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Conversion Calculator

2002 Mitsubishi Eclipse GT V6-3.0L SOHC

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Inspection Procedure 8

Unstable Idle (Rough Idle, Hunting).

COMMENT

- In cases such as the above, the cause is probably the [air/fuel mixture](#) or idle air control motor. Other systems affecting idle quality include the [ignition system](#) and compression.

TROUBLESHOOTING HINTS (The most likely causes for this case:)

- Malfunction of the [ignition system](#).
- Malfunction of air/fuel ratio control system.
- Malfunction of the IAC system.
- Malfunction of the evaporative emission purge solenoid system.
- Poor compression pressure.
- Vacuum leak.
- Malfunction of the EGR solenoid system.

DIAGNOSIS

Required Special Tool:

- MB991502: Scan Tool (MUT-II)

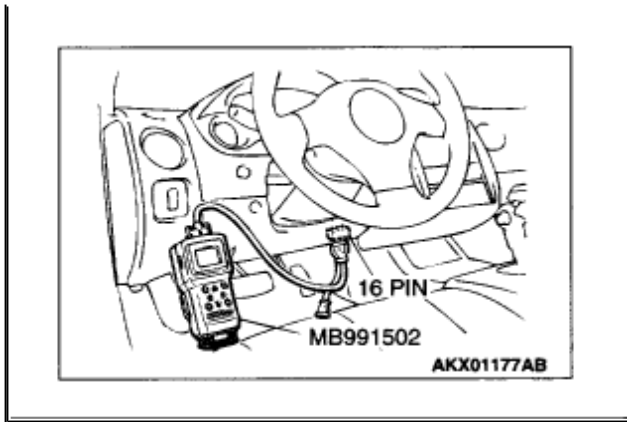
STEP 1. Check if the battery terminal is disconnected.

Q: Has the battery terminal been disconnected lately?

YES: Start the engine and let it run at idle for approximate **10 minutes** after engine warm up. Then, if a malfunction occurs, go to Step 2.

NO: Go to Step 2.





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STEP 2. Using scan tool MB991502, read the diagnostic trouble code (DTC).

CAUTION: To prevent damage to scan tool MB991502, always turn the [ignition switch](#) is to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991502.

1. Connect scan tool MB991502 to the [data link connector](#).
2. Turn the [ignition switch](#) to the "ON" position.
3. Read the DTC.
4. Turn the [ignition switch](#) to the "LOCK" (OFF) position.

Q: Is the DTC is output?

YES: Refer to Diagnostic Trouble Code Chart.

NO: Go to Step 3.

STEP 3. Check the engine idling state.

Q: Is it hunting remarkably?

YES: Go to Step 4.

NO: Go to Step 5.

STEP 4. Check the following items.

1. Carry out the following cleaning.
 - a. Clean the throttle valve area.
2. After cleaning, confirm that the malfunction symptom is eliminated.

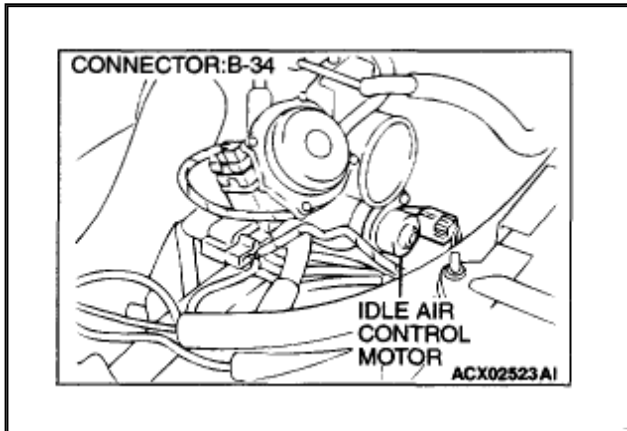
Q: Is the malfunction symptom resolved?

YES: The check is completed.

NO: Check the following items, and repair or replace the defective items.

- a. Broken intake manifold gasket.
- b. Broken air intake hose.
- c. Broken vacuum hose.
- d. [Positive crankcase ventilation valve](#) does not operate.

Then confirm that the malfunction symptom is eliminated.



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STEP 5. Check the idle air control (IAC) motor operation sound.

1. Check that the engine coolant temperature is **20 °C (68 °F)** or below.

NOTE: Disconnecting the engine coolant temperature sensor connector and connecting the harness side of the connector to another engine coolant temperature sensor that is at **20 °C (68 °F)** or below is also okay.

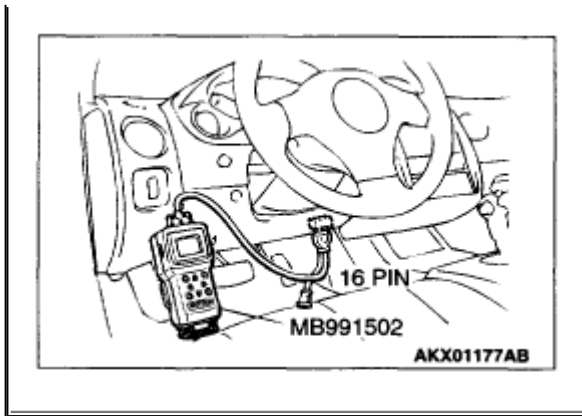
2. Check the operation sound of the IAC motor can be heard after the ignition is switched to the "ON" position (but without starting the engine).
 - An operation sound is heard.
3. Turn the [ignition switch](#) to the "LOCK" (OFF) position.

Q: Did you hear the operation sound?

YES: Go to Step 6.

NO: Refer to DTC P0506 - Idle Control System RPM Lower Than Expected, DTC P0507 - Idle Control System RPM Higher Than Expected.





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STEP 6. Using scan tool MB991502, check actuator test items 01, 02, 03, 04, 05, 06: Injector.

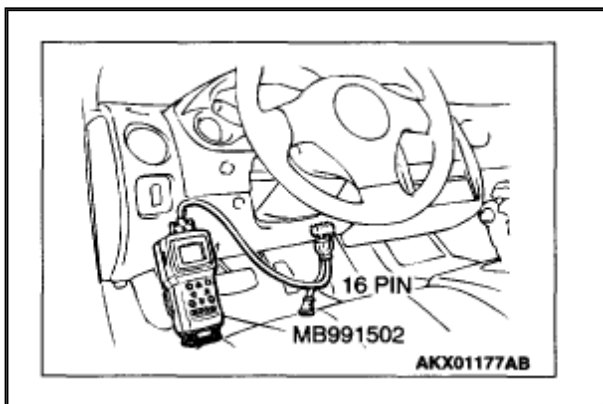
CAUTION: To prevent damage to scan tool MB991502, always turn the [ignition switch](#) to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991502.

1. Connect scan tool MB991502 to the [data link connector](#).
2. Turn the [ignition switch](#) to the "ON" position.
3. Check following items in the actuator test. Refer to Actuator Test Reference Table.
 - a. Item 01, 02, 03, 04, 05, 06: Injector.
4. Turn the [ignition switch](#) to the "LOCK" (OFF) position.

Q: Is the actuator operating properly?

YES: Go to Step 7.

NO: Refer to DTC P0201, P0203, P0205 - Injector Circuit, DTC P0202, P0204, P0206 - Injector Circuit.

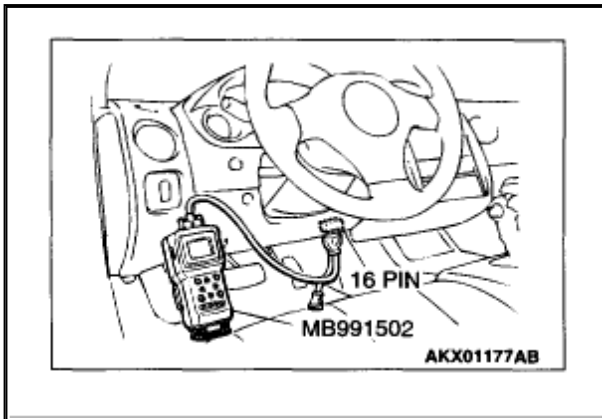


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STEP 7. Using scan tool MB991502, check data list.

1. Turn the [ignition switch](#) to the "ON" position.
2. Check the following items in the data list. Refer to Data List Reference Table .
 - a. Item 13: [Intake Air Temperature Sensor](#).
 - b. Item 25: Barometric Pressure Sensor.
 - c. Item 21: Engine Coolant Temperature Sensor.
 - d. Item 69: Right Bank Heated Oxygen Sensor (rear).
 - e. Item 39: Right Bank Heated Oxygen Sensor (front).
 - f. Item 59: Left Bank Heated Oxygen Sensor (rear).
 - g. Item 11: Left Bank Heated Oxygen Sensor (front).
 - h. Item 27: [Power Steering Pressure Switch](#).
 - i. Item 28: A/C Switch.
3. Turn the [ignition switch](#) to the "LOCK" (OFF) position.

Q: Are they operating properly?**YES:** Go to Step 8.**NO:** Repair or replace. Then confirm that the malfunction symptom is eliminated.

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STEP 8. Using scan tool MB991502, check actuator test.

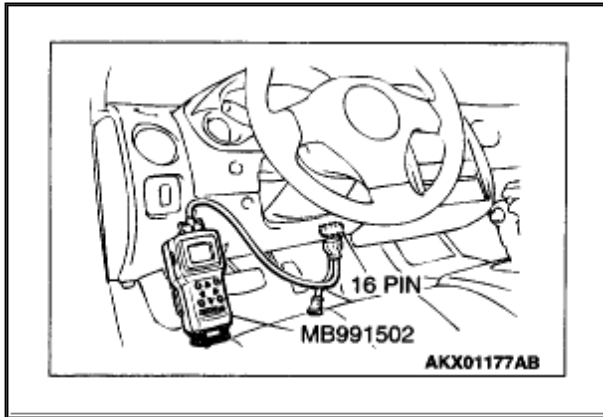
1. Turn the [ignition switch](#) to the "ON" position.
2. Check the following items in the actuator test. Refer to Actuator Test Reference Table.
 - a. Item 08: Evaporative Emission Purge Solenoid.
 - b. Item 10: EGR Solenoid.

3. Turn the [ignition switch](#) to the "LOCK" (OFF) position.

Q: Are they operating properly?

YES: Go to Step 9.

NO: Repair or replace. Then confirm that the malfunction symptom is eliminated.



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STEP 9. Using scan tool MB991502, check data list.

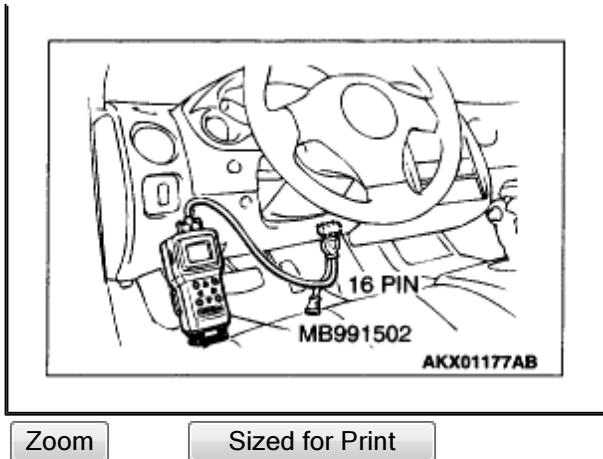
1. Turn the [ignition switch](#) to the "ON" position.
2. Check the following items in the data list. Refer to Data List Reference Table.
 - a. Item 45: Idle Air Control Motor Position.
3. Turn the [ignition switch](#) to the "LOCK" (OFF) position.

Q: Is the actuator operating properly?

YES: Go to Step 10.

NO: Adjust the basic [idle speed](#). Refer to Basic Idle Speed Adjustment. After adjusting, confirm.





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STEP 10. Using scan tool MB991502, check data list.

1. Turn the [ignition switch](#) to the "ON" position.
2. Check the following items of the data list. Refer to Data List Reference Table.
 - a. Item 39: Right Bank Heated Oxygen Sensor (front).
 - b. Item 11: Left Bank Heated Oxygen Sensor (front).
 - Voltage should fluctuate between **0 - 0.4 volts** and **0.6 - 1.0 volts** while idling after the engine has been warmed.
3. Turn the [ignition switch](#) to the "LOCK" (OFF) position.

Q: Is the sensor operating properly?

YES: Go to Step 12.

NO: Go to Step 11.

STEP 11. Check the [fuel pressure](#).
Refer to Fuel Pressure Test.

Q: Is the [fuel pressure](#) normal?

YES:

- a. Check the following items, and repair or replace the defective items.
 - Vacuum leak.
 - Broken intake manifold gasket.
 - Broken air intake hose.
 - Broken vacuum hose.
 - [Positive crankcase ventilation valve](#) does not operate.

- b. Injector clogged.

Then confirm that the malfunction symptom is eliminated.

NO: Repair or replace. Then confirm that the malfunction symptom is eliminated.

STEP 12. Check the [ignition timing](#).

Refer to On-vehicle Service - Ignition Timing Check.

Q: Is the [ignition timing](#) normal?

YES: Check the following items, and repair or replace the defective items.

- a. Check the [ignition coil](#), [spark plugs](#), spark plug cables.
- b. Check the purge control system.
- c. Check compression pressure.
- d. Check if the foreign materials (water, kerosene, etc.) got into fuel.
- e. Check the [EGR](#) control system.

Then confirm that the malfunction symptom is eliminated.

NO: Check that the [crankshaft position sensor](#) and timing belt cover are in the correct position. Then confirm that the malfunction symptom is eliminated.