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Component Inspection

1.CHECK MASS AIR FLOW SENSOR-1

With M.U.T.-III SE

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Start engine and warm it up to normal operating temperature.
4. Connect M.U.T.-III SE and select “DATA MONITOR” mode of “ENGINE”.
5. Select “MASS AIR FLOW SENSOR (g/s)” and check indication.

Monitor item	Condition	Indication
MASS AIR FLOW SENSOR (g/s)	Ignition switch ON (Engine stopped.)	0 g/s
	At 1,500 rpm (Engine is warmed-up to normal operating temperature.)	3.1- 5,3 g/s
	At 2,500 rpm (Engine is warmed-up to normal operating temperature.)	4.9 - 9.7 g/s
	At 4,000 rpm (Engine is warmed-up to normal operating temperature.)	9.7 - 19.3 g/s

Without M.U.T.-III SE

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Start engine and warm it up to normal operating temperature.
4. Check the frequency between ECM harness connector terminals under the following conditions.

ECM			Condition	Frequency
Connector	+	–		
	Terminal			
F51	47	50	Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz
			At 1,500 rpm (Engine is warmed-up to normal operating temperature.)	5,400 - 5,900 Hz
			At 2,500 rpm (Engine is warmed-up to normal operating temperature.)	5,800 - 6,500 Hz
			At 4,000 rpm (Engine is warmed-up to normal operating temperature.)	6,400 - 7,200 Hz

Q.Is the inspection result normal?

Yes INSPECTION END

No .

2.CHECK FOR THE CAUSE OF UNEVEN AIR FLOW THROUGH MASS AIR FLOW SENSOR

1. Turn ignition switch OFF.
2. Check for the cause of uneven air flow through mass air flow sensor. Refer to the following.
   - Crushed air ducts
   - Malfunctioning seal of air cleaner element
   - Uneven dirt of air cleaner element
   - Intake valve deposits
   - Improper specification of intake air system parts

Q.Is the inspection result normal?

Yes

No

3.CHECK MASS AIR FLOW SENSOR-2

Ⓔ With M.U.T.-III SE

1. Repair or replace malfunctioning part.
2. Start engine and warm it up to normal operating temperature.
3. Connect M.U.T.-III SE and select “DATA MONITOR” mode of “ENGINE”.
4. Select “MASS AIR FLOW SENSOR (g/s)” and check indication.

Monitor item	Condition	Indication
MASS AIR FLOW SENSOR (g/s)	Ignition switch ON (Engine stopped.)	0 g/s
	At 1,500 rpm (Engine is warmed-up to normal operating temperature.)	3.1- 5,3 g/s
	At 2,500 rpm (Engine is warmed-up to normal operating temperature.)	4.9 - 9.7 g/s
	At 4,000 rpm (Engine is warmed-up to normal operating temperature.)	9.7 - 19.3 g/s

Ⓝ Without M.U.T.-III SE

1. Repair or replace malfunctioning part.
2. Start engine and warm it up to normal operating temperature.
3. Check the frequency between ECM harness connector terminals under the following conditions.

ECM			Condition	Frequency
Connector	+	–		
	Terminal			
F51	47	50	Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz
			At 1,500 rpm (Engine is warmed-up to normal operating temperature.)	5,400 - 5,900 Hz
			At 2,500 rpm (Engine is warmed-up to normal operating temperature.)	5,800 - 6,500 Hz
			At 4,000 rpm (Engine is warmed-up to normal operating temperature.)	6,400 - 7,200 Hz

Q.Is the inspection result normal?

Yes INSPECTION END

No .

4.CHECK MASS AIR FLOW SENSOR-3

With M.U.T.-III SE

1. Turn ignition switch OFF.
2. Disconnect mass air flow sensor harness connector and reconnect it again.
3. Start engine and warm it up to normal operating temperature.
4. Connect M.U.T.-III SE and select “DATA MONITOR” mode of “ENGINE”.
5. Select “MASS AIR FLOW SENSOR (g/s)” and check indication.

Monitor item	Condition	Indication
MASS AIR FLOW SENSOR (g/s)	Ignition switch ON (Engine stopped.)	0 g/s
	At 1,500 rpm (Engine is warmed-up to normal operating temperature.)	3.1- 5,3 g/s
	At 2,500 rpm (Engine is warmed-up to normal operating temperature.)	4.9 - 9.7 g/s
	At 4,000 rpm (Engine is warmed-up to normal operating temperature.)	9.7 - 19.3 g/s

⊗Without M.U.T.-III SE

1. Turn ignition switch OFF.
2. Disconnect MAF sensor harness connector and reconnect it again.
3. Start engine and warm it up to normal operating temperature.
4. Check the frequency between ECM harness connector terminals under the following conditions.

ECM			Condition	Frequency
Connector	+	–		
	Terminal			
F51	47	50	Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz
			At 1,500 rpm (Engine is warmed-up to normal operating temperature.)	5,400 - 5,900 Hz
			At 2,500 rpm (Engine is warmed-up to normal operating temperature.)	5,800 - 6,500 Hz
			At 4,000 rpm (Engine is warmed-up to normal operating temperature.)	6,400 - 7,200 Hz

Q.Is the inspection result normal?

Yes INSPECTION END

No Clean or replace mass air flow sensor. Refer to Exploded View.