

Component Inspection

1.CHECK MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR-1

1. Turn ignition switch OFF.
2. Start engine and warm it up to normal operating temperature.
3. Turn ignition switch OFF, wait at least 5 seconds and then turn ON.
4. Check the voltage between ECM harness connector terminals as follows.

ECM		
Connector	Terminal	
F52	120	106

note	<ul style="list-style-type: none"> • To avoid the influence of intake manifold vacuum, check the voltage 1 or more minutes past after engine is stopped. • Because the sensor is absolute pressure sensor, output value may differ depending on atmospheric pressure and altitude.
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5. Measure the atmospheric pressure.

note	As the atmospheric pressure described on the synoptic chart is the value at sea level, compensate the pressure with the following chart.
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Altitude (m)	Compensated pressure (hPa)
0	0
200	-24
400	-47
600	-70
800	-92
1000	-114
1500	-168
2000	-218

6. Check the manifold absolute pressure sensor value corresponding to the atmospheric pressure.

Atmospheric pressure (hPa)	Voltage (V)
800	3.1 – 3.7
850	3.3 – 3.9
900	3.5 – 4.1
950	3.8 – 4.3
1000	4.0 – 4.6
1050	4.2 – 4.8

Q. Is the inspection result normal?

Yes



No

Replace MAP sensor. Refer to Removal and Installation [Exploded View](#)

2.CHECK MAP SENSOR-2

1. Start engine and let it idle.
2. Check intake manifold vacuum.
3. Check the voltage between ECM harness connector terminals as follows.

ECM		
Connector	Terminal	
F52	120	106

4. Confirm the difference of the voltage when engine is stopped and at idling is within the values shown in the following chart.

Intake manifold vacuum [kPa (mmHg)]	Voltage difference
-40 (-300)	1.5 – 2.0 V
-53.3 (-400)	2.0 – 2.6 V
-66.7 (-500)	2.6 – 3.2 V
-80 (-600)	3.2 – 3.8 V

Q. Is the inspection result normal?**Yes**

INSPECTION END

NoReplace MAP sensor. Refer to Removal and Installation [Exploded View](#) 