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2010 MAZDA 6/Atenza Wagon OEM Service and Repair Workshop Manual

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ENGINE OIL PRESSURE SENSOR INSPECTION [SKYACTIV-D 2.2]

SM2897840

id0140z721690

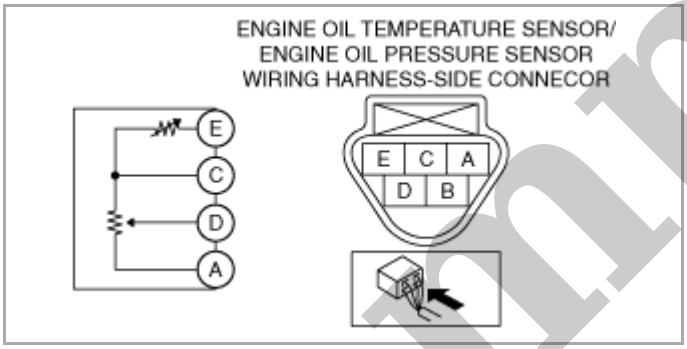
Voltage Inspection

Note

• The engine oil temperature sensor and engine oil pressure sensor cannot be removed as a single unit. When replacing the engine oil temperature sensor or engine oil pressure sensor, replace the engine oil temperature sensor/engine oil pressure sensor.

1.Switch the ignition ON (engine off).

2.Measure the voltage at the engine oil temperature sensor/engine oil pressure sensor terminal D.



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• If the voltage is within the specification, go to the next step.
• If the voltage is not within the specification, replace the engine oil temperature sensor/engine oil pressure sensor. (See ENGINE OIL TEMPERATURE SENSOR/ENGINE OIL PRESSURE SENSOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

Specification

Approx. 0.5 V

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

4.Start the engine.

5.Access the PID/DATA monitor item EOP using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-D 2.2)].)

6.Measure the voltage at the engine oil temperature sensor/engine oil pressure sensor terminal D when the EOP PID increases.

• If the voltage does not increase, replace the engine oil temperature sensor/engine oil pressure sensor. (See ENGINE OIL TEMPERATURE SENSOR/ENGINE OIL PRESSURE SENSOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

UREA TEMPERATURE SENSOR INSPECTION [SKYACTIV-D 2.2]

SM2897898

id0140z782680

Note

• If measurements are taken with the vehicle on an uneven surface, a correct urea level cannot be detected because the urea tank could be tilted. When inspecting, take measurements with the vehicle on level ground.
• If the ambient temperature is low, the DEF may have frozen and the DEF level may not have been detected correctly. If the ambient temperature level is below freezing, take the measurement after the DEF has defrosted.

PID/DATA Monitor Inspection

1.Park the vehicle on level ground.

2.Verify the ambient temperature.

Ambient temperature is below freezing

• After warming up the engine for approx.1 hour, go to the next step.

Ambient temperature is above freezing

• Go to the next step.

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

4.Switch the ignition ON (engine off).

5.Using the M-MDS, display the DEF temperature (PID: S_UR_TANK_TMP) detected by the urea temperature sensor and the DEF temperature detected by the urea quality sensor (PID: DEF_T_TEMP) (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-D 2.2)].) (See ON-BOARD DIAGNOSTIC TEST [DOSING CONTROL UNIT (SKYACTIV-D 2.2)].)

6.Verify that the difference in values between PID S_UR_TANK_TMP and PID DEF_T_TEMP is within ±6 °C.

• If the output value is out of the range, replace the urea tank. (See UREA TANK REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

ACCELERATOR PEDAL POSITION (APP) SENSOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2]

SM2897900

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Note

• Because the APP sensor is integrated in the accelerator pedal, replacing the APP sensor includes replacement of the accelerator pedal.

1.Remove the accelerator pedal. (See ACCELERATOR PEDAL REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

AIR FUEL RATIO (A/F) SENSOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2]

SM2897902

id0140z789970

Special Service Tool (SST)

49 L018 001 O2 sensor wrench	

Replacement Part

Band Quantity: 1 Location of use: A/F sensor	Clip band Quantity: 1 Location of use: A/F sensor

Warning

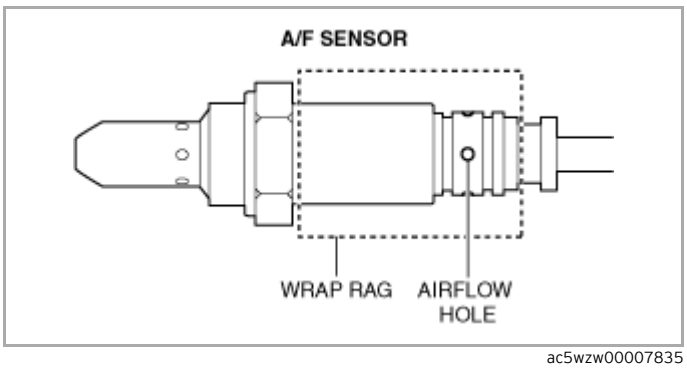
• A hot engine and exhaust system can cause severe burns. Turn off the engine and wait until they are cool before removing the exhaust system.

Caution

• Do not allow flammable objects such as the taping for bundling a wiring harness to come into contact with the catalytic converter.

Note

• If the A/F sensor is replaced, perform the "Operation After Replacing A/F Sensor" procedure. (See Operation After Replacing A/F Sensor.)
• If penetrant lubricating spray penetrates the airflow hole of the A/F sensor, it could cause interference with the A/F sensor function.
• When removing the A/F sensor, wrap a rag around the lower position so that penetrant lubricating spray does not get sprayed into the airflow hole.



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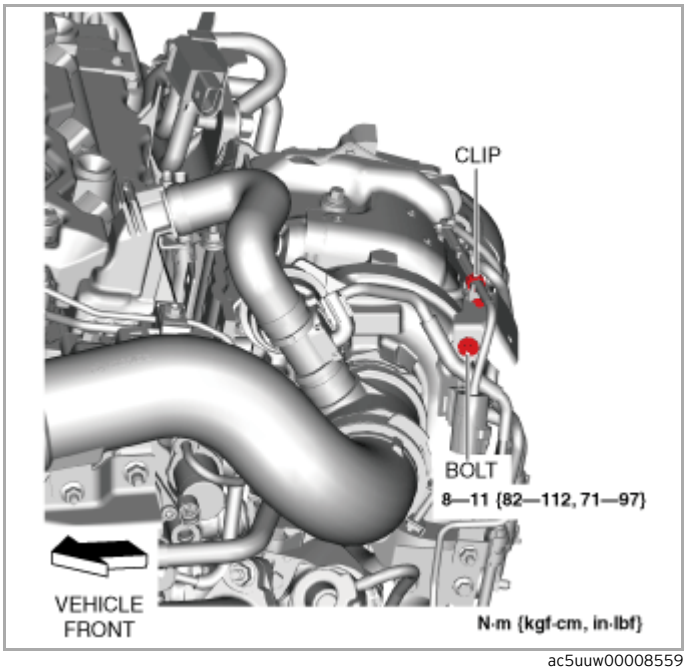
Operation After Replacing A/F Sensor



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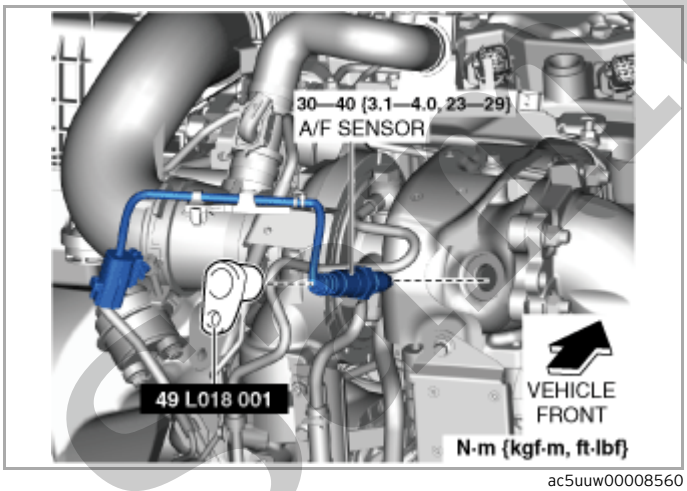
9.Remove the clip.

10.Remove the A/F sensor using the SST.



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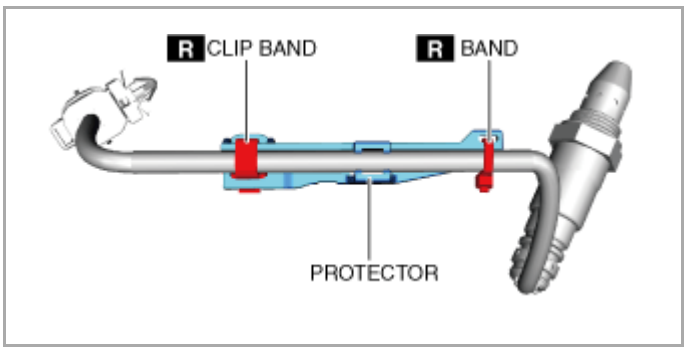
11.Cut the band. (SeeBand installation note.)



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12.Cut the clip band.

REGULATING VALVE POSITION SENSOR INSPECTION [SKYACTIV-D 2.2]

SM2897843

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PID/DATA Monitor Inspection

Note

• The regulating valve position sensor is integrated in the regulating valve actuator. The regulating valve actuator is integrated in the turbocharger.

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

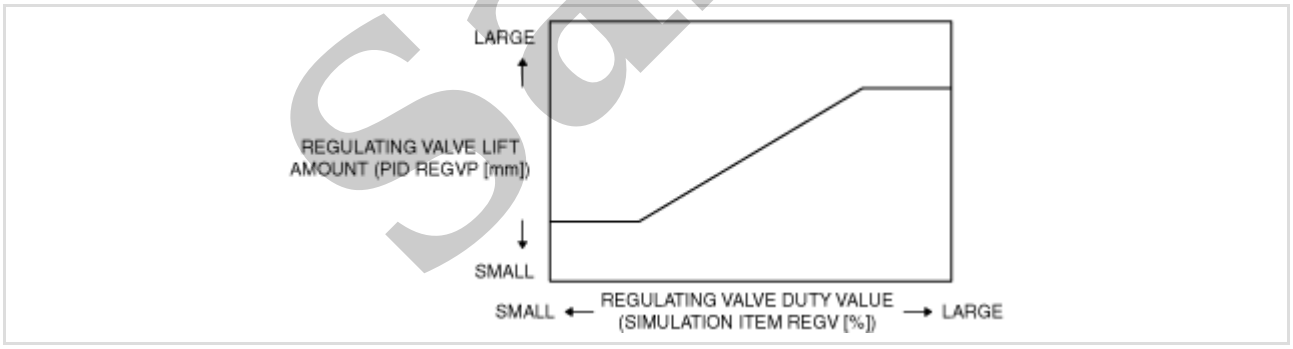
2.Switch the ignition ON (engine running).

3.Access the PID/DATA monitor item REGVP and simulation item REGV using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-D 2.2)].)

4.Verify that the PID/DATA monitor item REGVP changes according to the regulating valve opening angle when the simulation item REGV is set from 0 % to 95 %.

• If not as verified, replace the turbocharger. (See TURBOCHARGER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

Specification (Reference)



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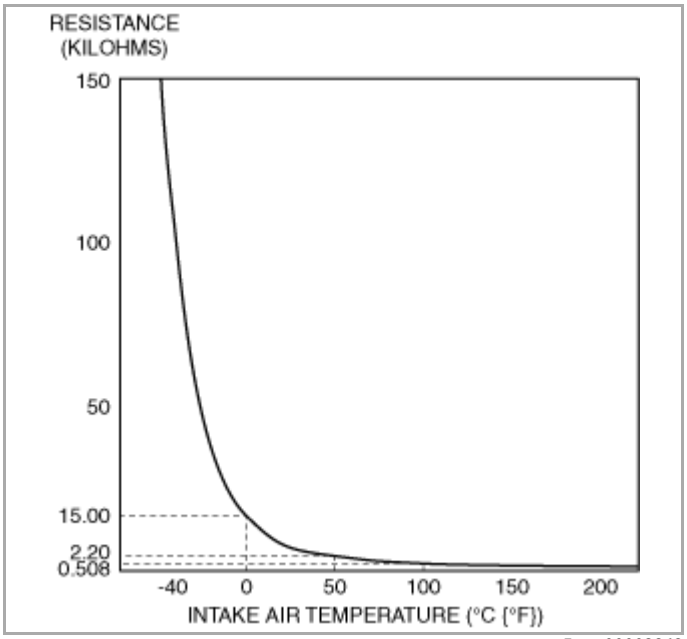

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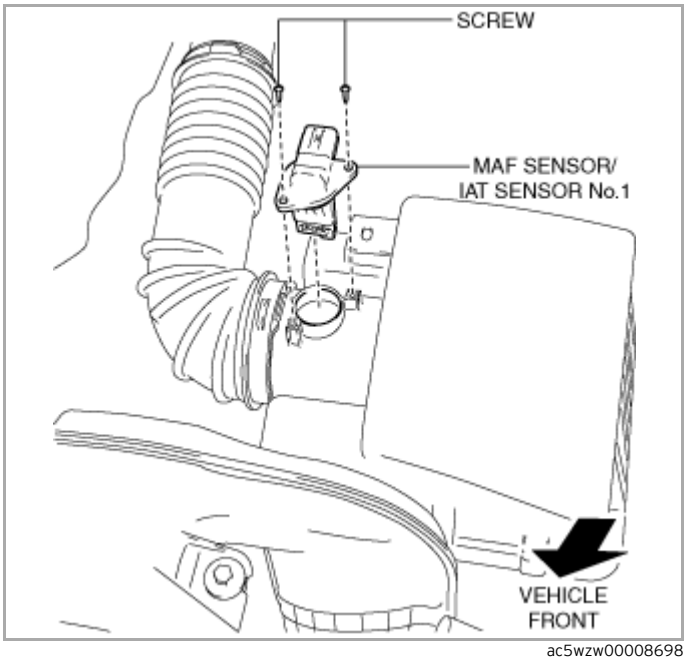

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4.Install in the reverse order of removal.

5.Perform operation after replacing MAF sensor/IAT sensor No.1. (See Operation After Replacing MAF Sensor/IAT Sensor No.1.)

INTAKE SHUTTER VALVE INITIALIZATION [SKYACTIV-D 2.2]

SM2897906

id0140z799320

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

2.After the vehicle is identified, select the following item from the initial screen of the M-MDS.

(1)Select the “Powertrain”.

3.Then, select the items from the screen menu in the following order.

(1)Select the “Initialization”.

(2)Select the “ETB”.

4.Perform the procedure according to the directions on the screen.