resistance of harness between TCM and CCM connector. Connector & terminal (B54) No. 11 — (B94) No. 3: 	Is the resistance less than 1 Ω?	Go to step 2.	Repair open cir- cuit in harness between TCM and CCM connector.
2	CHECK HARNESS BETWEEN TCM AND CCM CONNECTOR. Measure resistance of harness between TCM and chassis ground. Connector & terminal (B54) No. 11 — Chassis ground:	Is the resistance less than 10 Ω?	Repair short cir- cuit in harness between TCM and CCM connector.	Go to step 3 .
3	 CHECK INPUT SIGNAL FOR TCM. 1) Connect connector to TCM and CCM. 2) Lift-up the vehicle or set the vehicle on free rollers. CAUTION: On AWD models, raise all wheels off ground. 3) Start the engine. 4) Cruise control main switch to ON. 5) Move selector lever to "D" and slowly increase vehicle speed to 50 km/h (31 MPH). 6) Cruise control command switch to ON. 7) Measure voltage between TCM and chassis ground. Connector & terminal (B54) No. 11 (+) — Chassis ground (-): 	Is the resistance less than 1 V?	Go to step 4.	Check cruise con- trol command switch circuit. <ref. cc-6<br="" to="">INSPECTION, Cruise Control Command Switch.></ref.>
4	CHECK POOR CONTACT. Check poor contact in TCM connector.	Is there poor contact in TCM connector?	Repair poor con- tact in TCM con- nector.	Replace TCM. <ref. at-42<br="" to="">Transmission Control Module (TCM).></ref.>

Engine (DIAGNOSTICS)

DG: DTC P1703 — LOW CLUTCH TIMING CONTROL SOLENOID VALVE CIRCUIT MALFUNCTION — 5006602C31

• DTC DETECTING CONDITION:

• Two consecutive driving cycles with fault

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.

NOTE:

Check low clutch timing control solenoid valve circuit. <Ref. to AT-82 TROUBLE CODE 73 — LOW CLUTCH TIMING SOLENOID —, Diagnostic Procedure with Trouble Code.>

Engine (DIAGNOSTICS)

MEMO:

Engine (DIAGNOSTICS)

DH: DTC P1711 — ENGINE TORQUE CONTROL SIGNAL 1 CIRCUIT

MALFUNCTION — S008602G17

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Excessive shift shock

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	CHECK INPUT SIGNAL FOR ECM. 1) Turn ignition switch to ON. 2) Measure voltage between ECM and chas- sis ground. Connector & terminal (B135) No. 16 (+) — Chassis ground (-):	Is the voltage more than 4.5 V?	Go to step 2.	Go to step 4.
2	CHECK INPUT SIGNAL FOR ECM. Measure voltage between ECM and chassis ground. Connector & terminal (B135) No. 16 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Repair battery short circuit in harness between ECM and TCM connector.	Go to step 3.
3	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>
4	 CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connectors from ECM and TCM. 3) Measure resistance of harness between ECM and TCM connector. Connector & terminal (B135) No. 16 — (B54) No. 13: 	Is the resistance less than 1 Ω?	Go to step 5.	Repair open cir- cuit in harness between ECM and TCM connec- tor.
5	CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR. Measure resistance of harness between ECM and chassis ground. Connector & terminal (B135) No. 16 — Chassis ground:	Is the resistance less than 10 Ω?	Repair ground short circuit in harness between ECM and TCM connector.	Go to step 6.
6	CHECK POOR CONTACT. Check poor contact in TCM connector.	Is there poor contact in TCM connector?	Repair poor con- tact in TCM con- nector.	Replace TCM. <ref. at-42<br="" to="">Transmission Control Module (TCM).></ref.>

Engine (DIAGNOSTICS)

DI: DTC P1712 — ENGINE TORQUE CONTROL SIGNAL 2 CIRCUIT

MALFUNCTION — SOUBBODIE G1B

• DTC DETECTING CONDITION:

- Two consecutive driving cycles with fault
- TROUBLE SYMPTOM:
 - Excessive shift shock

CAUTION:

After repair or replacement of faulty parts, conduct Clear Memory Mode <Ref. to EN(H4)-63 OPERATION, Clear Memory Mode.> and Inspection Mode <Ref. to EN(H4)-60 OPERATION, Inspection Mode.>.



No.	Step	Check	Yes	No
1	 CHECK INPUT SIGNAL FOR ECM. 1) Turn ignition switch to ON. 2) Measure voltage between ECM and chassis ground. Connector & terminal (B135) No. 17 (+) — Chassis ground (-): 	Is the voltage more than 4.5 V?	Go to step 2.	Go to step 4 .
2	CHECK INPUT SIGNAL FOR ECM. Measure voltage between ECM and chassis ground. Connector & terminal (B135) No. 17 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Repair battery short circuit in harness between ECM and TCM connector.	Go to step 3.
3	CHECK POOR CONTACT. Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair poor con- tact in ECM con- nector.	Replace ECM. <ref. to<br="">FU(H4)-67 Engine Control Module.></ref.>
4	 CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR. 1) Turn ignition switch to OFF. 2) Disconnect connectors from ECM and TCM. 3) Measure resistance of harness between ECM and TCM connector. Connector & terminal (B135) No. 17 — (B54) No. 21: 	Is the resistance less than 1 Ω?	Go to step 5 .	Repair open cir- cuit in harness between ECM and TCM connec- tor.
5	CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR. Measure resistance of harness between ECM and chassis ground. Connector & terminal (B135) No. 17 — Chassis ground:	Is the resistance less than 10 Ω ?	Repair ground short circuit in harness between ECM and TCM connector.	Go to step 6.
6	CHECK POOR CONTACT. Check poor contact in TCM connector.	Is there poor contact in TCM connector?	Repair poor con- tact in TCM con- nector.	Replace TCM. <ref. at-42<br="" to="">Transmission Control Module (TCM).></ref.>