Pre-Diagnostic Information (Warnings, schematics, etc.)

Mass Air Flow (MAF) Sensor	**Pinpoint Test**	**DC**

DC1 DIAGNOSTIC TROUBLE CODE (DTC) 26/159: CHECK VPWR CIRCUIT VOLTAGE

DTC 26/159 indicates that the Mass Air Flow (MAF) sensor is out of Self-Test range and that the MAF Signal was greater than .70 volts during Key On, Engine Off Self-Test. Engine Running DTC 26/159 indicates that the MAF Signal was not between .20 and 1.50 volts during Key On Engine Running Self-Test.

NOTE:
DTC 26/159 could be generated by the garage exhaust ventilation system. Remove ventilation system and properly vent to outside atmosphere. Rerun KOEO Self-Test.

Possible causes:

-- Damaged Idle Air Control (IAC) solenoid.

-- Damaged MAF sensor.

-- MAF sensor partially connected.

-- Damaged Powertrain Control Module (PCM).

-- Air leak before or after MAF sensor.

- **Is DTC 12/13/411/412 present?**

Yes
For DTC 13/411:
GO to «KE15».
For DTC 12/412:
GO to «KE1».

No
GO to «DC2».

Pre-Diagnostic Information
(Warnings, schematics, etc.)

Mass Air Flow (MAF) Sensor	Pinpoint Test	DC

DC2 CHECK VPWR CIRCUIT VOLTAGE

- Key off.
- Disconnect MAF sensor.
- Key on, engine off.
- Measure voltage between VPWR circuit at the MAF sensor vehicle harness connector and battery negative post.
- **Is voltage greater than 10.5 volts?**

Yes
GO to «DC3».

No
SERVICE open in VPWR circuit.
RERUN «Quick Test».

Pre-Diagnostic Information
(Warnings, schematics, etc.)

Mass Air Flow (MAF) Sensor	**Pinpoint Test**	**DC**

DC3 CHECK MAF SENSOR GROUND

- Key on, engine off.
- MAF sensor disconnected.
- Measure voltage between VPWR circuit and PWR GND circuit at the MAF sensor vehicle harness connector.
- **Is voltage greater than 10.5 volts?**

Yes

GO to «DC13».

No

SERVICE open PWR GND circuit.
RECONNECT MAF sensor.
RERUN «Quick Test».

Pre-Diagnostic Information (Warnings, schematics, etc.)

Mass Air Flow (MAF) Sensor	Pinpoint Test	DC

DC13 DIAGNOSTIC TROUBLE CODE (DTC) 66/157 OR 72/129: AIR LEAK AT MAF SENSOR

Engine Running DTC 72/129 indicates insufficient MAF change during Dynamic Response Test.

Possible causes:

-- Open MAF circuit.

-- Open VPWR circuit to MAF sensor.

-- Open PWR GND circuit to MAF sensor.

-- Open MAF RTN circuit to MAF sensor.

-- MAF circuit shorted to ground.

-- Damaged Powertrain Control Module (PCM).

-- Damaged MAF sensor.

-- Air leak before or after MAF sensor.

-- MAF sensor disconnected.

-- Idle Air Control (IAC) system failure (at closed throttle position).

- Check for broken/loose air outlet tube clamps (throttle body and air cleaner assembly ends), cracks/holes in air outlet tube, worn gaskets between MAF sensor and air cleaner assembly (including intermediate tube on 3.8L SFI Taurus/Sable and 3.8L Continental).

- **Is a fault indicated?**

Yes

SERVICE as necessary.
RECONNECT all components.
RERUN «Quick Test».

No

GO to «DC14».

Pre-Diagnostic Information
(Warnings, schematics, etc.)

Mass Air Flow (MAF) Sensor	**Pinpoint Test**	**DC**

DC14 CHECK CONTINUITY OF MAF AND VPWR CIRCUITS

- Key off.
- Disconnect MAF sensor.
- Disconnect Powertrain Control Module (PCM). Inspect for damaged or pushed out pins, corrosion, loose wires, etc. Service as necessary.
- Install breakout box, leave PCM disconnected.
- Measure resistance between VPWR circuit at the MAF sensor vehicle harness connector and Test Pins 37 and 57 at the breakout box.

For MFI vehicles:

- Measure resistance between MAF circuit at the MAF sensor vehicle harness connector and Test Pin 14 at the breakout box.

For SFI vehicles:

- Measure resistance between MAF circuit at the MAF sensor vehicle harness connector and Test Pin 50 at the breakout box.
- **Is each resistance less than 5.0 ohms?**

Yes

GO to «DC15».

No

SERVICE open circuit.
REMOVE breakout box.
RECONNECT all components.
RERUN «Quick Test».

Pre-Diagnostic Information
(Warnings, schematics, etc.)

Mass Air Flow (MAF) Sensor	**Pinpoint Test**	**DC**

DC15 CHECK MAF CIRCUIT FOR SHORTS TO GROUND AND MAF RTN CIRCUIT

- Key off.
- MAF sensor disconnected.
- Breakout box installed, PCM disconnected.

For MFI vehicles

- Measure resistance between Test Pin 14 and Test Pins 15, 40 and 60 at the breakout box.

For SFI vehicles:

- Measure resistance between Test Pin 50 and Test Pins 9, 40 and 60 at the breakout box.
- **Is each resistance greater than 10,000 ohms?**

Yes
GO to «DC16».

No
SERVICE short circuit(s).
REMOVE breakout box.
RECONNECT all components.
RERUN «Quick Test».

Pre-Diagnostic Information
(Warnings, schematics, etc.)

Mass Air Flow (MAF) Sensor	**Pinpoint Test**	**DC**

DC16 CHECK PWR GND CIRCUIT CONTINUITY

- Key off.
- MAF sensor disconnected.
- Breakout box installed, PCM disconnected.
- Measure resistance between PWR GND circuit at the MAF sensor vehicle harness connector and battery negative post.
- **Is resistance less than 10 ohms?**

Yes
GO to «DC17».

No
SERVICE open circuit.
REMOVE breakout box.
RECONNECT all components.
RERUN «Quick Test».

Pre-Diagnostic Information
(Warnings, schematics, etc.)

Mass Air Flow (MAF) Sensor	**Pinpoint Test**	**DC**

DC17 CHECK MAF RTN CIRCUIT CONTINUITY

- Key off.
- MAF sensor disconnected.
- Breakout box installed, PCM disconnected.

For MFI vehicles:

- Measure resistance between MAF RTN circuit at the MAF sensor vehicle harness connector and Test Pin 15 at the breakout box.

For SFI vehicles:

- Measure resistance between MAF RTN circuit at the MAF sensor vehicle harness connector and Test Pin 9 at the breakout box.
- **Is resistance less than 5.0 ohms?**

Yes

GO to «DC18».

No

SERVICE open circuit.
REMOVE breakout box.
RECONNECT all components.
RERUN «Quick Test».

Pre-Diagnostic Information
(Warnings, schematics, etc.)

Mass Air Flow (MAF) Sensor	Pinpoint Test	DC

DC18 CHECK MAF CIRCUIT FOR SHORT TO GROUND

- Key off.
- MAF sensor disconnected.
- Breakout box installed.
- Connect PCM to breakout box.

For MFI vehicles:

- Measure resistance between Test Pin 14 and Test Pins 15, 40 and 60 at the breakout box.

For SFI vehicles:

- Measure resistance between Test Pin 50 and Test Pins 9, 40 and 60 at the breakout box.
- **Is each resistance greater than 10,000 ohms?**

Yes

GO to «DC19».

No

REPLACE PCM.
REMOVE breakout box.
RECONNECT MAF sensor.
RERUN «Quick Test».

Pre-Diagnostic Information
(Warnings, schematics, etc.)

Mass Air Flow (MAF) Sensor	**Pinpoint Test**	**DC**

DC19 CHECK MAF CIRCUIT OUTPUT

- Key off.
- Reconnect MAF sensor.
- Breakout box installed, PCM connected.
- Key on, engine running.

For MFI vehicles:

- Measure voltage between Test Pin 14 at the breakout box and negative battery post.

For SFI vehicles:

- Measure voltage between Test Pin 50 at the breakout box and negative battery post.
- **Is voltage between .36 and 1.50 volts?**

Yes

GO to «DC20».

No

REPLACE MAF sensor assembly.
REMOVE breakout box.
RECONNECT PCM.
RERUN «Quick Test».

Pre-Diagnostic Information
(Warnings, schematics, etc.)

Mass Air Flow (MAF) Sensor	**Pinpoint Test**	**DC**

DC20 CHECK MAF CIRCUIT OUTPUT

- Key off.
- Reconnect MAF sensor.
- Breakout box installed, PCM connected.
- Key on, engine running.

For MFI vehicles:

- Measure voltage between Test Pin 14 and Test Pin 15 at the breakout box.

For SFI vehicles:

- Measure voltage between Test Pin 50 and Test Pin 9 at the breakout box.
- **Is voltage between 0.36 and 1.50 volts?**

Yes

REPLACE PCM.
REMOVE breakout box.
RERUN «Quick Test».

No

REPLACE MAF sensor.
REMOVE breakout box.
RECONNECT PCM.
RERUN «Quick Test».