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2008 MAZDA BT-50 OEM Service and Repair Workshop Manual

Go to manual page

# **UREA TANK HEATER INSPECTION [SKYACTIV-D 2.2]**

SM2897562

#### id0116e181010

Note

• The urea tank heater is built into the DEF pump. When replacing the urea tank heater, replace the DEF pump.

# **PID/DATA Monitor Inspection**

1.Connect the M-MDS to the DLC-2.

2.Switch the ignition ON (engine off).

3.Access the PID/DATA monitor item HTR\_TANK and simulation item HTR\_TANK using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [DOSING CONTROL UNIT (SKYACTIV-D 2.2)].)

4.Verify that the value of the conforming PID HTR\_TANK increases when the simulation item HTR\_TANK value is increased.

• If not as verified, replace the urea tank. (See UREA TANK REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

## **Resistance Inspection**

1. Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.)

2.Disconnect the urea level sensor/urea temperature sensor/urea tank heater connector. (See DEF PUMP REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

3.Inspect the resistance between urea level sensor/urea temperature sensor/urea tank heater terminals D and E.



Urea tank heater resistance

1.2-2.66 ohms [25 °C {77 °F}]

# EGR Cooler Bypass Valve Side

1. Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.)

2.Remove the engine cover. (See ENGINE COVER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

3.Remove the air cleaner. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

4. Remove the battery and the battery tray. (See BATTERY REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

5. Remove the following parts as a single unit: (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

- Air hose
- Air inlet pipe

6.Disconnect the hose clip shown in the figure.



7.Remove the nuts and set the turbocharger air outlet pipe component aside. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

20-26 N·m {2.1-2.6 kgf·m, 15-19 ft·lbf}

3.Tighten the EGR pipe (EGR cooler bypass valve side) installation bolt No.1.

#### **Tightening torque**

20-26 N·m {2.1-2.6 kgf·m, 15-19 ft·lbf}

# Intake Manifold Side

1.Remove the intake manifold. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

2.Remove the EGR pipe (intake manifold side).



3.Install in the reverse order of removal.

# EGR COOLER REMOVAL/INSTALLATION [SKYACTIV-D 2.2]

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#### **Replacement Part**

Gasket

Quantity: 2

Location of use: EGR cooler

1. Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.)

2.Remove the engine cover. (See ENGINE COVER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

3.Remove the air cleaner. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

4. Remove the battery and the battery tray. (See BATTERY REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

5. Remove the following parts as a single unit: (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

- Air hose
- Air inlet pipe

6.Disconnect the hose clip shown in the figure.



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7.Remove the nuts and set the turbocharger air outlet pipe component aside. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

# Vacuum Pipe Installation Note

## Note

• When installing the vacuum pipe, verify the tightening torque for the bolt shown in the figure because the wiring harness bracket bolt may have loosened.



# Vacuum Hose No.3 Installation Note

1.Install vacuum hose No.3 as shown in the figure.



Vacuum pipe side

Vacuum pipe bracket side

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1. Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.)

2.Remove the EGR cooler. (See EGR COOLER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

3.Verify that there is airflow from port B when pressure is applied from port A.



• If there is no airflow, replace the EGR cooler. (See EGR COOLER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

# CHECK VALVE INSPECTION [SKYACTIV-D 2.2]

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# id0116e118990

1.Remove the check valve. (See CHECK VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

2. Apply vacuum to port A and verify that there is no airflow.



• If there is airflow, replace the check valve. (See CHECK VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

3.Verify that there is airflow when vacuum is applied to port A.

• If there is no airflow, replace the check valve. (See CHECK VALVE REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

 $1.\ensuremath{\mathsf{Apply}}$  force to the shaded area shown in the figure and install the DEF pump.





(4)Press in the bottom of the bottle straight and add DEF.



(5)Remove the bottle in the reverse order of the insertion. At this time, be careful of DEF dripping from the bottle.

(6)Tighten the urea-filler cap until you hear two or more click sounds.

8.After replacing the DEF in the urea tank, perform the following procedure so that the vehicle can detect the amount of DEF in the urea tank again.

# Using the M-MDS

- 1. Connect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.)
- 2. Connect the M-MDS to the DLC-2.
- 3. After the vehicle is identified, select the following item from the initial screen of the M-MDS.
  - 1. Select the "Powertrain".
  - 2. Select the "SCR".
  - 3. Select the "SCR function".
  - 4. Select the "Reset for urea tank level".

# Without Using the M-MDS

## Note

• It is not necessary to achieve the traveled time during 1 drive-cycle. This is not a problem if the cumulative time reaches 1.5 to 2.0 h.

1. Drive the vehicle for 1.5 to 2.0 h at 2 km/h {1 mph} or more.