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2008 MAZDA 2 OEM Service and Repair Workshop Manual

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FUEL DRAINING PROCEDURE [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)]

SM2897494

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Warning

• Highly pressurized fuel may spray out if the fuel line is cut. Due to the following dangers occurring with a fuel spray, always complete the "Fuel Line Safety Procedure" to prevent the fuel from spraying.

— Fuel may cause irritation if it comes in contact with skin and eyes.
— If fuel ignites and causes a fire, it may lead to serious injury or death, and damage to property and facilities.

• A person charged with static electricity could cause a fire or explosion, resulting in death or serious injury. Before performing work on the fuel system, discharge static electricity by touching the vehicle body.

Fuel Siphoning Procedure Using Fuel Pump

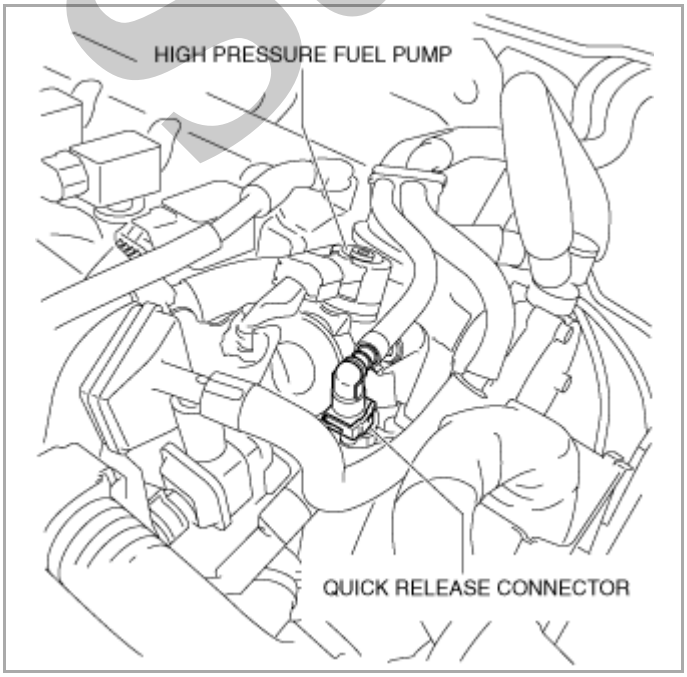
Caution

• Disconnecting/connecting the quick release connector without cleaning it may possibly cause damage to the fuel pipe and quick release connector. Always clean the quick release connector joint area before disconnecting/connecting using cloth or soft brush, and make sure that it is free of foreign material.

1.Complete the "BEFORE SERVICE PRECAUTION". (See BEFORE SERVICE PRECAUTION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)

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

3.Disconnect the quick release connector as shown in the figure. (See QUICK RELEASE CONNECTOR (FUEL SYSTEM) REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)



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6.Remove the hose using a rag.

FUEL PUMP CONTROL MODULE INSPECTION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)]

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

2.Switch the ignition ON (engine off).

3.Perform the KOEO self-test. (See KOEO/KOER SELF TEST [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].)

4.Verify that a fuel pump control module related DTC is detected. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].)

- If DTCs are detected, repair the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [PCM (SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION))].)
- If a DTC is not detected, go to the next step.

5.Inspect the following:

- Fuel pump control module damage
- Fuel pump control module connector damage or corrosion
  - — If there is any malfunction, repair or replace the malfunctioning part.

8	Joint hose (See FUEL TANK REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)
9	Non-return valve (See NON-RETURN VALVE INSPECTION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)
10	Fuel pump control module (See FUEL PUMP CONTROL MODULE REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].) (See FUEL PUMP CONTROL MODULE INSPECTION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)

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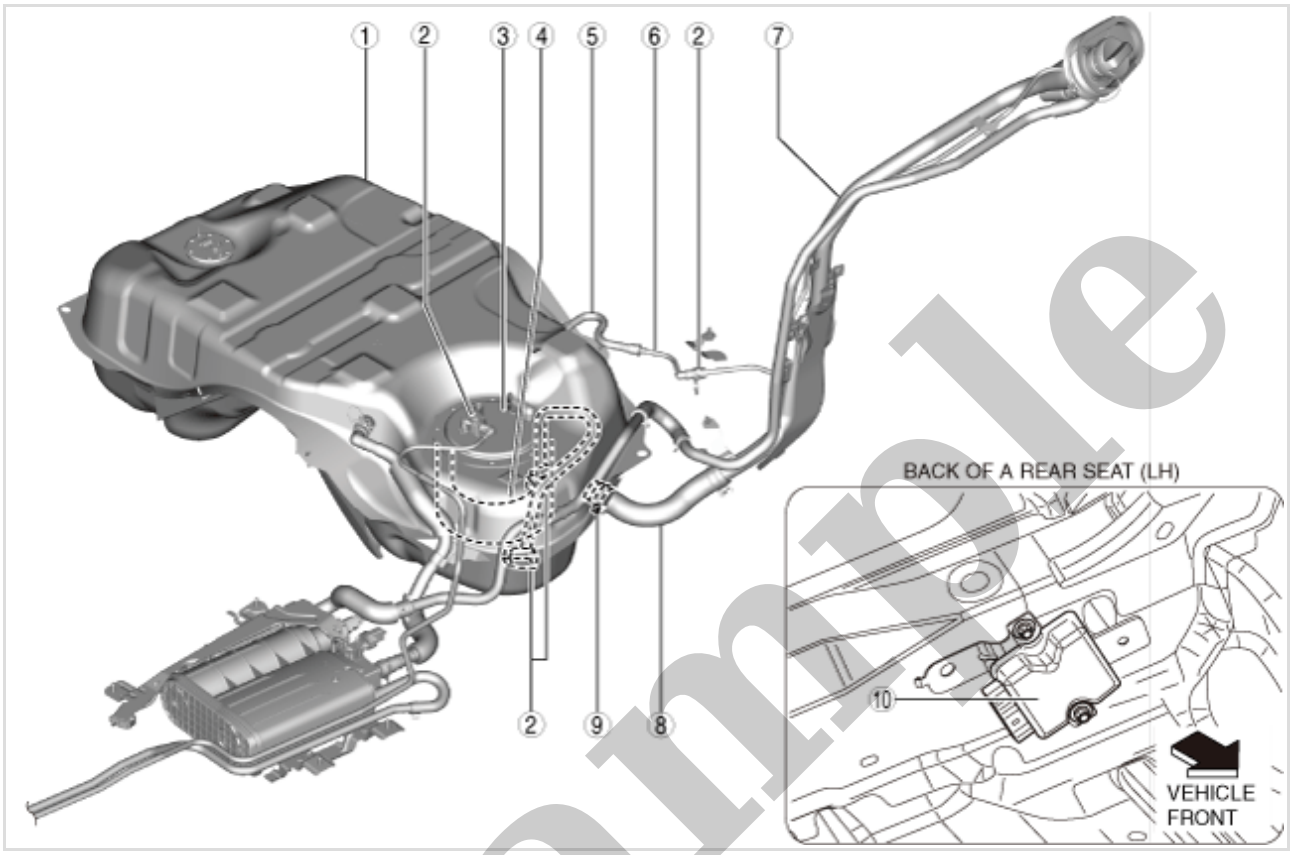

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1	Fuel tank (See FUEL TANK REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].) (See FUEL TANK INSPECTION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)
2	Quick release connector (See QUICK RELEASE CONNECTOR (FUEL SYSTEM) REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)
3	Fuel pump unit (See FUEL PUMP UNIT REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].) (See FUEL PUMP UNIT DISASSEMBLY/ASSEMBLY [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].) (See FUEL PUMP UNIT INSPECTION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)
4	Fuel filter (high-pressure) (See FUEL FILTER (HIGH-PRESSURE) REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)
5	Breather hose (See FUEL TANK REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)
6	Breather pipe (See FUEL TANK REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)
7	Fuel-filler pipe (See FUEL-FILLER PIPE REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)
8	Joint hose (See FUEL TANK REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)
9	Non-return valve (See NON-RETURN VALVE INSPECTION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)

FUEL LINE PRESSURE INSPECTION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)]

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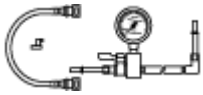
Special Service Tool (SST)

1: 49 N013 1A0D 2: - Fuel pressure gauge set	

Warning

• Fuel line spills and leakage from the pressurized fuel system are dangerous. Fuel can ignite and cause serious injury or death and damage. To prevent this, complete the following inspection with the engine stopped.
• Highly pressurized fuel may spray out if the fuel line is cut. Due to the following dangers occurring with a fuel spray, always complete the "Fuel Line Safety Procedure" to prevent the fuel from spraying.

— Fuel may cause irritation if it comes in contact with skin and eyes.
— If fuel ignites and causes a fire, it may lead to serious injury or death, and damage to property and facilities.

• A person charged with static electricity could cause a fire or explosion, resulting in death or serious injury. Before performing work on the fuel system, discharge static electricity by touching the vehicle body.

Caution

• Disconnecting/connecting the quick release connector without cleaning it may possibly cause damage to the fuel pipe and quick release connector. Always clean the quick release connector joint area before disconnecting/connecting using cloth or soft brush, and make sure that it is free of foreign material.

1.Complete the "BEFORE SERVICE PRECAUTION". (See BEFORE SERVICE PRECAUTION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)

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

3.Disconnect the quick release connector as shown in the figure. (See QUICK RELEASE CONNECTOR (FUEL SYSTEM) REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)

— Fuel line leakage

Fuel hold pressure

230 kPa {2.35 kgf/cm ^{2}, 33.4 psi} or more

13.Complete the "BEFORE SERVICE PRECAUTION". (See BEFORE SERVICE PRECAUTION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)

14.Disconnect the SST.

15.Connect the quick release connector. (See QUICK RELEASE CONNECTOR (FUEL SYSTEM) REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)

16.Complete the "AFTER SERVICE PRECAUTION". (See AFTER SERVICE PRECAUTION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].)

SUCTION CONTROL VALVE INSPECTION [SKYACTIV-D 2.2]

SM2897496

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Caution

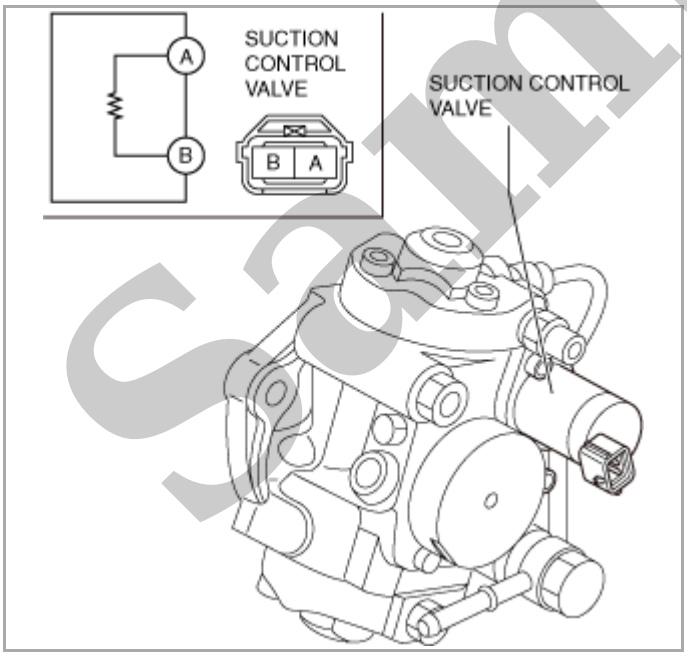
• The supply pump is sealed to maintain the function. Therefore, SSTs and tester are required to disassemble the supply pump securely.
• If a malfunction in the supply pump is verified, place a repair order with the DENSO, Ltd. services network (supply pump manufacturer), and do not disassemble the supply pump yourself.

Resistance inspection

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

2.Disconnect suction control valve connector.

3.Measure the resistance between the suction control valve terminals.



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Suction control valve resistance (specification)

Approx. 2.1 ohms [20 °C {68 °F}]

• If not within the specification, place a repair order with the DENSO, Ltd. services network.

FUEL CHECK VALVE INSPECTION [SKYACTIV-D 2.2]

SM2897503

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• The fuel check valve cannot be inspected as a single unit.

LOWER CASE REMOVAL/INSTALLATION [SKYACTIV-D 2.2]

SM2897501

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Replacement Part

Fuel main hose Quantity: 1 Location of use: Lower Case	Fuel return hose No.1 Quantity: 1 Location of use: Lower Case	Fuel return hose No.2 Quantity: 1 Location of use: Lower Case
Fuel return hose No.3 Quantity: 1 Location of use: Lower Case	Fuel return hose No.4 Quantity: 1 Location of use: Lower Case	–

Warning

• Highly pressurized fuel may spray out if the fuel line is cut. Due to the following dangers occurring with a fuel spray, always complete the "Fuel Line Safety Procedure" to prevent the fuel from spraying.

— Fuel may cause irritation if it comes in contact with skin and eyes.
— If fuel ignites and causes a fire, it may lead to serious injury or death, and damage to property and facilities.
• A person charged with static electricity could cause a fire or explosion, resulting in death or serious injury. Before draining fuel, make sure to discharge static electricity by touching the vehicle body.

Caution

• If parts are exposed to the fuel, their function may be decreased or a fire may occur. Spread a rag to absorb any leaked fuel.
• If fuel does not pass through the fuel filter, it could cause a fuel system malfunction. Therefore, do not install the fuel hoses (main and return side) in reverse. When installing the fuel hose, always refer to the "AFTER SERVICE PRECAUTION" and perform the "Fuel Hose Installation Procedure".

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

2.Perform the "Fuel Line Safety Procedure" referring to the "BEFORE SERVICE PRECAUTION". (See BEFORE SERVICE PRECAUTION [SKYACTIV-D 2.2].)

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

4.Disconnect the fuel feed pipe (lower case side). (See SUPPLY PUMP REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

5.Remove the fuel return pipe (fuel injector side) and cover. (See FUEL INJECTOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

6.Remove in the order shown in the figure.