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2015 LEXUS RX OEM Service and Repair Workshop Manual

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STATUS OF A/F (O2) SENSOR CURRENT B1S1 OR A/F (O2) SENSOR CURRENT B2S1	STATUS OF A/F (O2) SENSOR CURRENT B1S2 OR A/F (O2) SENSOR CURRENT B2S2	AIR FUEL RATIO CONDITION AND AIR FUEL RATIO SENSOR CONDITION	SUSPECTED TROUBLE AREA	PROCEED TO
			• Engine coolant temperature sensor	
Lean	Lean/Rich	Air fuel ratio sensor (sensor 1) malfunction	• Air fuel ratio sensor (sensor 1)	B
Rich	Lean/Rich	Air fuel ratio sensor (sensor 1) malfunction	• Air fuel ratio sensor (sensor 1)	

Lean: During the Control the Injection Volume for A/F Sensor Active Test, the air fuel ratio sensor (sensor 1) output current (A/F (O2) Sensor Current B1S1 or A/F (O2) Sensor Current B2S1) is consistently more than 0.037 mA, and the air fuel ratio sensor (sensor 2) output current (A/F (O2) Sensor Current B1S2 or A/F (O2) Sensor Current B2S2) is consistently more than 0.33 mA.
Rich: During the Control the Injection Volume for A/F Sensor Active Test, the air fuel ratio sensor (sensor 1) output current (A/F (O2) Sensor Current B1S1 or A/F (O2) Sensor Current B2S1) is consistently below -0.075 mA, and the air fuel ratio sensor (sensor 2) output current (A/F (O2) Sensor Current B1S2 or A/F (O2) Sensor Current B2S2) is consistently below -0.86 mA.
Lean/Rich: During the Control the Injection Volume for A/F Sensor Active Test, the output current of the air fuel ratio sensor (sensor 1) or air fuel ratio sensor (sensor 2) alternate correctly.

HINT:

Refer to "Data List / Active Test" [A/F (O2) Sensor Current B1S1, A/F (O2) Sensor Current B1S2, A/F (O2) Sensor Current B2S1 and A/F (O2) Sensor Current B2S2].

Click here INFO

Post-procedure1

(e) None

B ▶ **GO TO STEP 30**

A ▼

24.	READ VALUE USING GTS (COOLANT TEMPERATURE)

(a) Read the Data List twice, when the engine is both cold and warmed up.

Powertrain > Engine > Data List

TESTER DISPLAY
Coolant Temperature

Standard:

OK

27.	INSPECT SPARK PLUG

Click here INFO

NG ▶ **REPLACE SPARK PLUG**

OK

28.	CHECK FOR SPARK (SPARK TEST)

Click here INFO

HINT:

If the result of the spark test is normal, proceed to the next step.

NEXT ▶ **GO TO STEP 37**

29.	CHECK FUEL LINE

(a) Check the fuel lines for leaks or blockage.

OK ▶ **GO TO FUEL PUMP CONTROL CIRCUIT**

NG ▶ **REPAIR OR REPLACE FUEL SYSTEM**

30.	INSPECT AIR FUEL RATIO SENSOR (SENSOR 1) (HEATER RESISTANCE)

Click here INFO

NG ▶ **REPLACE AIR FUEL RATIO SENSOR (SENSOR 1)**

OK

31.	CHECK TERMINAL VOLTAGE (POWER SOURCE OF AIR FUEL RATIO SENSOR (SENSOR 1))

Pre-procedure1

(a) Disconnect the air fuel ratio sensor (sensor 1) connector.

(b) Turn the ignition switch to ON.

Procedure1

(c) Measure the voltage according to the value(s) in the table below.

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
C85-1 (HA2A) or C107-7 (HA2A) - Body ground and other terminals	Always	10 kΩ or higher	kΩ
C85-3 (A2A+) or C107-54 (A2A+) - Body ground and other terminals	Always	10 kΩ or higher	kΩ
C85-4 (A2A-) or C107-53 (A2A-) - Body ground and other terminals	Always	10 kΩ or higher	kΩ

Post-procedure1

(d) None

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

33.	REPLACE AIR FUEL RATIO SENSOR (SENSOR 1)

HINT:

Click here INFO

NEXT ▼

34.	CLEAR DTC

Pre-procedure1

(a) None

Procedure1

(b) Clear the DTCs.

Powertrain > Engine > Clear DTCs

Post-procedure1

(c) Turn the ignition switch off and wait for at least 30 seconds.

NEXT ▼

35.	CONFIRM WHETHER MALFUNCTION HAS BEEN SUCCESSFULLY REPAIRED

Pre-procedure1

(a) Drive the vehicle in accordance with the driving pattern described in Confirmation Driving Pattern.

Procedure1

(b) Read the DTCs.

(a) Check the connection and terminal contact pressure of connectors and wire harnesses between the mass air flow meter sub-assembly and ECM.

HINT:

Click here INFO

Repair any problems.

NEXT

38.	CLEAR DTC

Pre-procedure1

(a) None

Procedure1

(b) Clear the DTCs.

Powertrain > Engine > Clear DTCs

Post-procedure1

(c) Turn the ignition switch off and wait for at least 30 seconds.

NEXT

39.	CONFIRM WHETHER MALFUNCTION HAS BEEN SUCCESSFULLY REPAIRED

Pre-procedure1

(a) Drive the vehicle in accordance with the driving pattern described in Confirmation Driving Pattern.

Procedure1

(b) Read the DTCs.

Powertrain > Engine > Trouble Codes

RESULT	PROCEED TO
DTCs are not output	A
P042000 or P043000 is output	B

Post-procedure1

(c) None

A END

B

42.	CLEAR DTC

Pre-procedure1

(a) None

Procedure1

(b) Clear the DTCs.

Powertrain > Engine > Clear DTCs

Post-procedure1

(c) Turn the ignition switch off and wait for at least 30 seconds.

NEXT

43.	CONFIRM WHETHER MALFUNCTION HAS BEEN SUCCESSFULLY REPAIRED

Pre-procedure1

(a) Drive the vehicle in accordance with the driving pattern described in Confirmation Driving Pattern.

Procedure1

(b) Read the DTCs.

Powertrain > Engine > Trouble Codes

RESULT	PROCEED TO
DTCs are not output	A
P042000 or P043000 is output	B

Post-procedure1

(c) None

A **END**

B

44.	REPLACE ECM

HINT:

Click here INFO

NEXT **GO TO STEP 47**

45.	REPAIR OR REPLACE EXHAUST SYSTEM

(a) Repair or replace exhaust system.

HINT:

Confirm the replacement parts, referring to the illustration in Catalyst Location.

(a) Read the DTCs.

Powertrain > Engine > Trouble Codes

RESULT	PROCEED TO
P042000 and P043000 are output	A
P042000 is output	B
P043000 is output	C

A ▶ **REPLACE CONVERTER ASSEMBLY RH AND LH (TWC: FRONT AND REAR CATALYST)**

B ▶ **REPLACE CONVERTER ASSEMBLY RH (TWC: FRONT AND REAR CATALYST)**

C ▶ **REPLACE CONVERTER ASSEMBLY LH (TWC: FRONT AND REAR CATALYST)**

49.	CHECK FOR EXHAUST GAS LEAK

(a) Check for exhaust gas leaks.

OK:
No gas leaks in exhaust system.

HINT:

Perform "Inspection After Repair" after repairing or replacing the exhaust system.

Click here INFO

NG ▶ **REPAIR OR REPLACE EXHAUST SYSTEM**

OK ▼

50.	REPLACE AIR FUEL RATIO SENSOR (SENSOR 2)

HINT:

Click here INFO

NEXT ▼

51.	CLEAR DTC

Pre-procedure1

(a) None

Procedure1

(b) Clear the DTCs.

Last Modified: 10-07-2024	6.11:8.1.0	**Doc ID:** RM100000002HZGV
Model Year Start: 2024	**Model:** GX550	**Prod Date Range:** [12/2023 -]
Title: V35A-FTS (ENGINE CONTROL): SFI SYSTEM (w/ Canister Pump Module): P11EA00,...,P21A100; Bank 1 Air-Fuel Ratio Imbalance (Port); 2024 MY GX550 [12/2023 -]		

DTC	**P11EA00**	**Bank 1 Air-Fuel Ratio Imbalance (Port)**
DTC	**P11EB00**	**Bank 2 Air-Fuel Ratio Imbalance (Port)**
DTC	**P11EC00**	**Cylinder #1 Air-Fuel Ratio Imbalance (Port)**
DTC	**P11ED00**	**Cylinder #2 Air-Fuel Ratio Imbalance (Port)**
DTC	**P11EE00**	**Cylinder #3 Air-Fuel Ratio Imbalance (Port)**
DTC	**P11EF00**	**Cylinder #4 Air-Fuel Ratio Imbalance (Port)**
DTC	**P11F000**	**Cylinder #5 Air-Fuel Ratio Imbalance (Port)**
DTC	**P11F100**	**Cylinder #6 Air-Fuel Ratio Imbalance (Port)**
DTC	**P219A00**	**Bank 1 Air-Fuel Ratio Imbalance**
DTC	**P219B00**	**Bank 2 Air-Fuel Ratio Imbalance**
DTC	**P219C00**	**Cylinder 1 Air-Fuel Ratio Imbalance**
DTC	**P219D00**	**Cylinder 2 Air-Fuel Ratio Imbalance**
DTC	**P219E00**	**Cylinder 3 Air-Fuel Ratio Imbalance**
DTC	**P219F00**	**Cylinder 4 Air-Fuel Ratio Imbalance**
DTC	**P21A000**	**Cylinder 5 Air-Fuel Ratio Imbalance**
DTC	**P21A100**	**Cylinder 6 Air-Fuel Ratio Imbalance**

DESCRIPTION

Refer to DTC P003012.

Click here INFO

Refer to DTC P030000.

Click here INFO

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	DTC OUTPUT FROM	PRIORITY	NOTE
			• ECM				
P11ED00	Cylinder #2 Air-Fuel Ratio Imbalance (Port)	The difference in air fuel ratios between the cylinders exceeds the threshold (2 trip detection logic).	• Port fuel injector assembly • Direct fuel injector assembly • Intake system • Gas leaks from exhaust system • Ignition system • Compression pressure • Air fuel ratio sensor (bank 2 sensor 1) • ECM	Comes on	Engine	B	SAE: P11ED
P11EE00	Cylinder #3 Air-Fuel Ratio Imbalance (Port)	The difference in air fuel ratios between the cylinders exceeds the threshold (2 trip detection logic).	• Port fuel injector assembly • Direct fuel injector assembly • Intake system • Gas leaks from exhaust system • Ignition system • Compression pressure • Air fuel ratio sensor (bank 1 sensor 1) • ECM	Comes on	Engine	B	SAE: P11EE
P11EF00	Cylinder #4 Air-Fuel Ratio Imbalance (Port)	The difference in air fuel ratios between the cylinders exceeds the threshold (2 trip detection logic).	• Port fuel injector assembly • Direct fuel injector assembly • Intake system • Gas leaks from exhaust system • Ignition system • Compression pressure • Air fuel ratio sensor (bank 2	Comes on	Engine	B	SAE: P11EF

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	DTC OUTPUT FROM	PRIORITY	NOTE
			• Air fuel ratio sensor (bank 1 sensor 1) • ECM				
P219B00	Bank 2 Air-Fuel Ratio Imbalance	The difference in air fuel ratios between the cylinders exceeds the threshold (2 trip detection logic).	• Port fuel injector assembly • Direct fuel injector assembly • Intake system • Gas leaks from exhaust system • Ignition system • Compression pressure • Air fuel ratio sensor (bank 2 sensor 1) • ECM	Comes on	Engine	B	SAE: P219B
P219C00	Cylinder 1 Air-Fuel Ratio Imbalance	The difference in air fuel ratios between the cylinders exceeds the threshold (2 trip detection logic).	• Port fuel injector assembly • Direct fuel injector assembly • Intake system • Gas leaks from exhaust system • Ignition system • Compression pressure • Air fuel ratio sensor (bank 1 sensor 1) • ECM	Comes on	Engine	B	SAE: P219C
P219D00	Cylinder 2 Air-Fuel Ratio Imbalance	The difference in air fuel ratios between the cylinders exceeds the threshold (2 trip detection logic).	• Port fuel injector assembly • Direct fuel injector assembly • Intake system • Gas leaks from exhaust system • Ignition system	Comes on	Engine	B	SAE: P219D