Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002BLUP
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: M20A-FXS (ENGINE CONTROL): SFI SYSTEM: P01052A; Manifold Absolute Pressure / Barometric Pressure Sensor Signal Stuck in Range; 2023 - 2024 MY Prius Prius Prime [03/2023 -]		

DTC	**P01052A**	**Manifold Absolute Pressure / Barometric Pressure Sensor Signal Stuck in Range**

DESCRIPTION

Refer to DTC P010511.

Click here INFO

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	DTC OUTPUT FROM	PRIORITY	NOTE
P01052A	Manifold Absolute Pressure / Barometric Pressure Sensor Signal Stuck in Range	Intake manifold pressure measured after engine start drops by less than 3 kPa [0.4 psi] compared to the intake manifold pressure (atmospheric pressure) measured before engine start (2 trip detection logic).	• Intake system • Manifold absolute pressure sensor	Comes on	Engine	B	SAE Code: P0106

MONITOR DESCRIPTION

When the intake manifold pressure measured after engine start drops by less than 3 kPa [0.4 psi] compared to the intake manifold pressure (atmospheric pressure) measured before engine start, the ECM interprets this as a malfunction of the manifold absolute pressure sensor and stores DTC P01052A.

MONITOR STRATEGY

Related DTCs	P0106: Manifold absolute pressure sensor stuck monitoring
Required Sensors/Components (Main)	Manifold absolute pressure sensor
Required Sensors/Components (Related)	-
Frequency of Operation	Continuous
Duration	6 seconds
MIL Operation	2 driving cycles
Sequence of Operation	None

TYPICAL ENABLING CONDITIONS

Monitor runs whenever the following DTCs are not stored	P0010, P1360, P1362, P1364, P1366, P2614 (Motor drive VVT system control module) P0011 (VVT system - advance) P0012 (VVT system - retard) P0014 (Exhaust VVT system - advance) P0015 (Exhaust VVT system - retard) P0016 (VVT system - misalignment) P0017 (Exhaust VVT system - misalignment) P0107, P0108 (Manifold absolute pressure) P0112, P0113 (Intake air temperature sensor) P0117, P0118 (Engine coolant temperature sensor) P0121, P0122, P0123, P0222, P0223, P2135 (Throttle position sensor) P0125 (Insufficient coolant temperature for closed loop fuel control) P0335, P0337, P0338 (Crankshaft position sensor) P0340, P0342, P0343 (Camshaft position sensor) P0365, P0367, P0368 (Exhaust camshaft position sensor) P0401 (EGR system (closed)) P0489, P0490 (EGR control circuit) P106A (Evaporative emission control system pressure sensor - manifold pressure sensor correlation)
Auxiliary battery voltage	10.5 V or higher
Engine coolant temperature	30°C (86°F) or higher
Intake air temperature	-10°C (14°F) or higher
Engine speed	900 rpm or higher
Throttle valve	Close
EGR valve	Close
Atmospheric pressure	76 kPa(abs) [11 psi(abs)] or higher

TYPICAL MALFUNCTION THRESHOLDS

Difference between intake manifold absolute pressure and atmospheric pressure	Higher than -3 kPa [-0.4 psi]

CONFIRMATION DRIVING PATTERN

HINT:

- After repair has been completed, clear the DTC and then check that the vehicle has returned to normal by performing the following All Readiness check procedure.

  Click here INFO
- When clearing the permanent DTCs, refer to the "CLEAR PERMANENT DTC" procedure.

  Click here INFO

1. Clear the DTCs (even if no DTCs are stored, perform the clear DTC procedure).
2. Turn the ignition switch off and wait for at least 30 seconds.
3. Put the engine in Inspection Mode (Maintenance Mode).

   Click here INFO
4. Start the engine and warm it up until the engine coolant temperature is 75°C (167°F) or higher [A].
5. Idle the engine for 10 seconds or more [B].

6. Enter the following menus: Powertrain / Engine / Trouble Codes [C].
7. Read the pending DTCs.

HINT:

- If a pending DTC is output, the system is malfunctioning.
- If a pending DTC is not output, perform the following procedure.

8. Enter the following menus: Powertrain / Engine / Utility / All Readiness.
9. Input the DTC: P01052A.
10. Check the DTC judgment result.

HINT:

- If the judgment result is NORMAL, the system is normal.
- If the judgment result is ABNORMAL, the system is malfunctioning.
- If the judgment result is INCOMPLETE, perform steps [A] through [C] again.
- [A] to [C]: Normal judgment procedure.

  The normal judgment procedure is used to complete DTC judgment and also used when clearing permanent DTCs.
- When clearing the permanent DTCs, do not disconnect the cable from the auxiliary battery terminal or attempt to clear the DTCs during this procedure, as doing so will clear the universal trip and normal judgment histories.

CAUTION / NOTICE / HINT

NOTICE:

- Vehicle Control History may be stored in the hybrid vehicle control ECU if the engine is malfunctioning. Certain vehicle condition information is recorded when Vehicle Control History is stored. Reading the vehicle conditions recorded in both the Freeze Frame Data and Vehicle Control History can be useful for troubleshooting.

  for HEV Model: Click here INFO

  for PHEV Model: Click here INFO

  (Select Powertrain in Health Check and then check the time stamp data.)
- If any "Engine Malfunction" Vehicle Control History item has been stored in the hybrid vehicle control ECU, make sure to clear it. However, as all Vehicle Control History items are cleared simultaneously, if any Vehicle Control History items other than "Engine Malfunction" are stored, make sure to perform any troubleshooting for them before clearing Vehicle Control History.

  for HEV Model: Click here INFO

  for PHEV Model: Click here INFO

PROCEDURE

1.	**CHECK ANY OTHER DTCS OUTPUT (IN ADDITION TO DTC P01052A)**

(a) Read the DTCs.

Powertrain > Engine > Trouble Codes

RESULT	PROCEED TO
P01052A and other DTCs are output	A
P01052A is output	B

HINT:

If any DTCs other than P01052A are output, troubleshoot those DTCs first.

A ▶ **GO TO DTC CHART**

B ▼

2.	**READ VALUE USING GTS (INTAKE MANIFOLD ABSOLUTE PRESSURE)**

(a) According to the display on the GTS, read the Data List.

Powertrain > Engine > Data List

TESTER DISPLAY
Intake Manifold Absolute Pressure

RESULT	PROCEED TO
The value of Intake Manifold Absolute Pressure is between 80 and 110 kPa(abs)	A
None of the above conditions are met	B

HINT:

80 and 110 kPa (11.6 and 15.95 psi)

B ▶ **GO TO STEP 4**

A ▼

3.	**READ VALUE USING GTS (INTAKE MANIFOLD ABSOLUTE PRESSURE)**

Pre-procedure1

(a) Put the engine in Inspection Mode (Maintenance Mode).

Powertrain > Hybrid Control > Utility

TESTER DISPLAY
Inspection Mode

(b) Start and idle the engine.

Procedure1

(c) According to the display on the GTS, read the Data List.

Powertrain > Engine > Data List

TESTER DISPLAY
Intake Manifold Absolute Pressure

RESULT	PROCEED TO
The value of Intake Manifold Absolute Pressure is between 20 and 40 kPa(abs)	A
None of the above conditions are met	B

HINT:

20 and 40 kPa (2.9 and 5.8 psi)

Post-procedure1

(d) None

A ▶ **CHECK FOR INTERMITTENT PROBLEMS**

B ▶ **GO TO STEP 4**

4.	**CHECK INTAKE SYSTEM**

(a) Check the intake system for vacuum leaks.

Click here INFO

OK:

No leaks from intake system.

HINT:

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

Click here INFO

OK ▶ **REPLACE MANIFOLD ABSOLUTE PRESSURE SENSOR**

NG ▶ **REPAIR OR REPLACE INTAKE SYSTEM**