

01-14 FUEL SYSTEM

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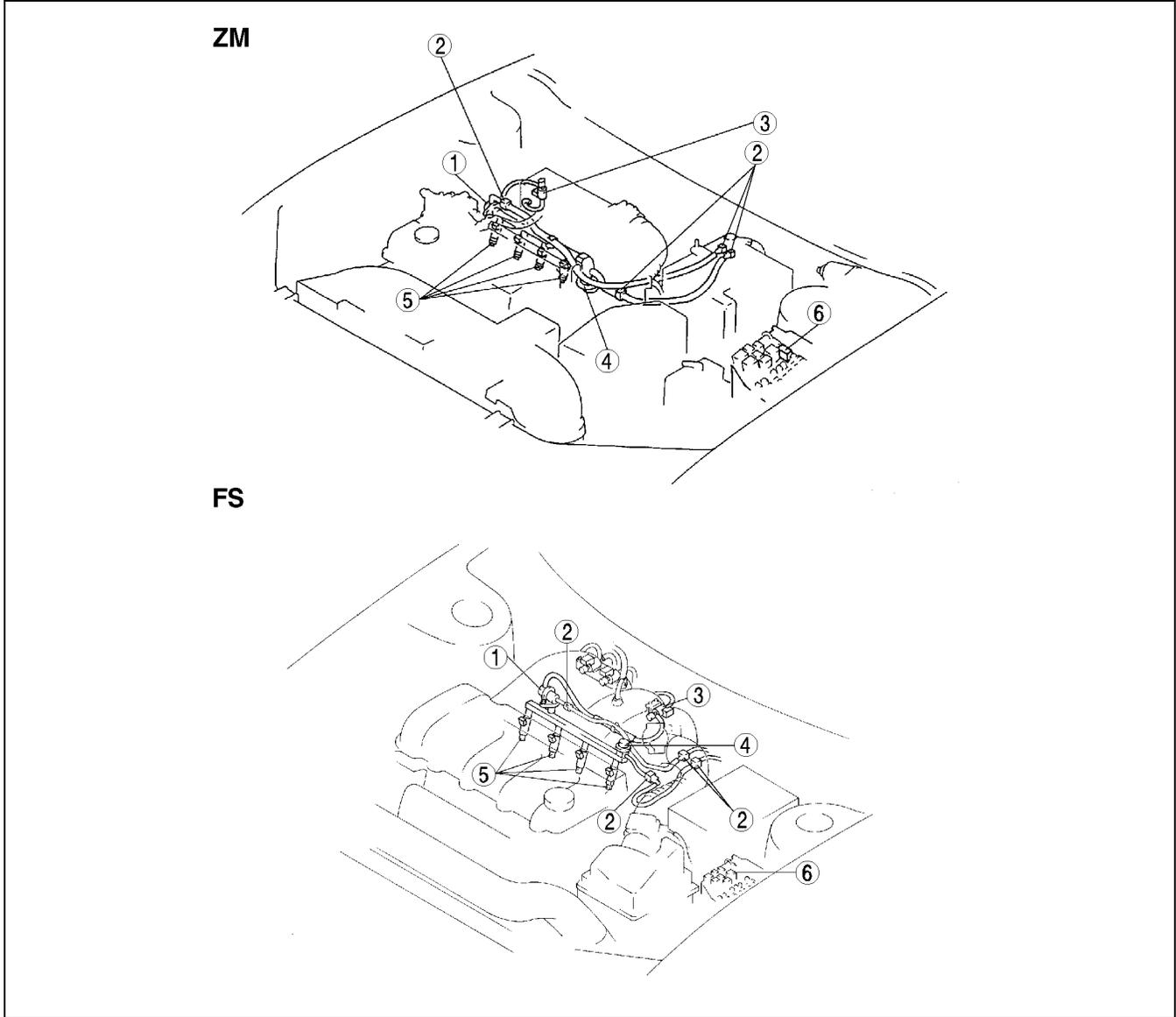
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FUEL SYSTEM

FUEL SYSTEM LOCATION INDEX

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Engine Room Side



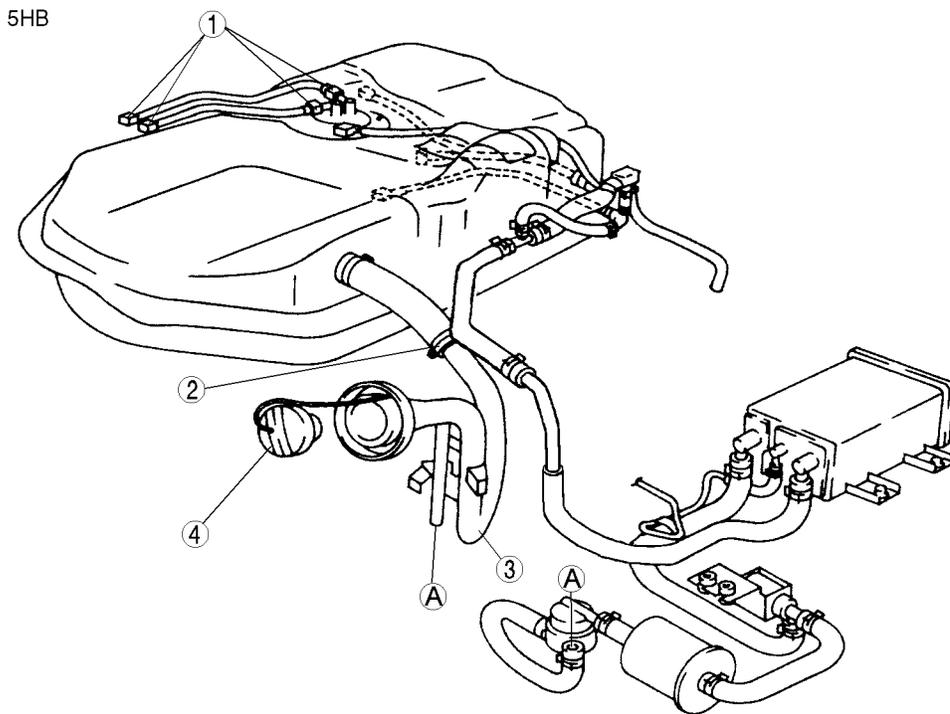
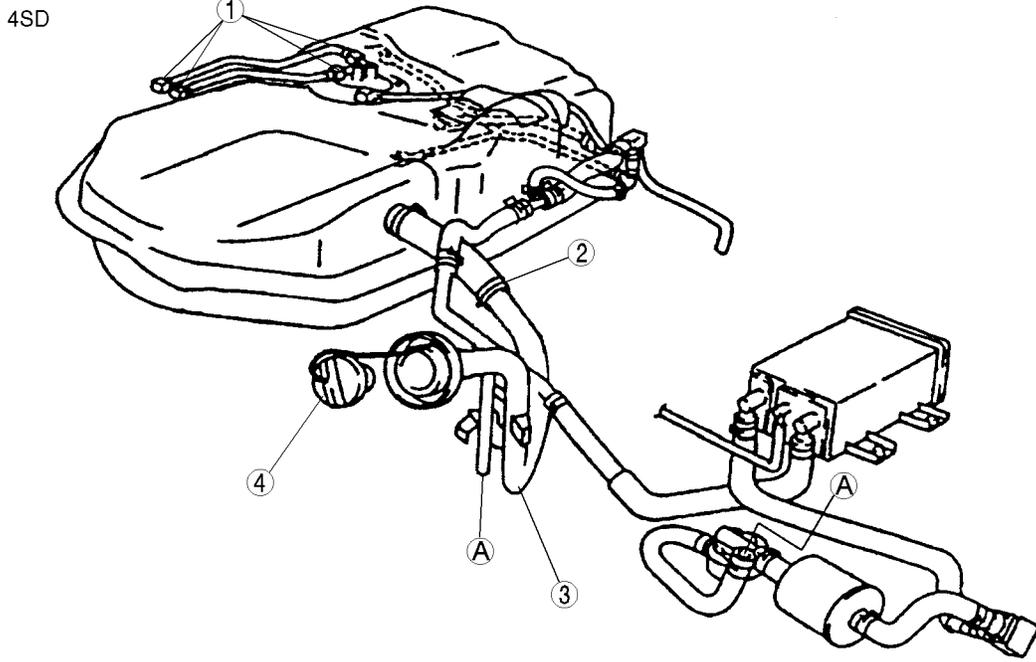
Z3U0114W985

1	Pressure regulator (See 01-14-27 PRESSURE REGULATOR REMOVAL/INSTALLATION) (See 01-14-28 PRESSURE REGULATOR INSPECTION)
2	Quick release connector (See 01-14-22 Plastic Fuel Hose Removal Note) (See 01-14-23 Plastic Fuel Hose Installation Note)
3	PRC solenoid valve (See 01-14-31 PRC SOLENOID VALVE REMOVAL/INSTALLATION) (See 01-14-31 PRC SOLENOID VALVE INSPECTION)

4	Pulsation damper (See 01-14-30 PULSATION DAMPER REMOVAL/INSTALLATION) (See 01-14-31 PULSATION DAMPER INSPECTION)
5	Fuel injector (See 01-14-21 FUEL INJECTOR REMOVAL/INSTALLATION) (See 01-14-24 FUEL INJECTOR INSPECTION)
6	Fuel pump relay (See 09-21-5 RELAY INSPECTION)

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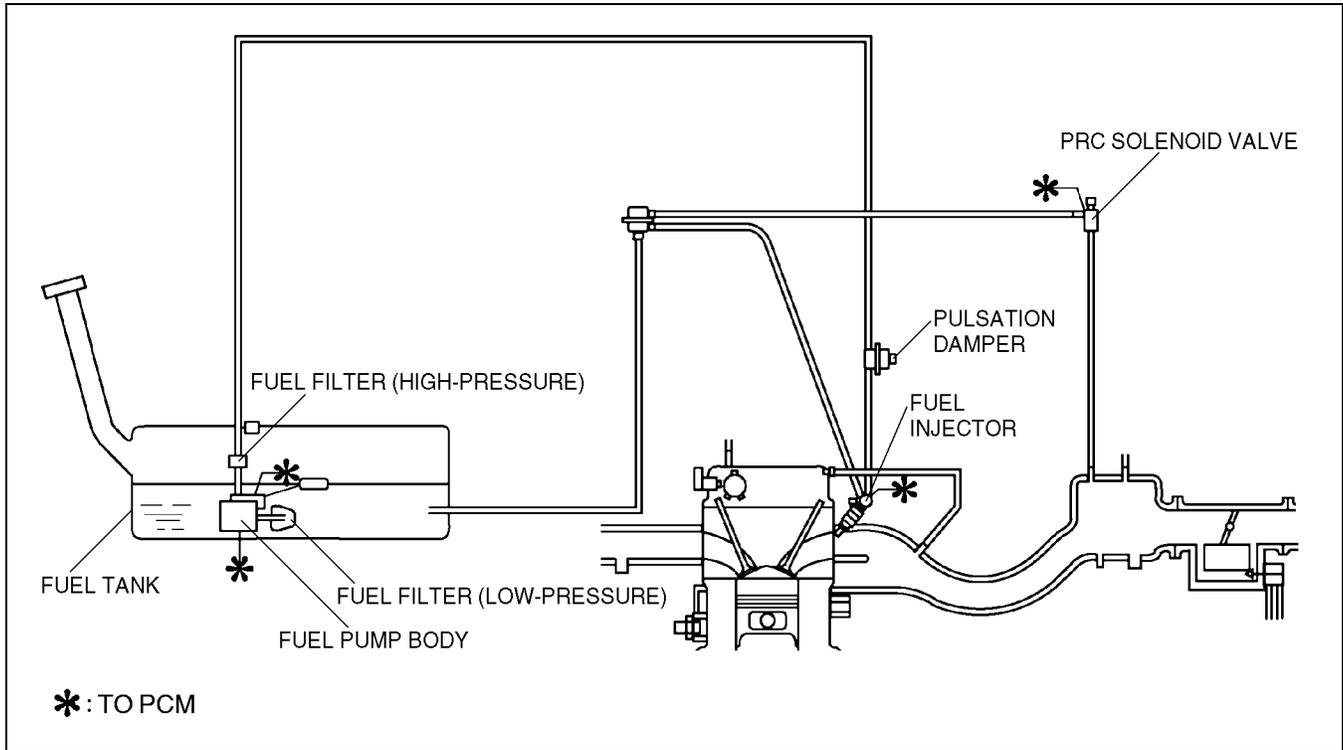
1	Quick release connector (See 01-14-22 Plastic Fuel Hose Removal Note) (See 01-14-23 Plastic Fuel Hose Installation Note)
2	Nonreturn valve (See 01-14-11 Nonreturn Valve Installation Note)

3	Fuel-filler pipe
4	Fuel-filler cap (See 01-16-13 FUEL-FILLER CAP INSPECTION)

FUEL SYSTEM

FUEL SYSTEM DIAGRAM

A3U011401006W02



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BEFORE REPAIR PROCEDURE

A3U011401006W03

Warning

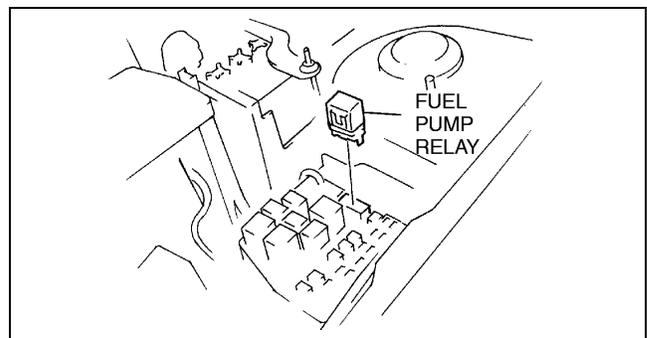
- Fuel vapor is hazardous. It can easily ignite, causing serious injury and damage. Always keep sparks and flames away from fuel.
- Fuel line spills and leakage are dangerous. Fuel can ignite and cause serious injuries or death and damage. Fuel can also irritate skin and eyes. To prevent this, always complete the following "Fuel Line Safety Procedure".

Fuel Line Safety Procedure

Note

- Fuel in the fuel system is under high pressure even when the engine is not running.

1. Remove the fuel-filler cap and release the pressure in the fuel tank.
2. Remove the fuel pump relay.
3. Start the engine.
4. After the engine stalls, crank the engine several times.
5. Turn the ignition switch off.
6. Install the fuel pump relay.



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FUEL SYSTEM

AFTER REPAIR PROCEDURE

A3U011401006W04

Warning

- Fuel line spills and leakage are dangerous. Fuel can ignite and cause serious injuries or death and damage. When installing the fuel hose, observe "Fuel Leakage Inspection" described below.

Fuel Leakage Inspection

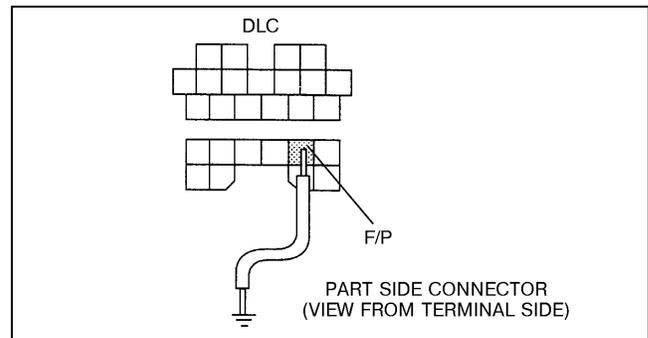
Warning

- Fuel line spills and leakage are dangerous. Fuel can ignite and cause serious injuries or death and damage. Always carry out the following procedure with the engine stopped.

Caution

- Connecting the wrong DLC terminal may possibly cause a malfunction. Carefully connect the specified terminal only.

1. Short the DLC terminal F/P to the body GND using a jumper wire.
2. Turn the ignition switch to ON to operate the fuel pump.
3. Pressurize the system this way for **at least 5 min** to be sure of no leakage.
 - If there is fuel leakage, inspect the fuel hoses, hose clamps, and fuel pipe sealing surface and replace if necessary.
4. After repairing, assemble the system and repeat Steps 1 to 3.



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FUEL PRESSURE INSPECTION

A3U011401006W05

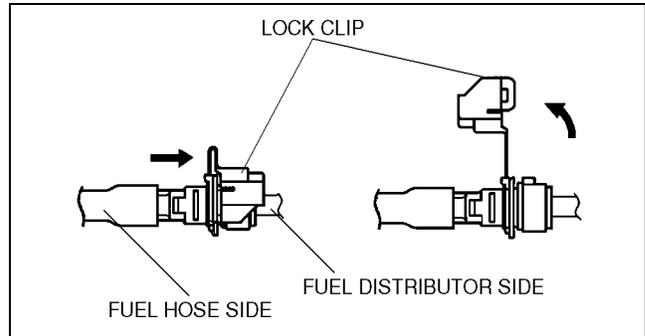
Warning

- Fuel line spills and leaks are dangerous. Fuel can ignite and cause serious injuries or death. Fuel can also irritate skin and eyes. To prevent this, always complete the “BEFORE REPAIR PROCEDURE”. (See 01–14–4 BEFORE REPAIR PROCEDURE.)

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, and make sure that it is free of foreign materials.

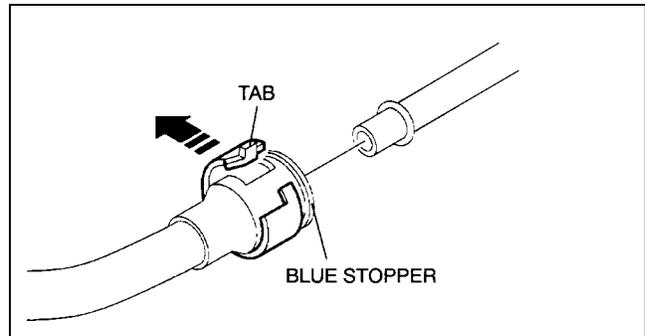
1. Disconnect the battery negative cable.
2. Disconnect the quick release connector from the pulsation damper as follows:
 - (1) Push apart the lock clip and unlock it.



- (2) Lift the tab on the blue locking coupler until the fuel line can be released.
- (3) Pull the fuel hose straight back.

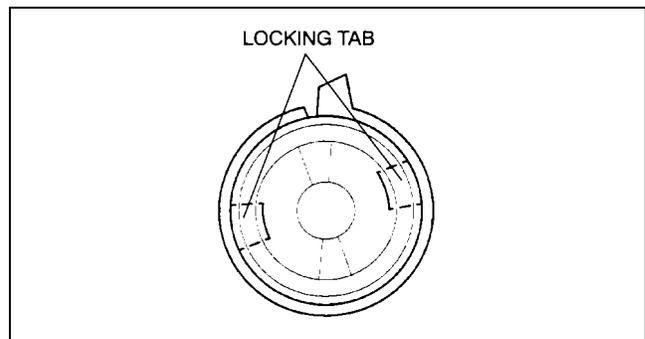
Note

- The blue stopper may be removed from the quick connector. Be sure not to lose it. Reinstall it to the quick release connector before reconnecting the fuel line.



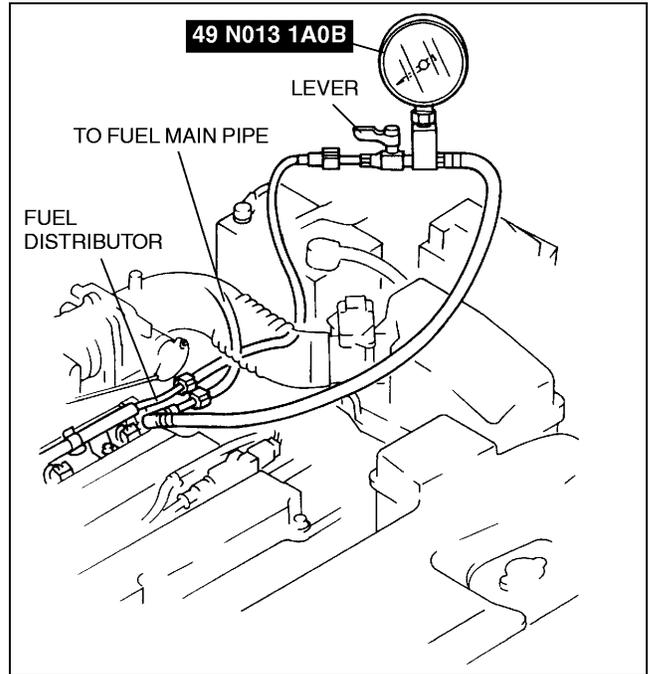
- The orange locking coupler has two internal locking tabs which restrain the pulsation damper pipe. Be sure that the tab on the locking coupler is rotated until it stops to release two internal locking tabs.

3. Push the **SST** quick release connector into the fuel distributor and fuel main hose into the **SST** until a click is heard.



FUEL SYSTEM

- Turn the lever on the **SST** as shown.



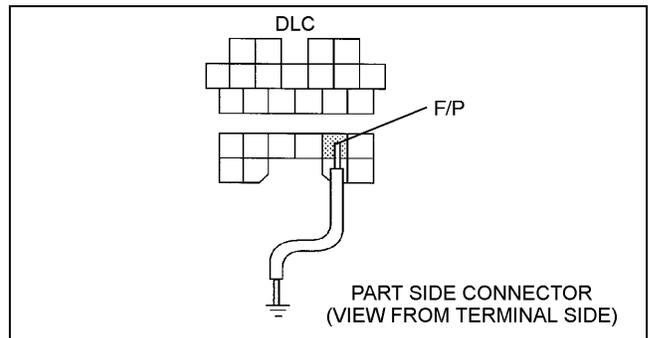
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- Connect the battery negative cable.

Caution

- Connecting to the wrong DLC terminal may possibly cause a malfunction. Carefully connect to the specified terminal only.

- Short the DLC terminal F/P to the body GND using a jumper wire.
- Turn the ignition switch to ON and measure the fuel line pressure.
 - If the pressure is higher than specified, inspect the fuel pump maximum pressure. If specified, inspect fuel return hose or the pressure regulator is clogged.
 - If the pressure is lower than specified, proceed to Step (1).



Fuel line pressure

270—310 kPa {2.7—3.2 kgf/cm², 39—45 psi}

- Inspect change in the fuel line pressure while turning the lever as shown.
 - If the fuel line pressure quickly increases, inspect the pressure regulator.
 - If fuel line pressure gradually increases, inspect the fuel pump maximum pressure.
 - If the fuel pump maximum pressure is normal, inspect for clogging between the fuel pump and the pressure regulator.

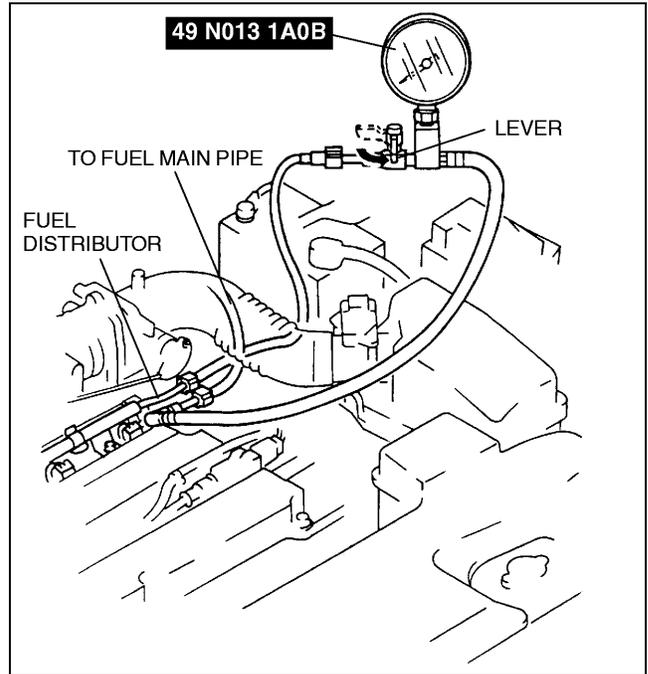
FUEL SYSTEM

8. Turn off the ignition switch and disconnect the jumper wire
9. Observe the fuel pressure **after 5 min.**
 - If the fuel hold pressure is lower than specified, proceed to step (1).

Fuel hold pressure

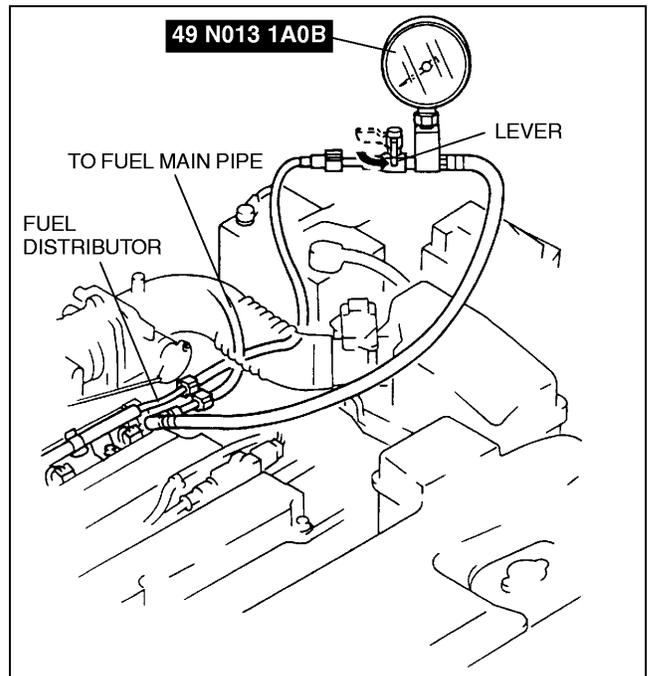
More than 150 kPa {1.5 kgf/cm², 22 psi}

- (1) Inspect changes in the fuel line pressure while turning the lever as shown.
 - If the fuel line pressure holds, replace the pressure regulator. (See 01-14-21 FUEL INJECTOR REMOVAL/INSTALLATION.)
 - If the fuel line pressure does not hold, inspect the fuel leaks from the fuel line and the fuel injector.



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10. Disconnect the **SST**.



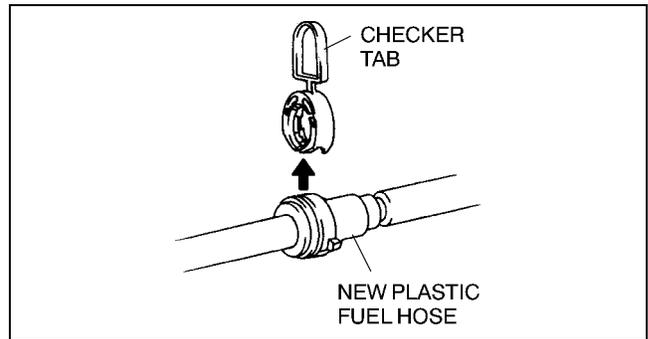
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FUEL SYSTEM

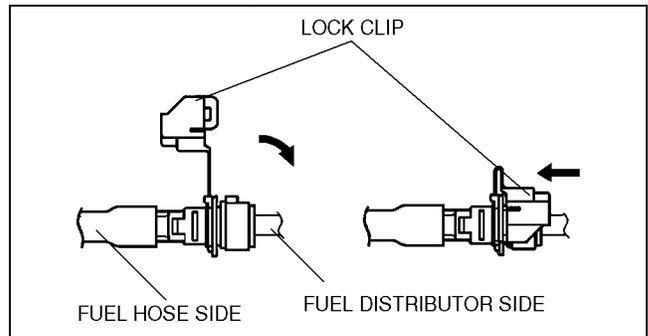
Note

- A checker tab is integrated with the quick release connector for new plastic fuel hoses. The checker tab will be released from the quick release connector after it is completely engaged with the fuel pipe.

11. Inspect the plastic fuel hose and fuel pipe sealing surface for damage and deformation, and replace if necessary.
 - If the quick release connector O-ring is damaged or has slipped, replace the plastic fuel hose.
12. Reconnect the fuel main hose to the fuel distributor until a click is heard.
13. Pull the quick release connector by hand and verify that it is installed securely.
14. Attach the lock clip to the quick release connector in the direction of the fuel distributor and lock it, as shown in the figure.



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Y3E3912W202

FUEL TANK REMOVAL/INSTALLATION

A3U011442110W01

Warning

- **Repairing a fuel tank that has not been properly steam cleaned can be dangerous. Explosion or fire may cause death or serious injury. Always properly steam clean a fuel tank before repairing it.**
- **Fuel line spills and leakage are dangerous. Fuel can ignite and cause serious injuries or death and damage. Fuel can also irritate skin and eyes. To prevent this, do not damage the sealing surface of the fuel pump unit when removing or installing.**

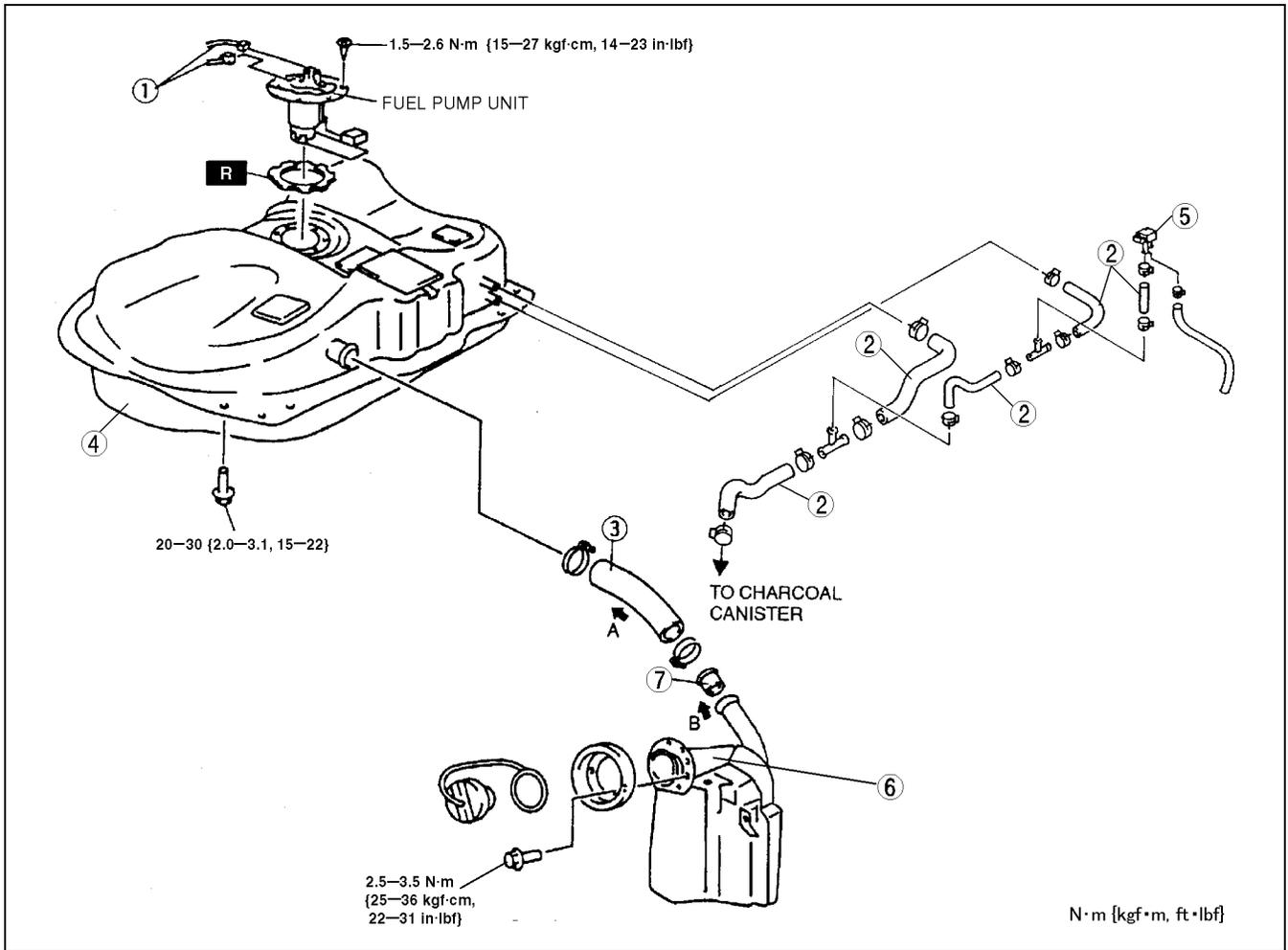
Caution

- **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, and make sure that it is free of foreign material.**

1. Level the vehicle.
2. Complete the "BEFORE REPAIR PROCEDURE". (See 01-14-4 BEFORE REPAIR PROCEDURE.)
3. Disconnect the negative battery cable.
4. Remove the rear seat cushion. (See 09-13-5 REAR SEAT REMOVAL/INSTALLATION.)
5. Remove the service hole cover.
6. Remove the fuel pump unit.
7. Siphon the fuel from the fuel tank.
8. Remove the presilencer. (See 01-15-1 EXHAUST SYSTEM REMOVAL/INSTALLATION.)
9. Remove in the order indicated in the table.
10. Install in the reverse order of removal.

FUEL SYSTEM

11. Complete the "AFTER REPAIR PROCEDURE". (See 01-14-5 AFTER REPAIR PROCEDURE.)



A3U0114W002

1	Plastic fuel hose (See 01-14-11 Plastic Fuel Hose Removal Note.) (See 01-14-12 Plastic Fuel Hose Installation Note.)
2	Evaporative hose (See 01-14-12 Evaporative Hose Installation Note.)
3	Joint hose (See 01-14-12 Joint Hose Installation Note.)

4	Fuel tank
5	Fuel tank pressure sensor
6	Fuel-filler pipe
7	Nonreturn valve (See 01-14-11 Nonreturn Valve Installation Note.)

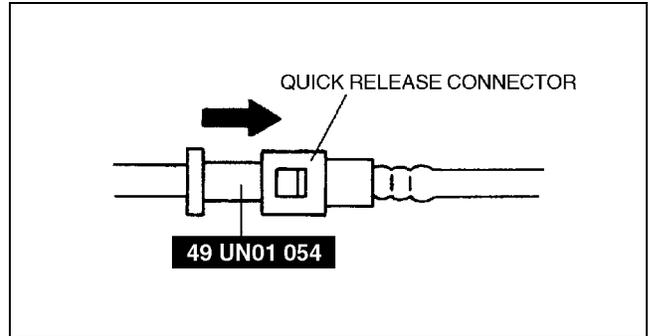
FUEL SYSTEM

Plastic Fuel Hose Removal Note

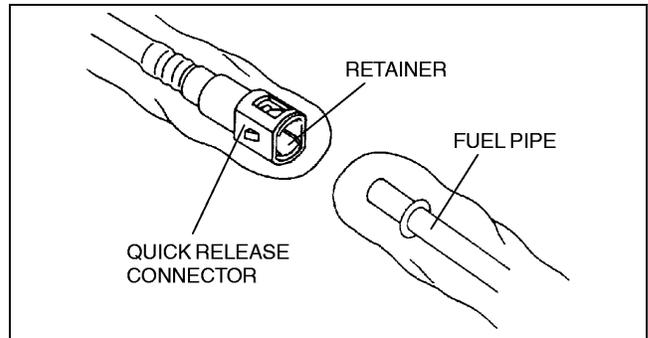
Caution

- The retainer must be replaced if removed from the fuel pipe without using the SST. Otherwise, effectiveness of the retainer will be reduced.

1. Inspect that the quick release connector joint area is free of foreign material.
2. Clean as necessary.
3. Set the **SST** as shown and push into the quick release connector to disconnect the plastic fuel hose.

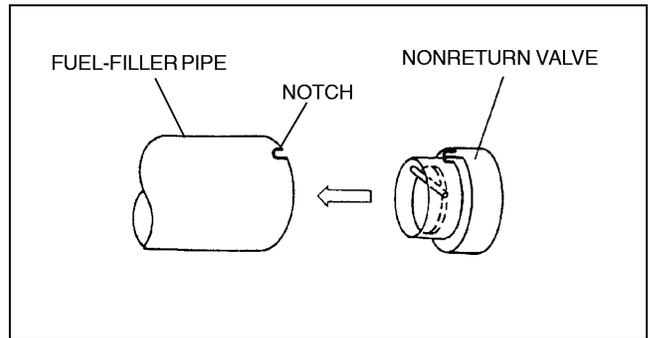


4. Cover the disconnected quick release connector and fuel pipe to prevent them from being scratched or contaminated with foreign material.



Nonreturn Valve Installation Note

1. Align the nonreturn valve with the notch in the fuel-filler pipe as shown, then install.



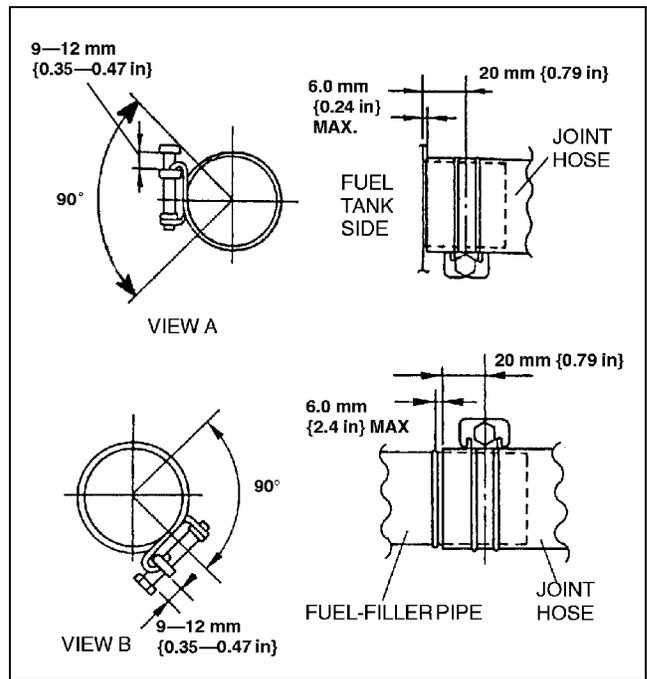
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Joint Hose Installation Note

1. Fit the joint hose onto the respective fittings within the specification, and install clamps as shown.

Specification

35—40 mm {1.4—1.5 in}



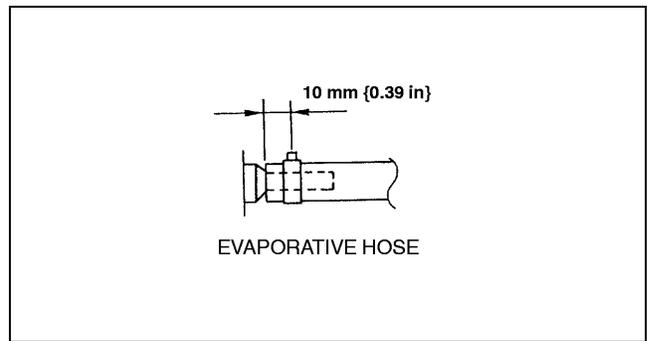
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Evaporative Hose Installation Note

1. Fit evaporative hose onto the respective fittings within the specification, and install clamps as shown.

Specification

10 mm {0.39 in}



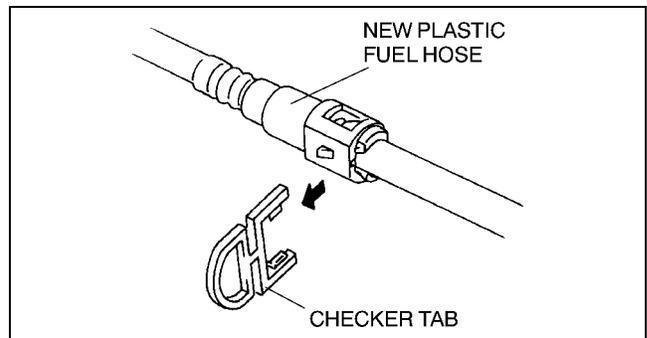
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Plastic Fuel Hose Installation Note

Note

- A checker tab is integrated with quick release connector for new plastic fuel hoses. The checker tab will be released from the quick release connector after it is completely engaged with the fuel pipe.

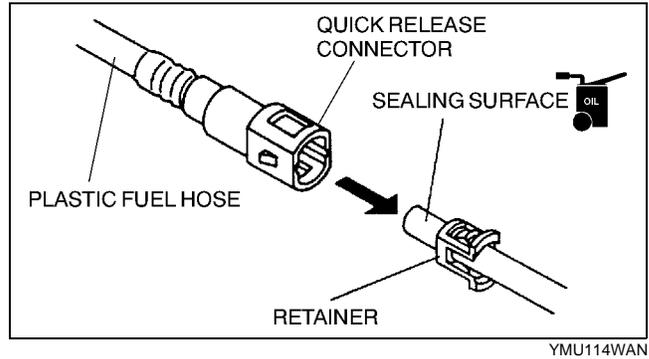
1. When the retainer is not removed, perform the following procedure.
 - (1) Inspect the fuel pump unit sealing surface for damage and deformation, and replace if necessary.
 - If the quick release connector O-ring is damaged, replace the plastic fuel hose.
 - (2) Apply a small amount of clean engine oil to the sealing surface of the fuel pump unit.



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- (3) Align the fuel pipe on the fuel pump unit and quick release connector so that the tabs of the retainer are correctly fitted into the quick release connector. Push the quick release connector straight into the retainer until a click is heard.
- (4) Lightly pull and push the quick release connector a few times by hand and verify that it can move **2.0—3.0 mm {0.08—0.11 in}** and it is connected securely.
 - If quick release connector does not move at all, verify that O-ring is not damaged and slipped, and reconnect the quick release connector.

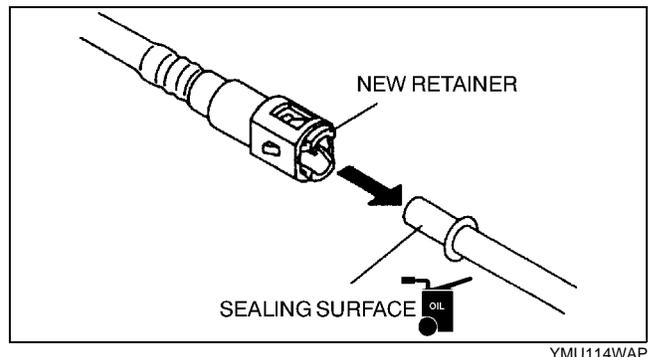


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2. When the retainer is removed, perform the following procedure.

Note

- Use the designated genuine retainer only.
- (1) Inspect the plastic fuel hose and fuel pump unit sealing surface for damage and deformation, and replace if necessary.
 - If the quick release connector O-ring is damaged or has slipped, replace the plastic fuel hose.
 - (2) Install a new retainer onto the quick release connector. Visually inspect that the tabs of the retainer are securely fitted into the quick release connector.
 - (3) Slightly apply clean engine oil to the sealing surface of the fuel pump unit.
 - (4) Push the quick release connector straight into the fuel pump unit until a click is heard.
 - (5) Lightly pull and push the quick release connector a few times by hand and verify that it can move **2.0—3.0 mm {0.08—0.11 in}** and it is connected securely.
 - If quick release connector does not move at all, verify that O-ring is not damaged and slipped, and reconnect the quick release connector.



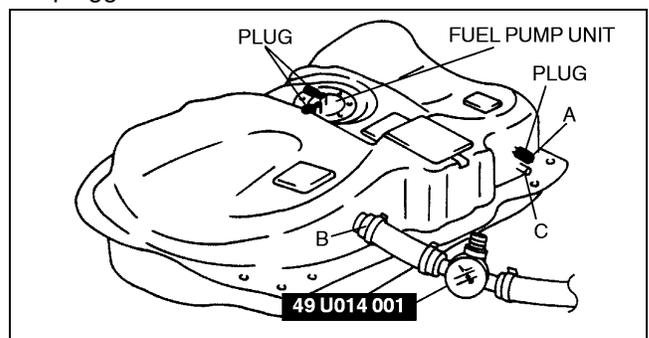
FUEL TANK INSPECTION

A3U011442110W02

Note

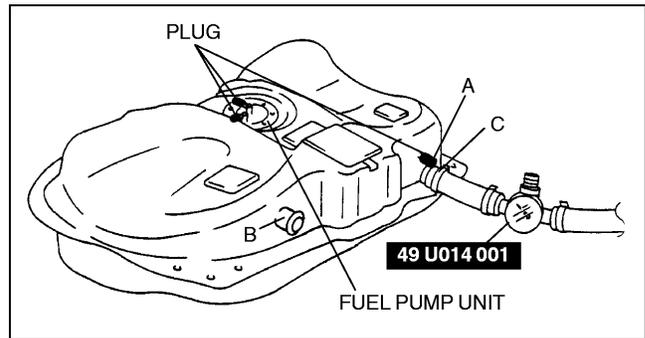
- This inspection is for the 2 rollover valves integrated in the fuel tank. The evaporative gas check valve (two-way) is integrated with each rollover valve.

1. Remove the fuel tank. (See 01-14-9 FUEL TANK REMOVAL/INSTALLATION.)
2. Connect the **SST** to an air compressor.
3. Plug the fuel main pipe and fuel return pipe of the fuel pump unit.
4. Connect the **SST** to port B and plug port A.
5. Level the fuel tank.
6. Apply pressure of **+5.9 kPa {+44 mmHg, +1.7 inHg}** to port B and verify that there is airflow from port C.
 - If there is no airflow, replace the fuel tank.
 - If there is airflow, connect the **SST** to port C with port A plugged.
7. Apply pressure of **+2.0 kPa {+15 mmHg, +0.59 inHg}** to port C and verify that there is airflow from port B.
 - If there is no airflow, replace the fuel tank.
 - If there is airflow, connect the **SST** to port B and turn the fuel tank upside-down.

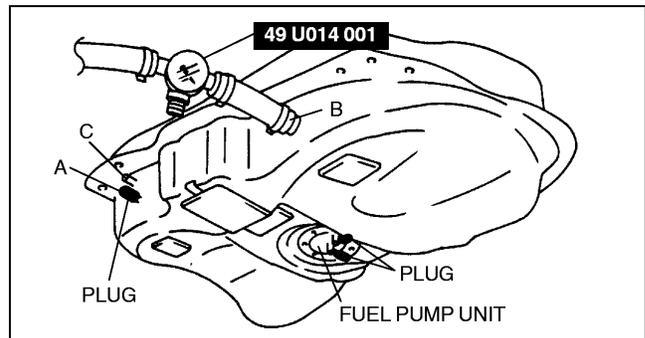


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- Apply pressure of **+0.99 kPa {+7.4 mmHg, 0.29 inHg}** to port B and verify that there is no airflow from port C.
 - If there is airflow, replace the fuel tank.



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FUEL SHUT-OFF VALVE INSPECTION

A3U011442990W01

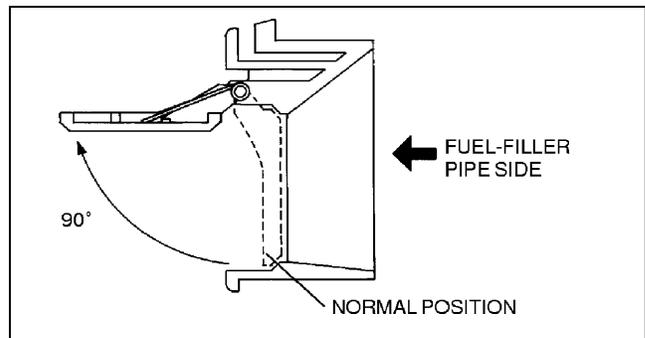
Note

- The fuel shut-off valve is located in the fuel tank.
- Carry out the "FUEL TANK INSPECTION". (See 01-14-13 FUEL TANK INSPECTION.)

NONRETURN VALVE INSPECTION

A3U011442270W01

- Remove the nonreturn valve. (See 01-14-9 FUEL TANK REMOVAL/INSTALLATION.)
- Verify that the nonreturn valve opens up to **90°** when it is pushed from the fuel-filler pipe side, and it returns to the normal position by the spring force.
 - If the nonreturn valve does not open up to **90°** or does not return to the normal position, replace the nonreturn valve.



X3U114WP1

FUEL PUMP UNIT REMOVAL/INSTALLATION

A3U011413350W01

- Remove and install the fuel pump unit. (See 01-14-9 FUEL TANK REMOVAL/INSTALLATION.)

FUEL SYSTEM

FUEL PUMP UNIT DISASSEMBLY/ASSEMBLY

A3U011413350W02

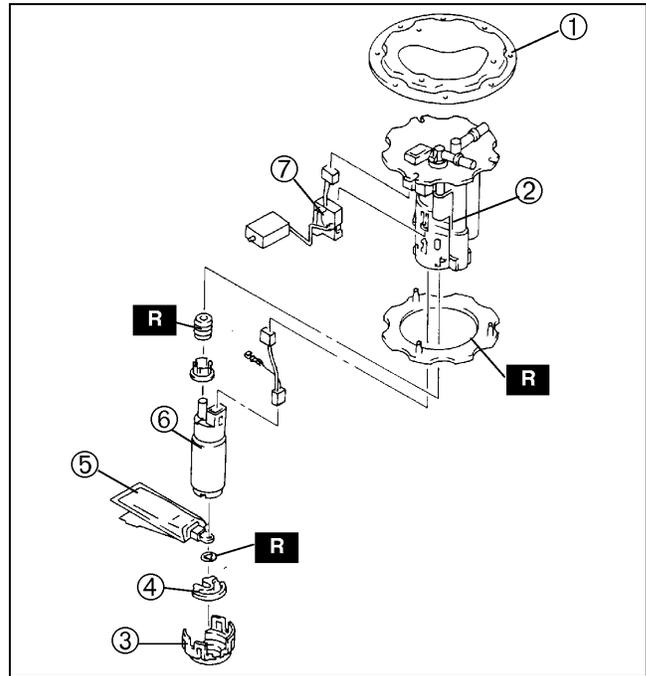
Warning

- Fuel line spills and leakage are dangerous. Fuel can ignite and cause serious injuries or death and damage. Fuel can also irritate skin and eyes. To prevent this, do not damage the sealing surface of the fuel pump unit when removing or installing.

1. Disassemble in the order indicated in the table.

1	Fuel pump unit cover
2	Fuel filter (high-pressure)
3	Spacer
4	Rubber mount
5	Fuel filter (low-pressure)
6	Fuel pump body
7	Fuel gauge sender unit

2. Assemble in the reverse order of disassembly.



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FUEL PUMP UNIT INSPECTION

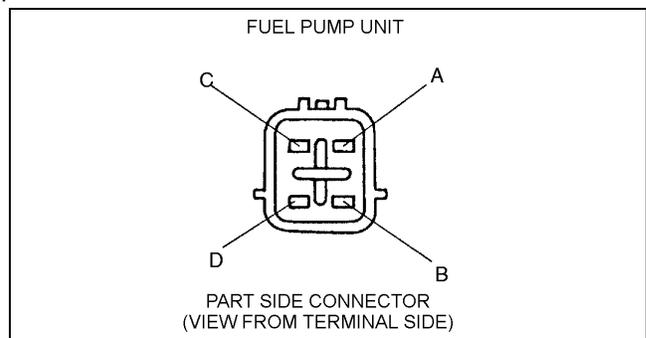
Continuity Inspection

A3U011413350W03

Note

- Perform the following test only when directed.

- Disconnect the negative battery cable.
- Remove the rear seat cushion. (See 09-13-5 REAR SEAT REMOVAL/INSTALLATION.)
- Remove the service hole cover.
- Disconnect the fuel pump unit connector.
- Inspect for continuity between fuel pump unit connector terminals B and D.
 - If there is no continuity, replace the fuel pump body.
 - If as specified, carry out the "Circuit Open/Short Inspection".



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Circuit Open/Short Inspection

1. Remove the PCM.
2. Connect the **SST** (104 Pin Breakout Box) to the PCM as shown.
3. Tighten the connector attaching screw.

Tightening torque

7.9—10.7 N·m {80—110 kgf·cm, 69.5—95.4 in·lbf}

4. Inspect for an open or short circuit in the following wiring harnesses by probing the applicable sensor and **SST** (104 Pin Breakout Box) terminals with ohmmeter leads.

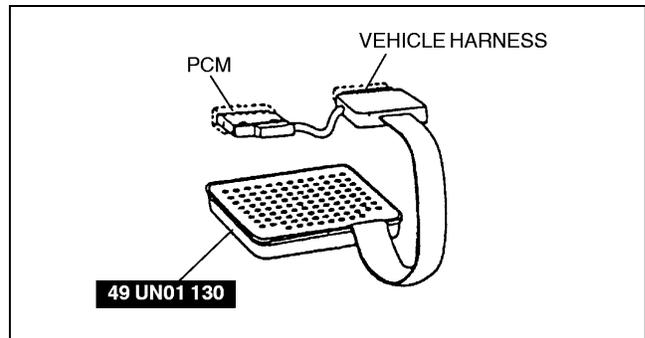
Open circuit

- GND circuit (Fuel pump unit connector terminal D and body GND)
- Power circuit (Fuel pump relay connector terminal C and fuel pump unit connector terminal B through common connector)

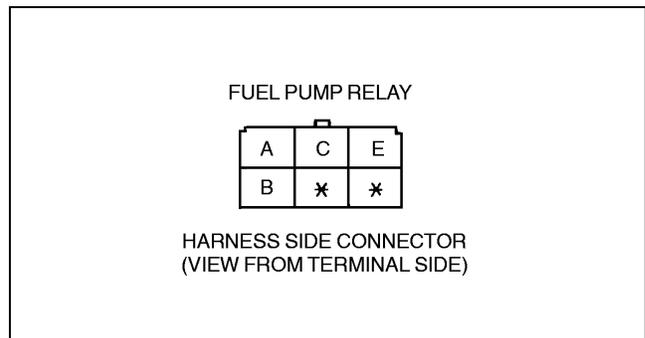
Short circuit

- Fuel pump relay connector terminal C and fuel pump unit connector terminal B through common connector to GND

5. Repair or replace faulty areas.
6. Reconnect the fuel pump unit connector.
7. Install the service hole cover.
8. Install the rear seat cushion.
9. Reconnect the negative battery cable.



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FUEL SYSTEM

Fuel Pump Maximum Pressure Inspection

Warning

- Fuel line spills and leakage are dangerous. Fuel can ignite and cause serious injuries or death and damage. Always carry out the following procedure with the engine stopped.

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, and make sure that it is free of foreign material.

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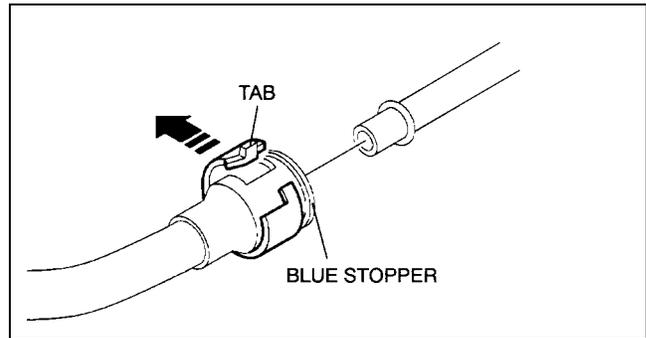
Note

- Perform the following test only when directed.

1. Complete the "BEFORE REPAIR PROCEDURE". (See 01-14-4 BEFORE REPAIR PROCEDURE.)
2. Disconnect the negative battery cable.
3. Disconnect the quick release connector from the pulsation damper as follows:
 - (1) Push the tab on the orange locking coupler 90° until it stops.
 - (2) Pull the fuel hose straight back.

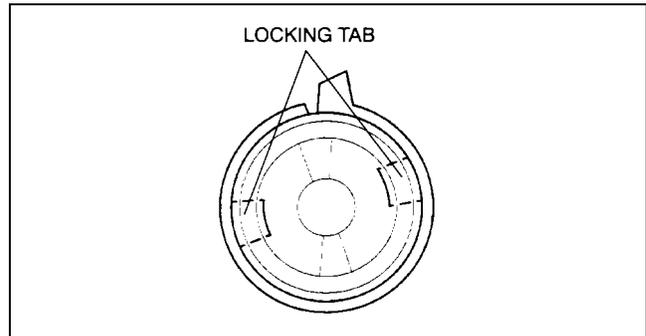
Note

- The blue stopper may be removed from the quick connector. Take care not to lose it. Reinstall it to the quick release connector before reconnecting the fuel line.



Z3U0114W986

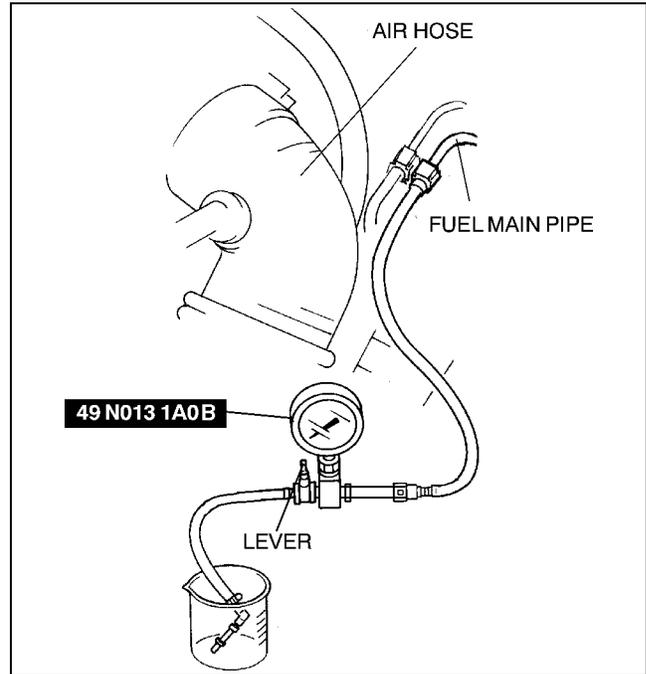
- The orange locking coupler has two internal locking tabs which restrain the pulsation damper pipe. Be sure that the tab on the locking coupler is rotated until it stops to release two internal locking tabs.



Z3U0114W993

FUEL SYSTEM

4. Turn the lever to plug the **SST** outlet.
5. Push the **SST** quick release connector into the fuel main pipe until a click is heard.
6. Set the fuel hose into a container to avoid fuel spills.



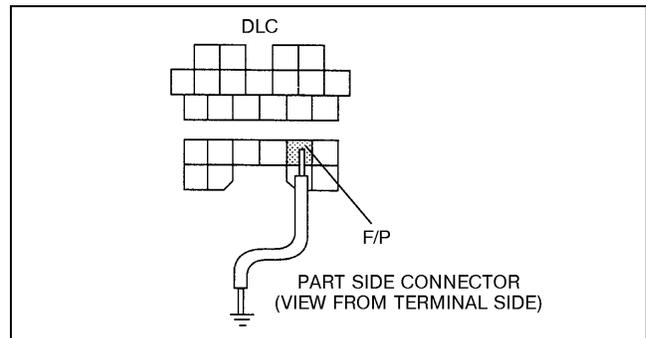
Z3U0114W001

7. Connect the negative battery cable.

Caution

- **Connecting to the wrong DLC terminal may possibly cause a malfunction. Carefully connect to the specified terminal only.**

8. Short the DLC terminal F/P to the body GND using a jumper wire.
9. Turn the ignition switch to ON to operate the fuel pump body.
10. Measure the fuel pump maximum pressure.
 - If not as specified, inspect the following:
 - Fuel pump relay
 - Fuel filters (low-pressure, high-pressure) for clogging
 - Fuel line for clogging or leakage



Y3U114WA7

Fuel pump maximum pressure

450—630 kPa {4.5—6.5 kgf/cm², 64—92 psi}

11. Turn the ignition switch off and disconnect the jumper wire.
12. Disconnect the **SST**.

Note

- A checker tab is integrated with the quick release connector for new plastic fuel hoses. The checker tab will be released from the quick release connector after it is completely engaged with the fuel pipe.

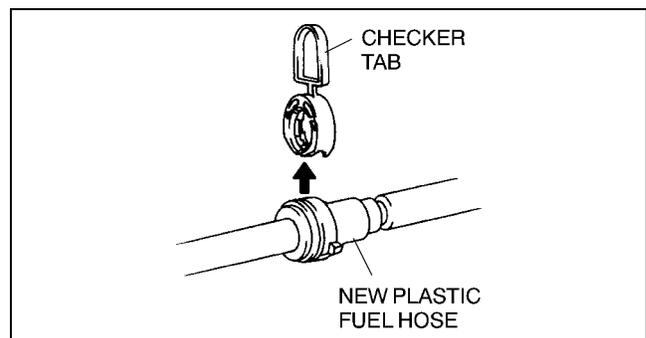
13. Inspect the plastic fuel hose and fuel pipe sealing surface for damage and deformation, and replace if necessary.

- If the quick release connector O-ring is damaged or has slipped, replace the plastic fuel hose.

14. Reconnect the fuel main hose to the fuel main pipe until a click is heard.

15. Pull the quick release connector by hand and verify that it is installed securely.

16. Complete the "AFTER REPAIR PROCEDURE". (See 01-14-5 AFTER REPAIR PROCEDURE.)



YMU114WA8

FUEL SYSTEM

Fuel Pump Hold Pressure Inspection

Warning

- Fuel line spills and leakage are dangerous. Fuel can ignite and cause serious injuries or death and damage. Always carry out the following procedure with the engine stopped.

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, and make sure that it is free of foreign material.

01-14

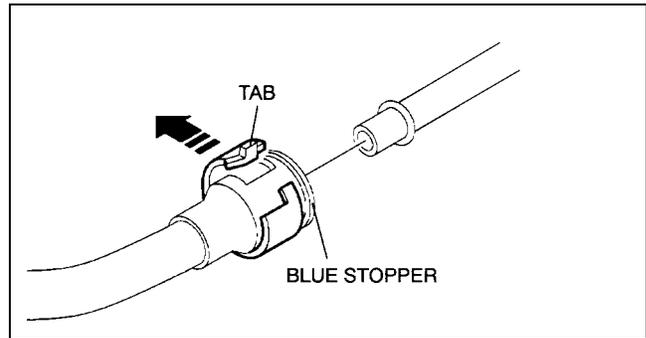
Note

- Perform the following test only when directed.

1. Complete the "BEFORE REPAIR PROCEDURE". (See 01-14-4 BEFORE REPAIR PROCEDURE.)
2. Disconnect the negative battery cable.
3. Disconnect the quick release connector from the pulsation damper as follows:
 - (1) Push the tab on the orange locking coupler 90° until it stops.
 - (2) Pull the fuel hose straight back.

Note

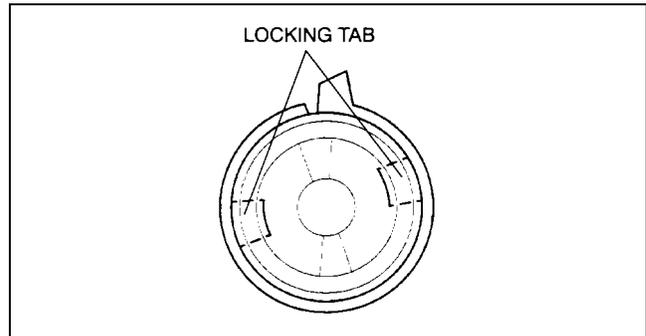
- The blue stopper may be removed from the quick connector. Take care not to lose it. Reinstall it to the quick release connector before reconnecting the fuel line.



Z3U0114W986

- The orange locking coupler has two internal locking tabs which restrain the pulsation damper pipe. Be sure that the tab on the locking coupler is rotated until it stops to release two internal locking tabs.

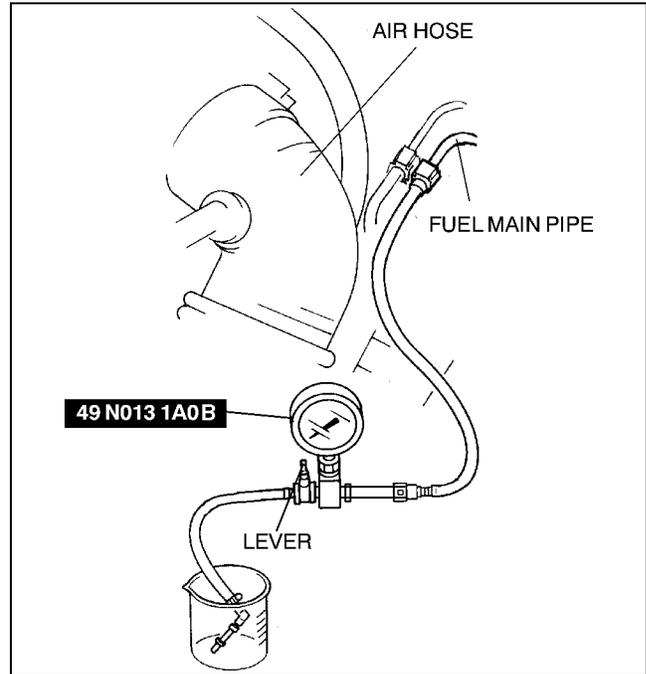
4. Turn the lever as shown to plug the **SST** outlet.
5. Push the **SST** quick release connector into the fuel main pipe until a click is heard.



Z3U0114W993

FUEL SYSTEM

- Set the fuel hose into a container to avoid fuel spills.



Z3U0114W001

- Connect the negative battery cable.

Caution

- Connecting to the wrong DLC terminal may possibly cause a malfunction. Carefully connect to the specified terminal only.

- Short the DLC terminal F/P to the body GND using a jumper wire.
- Turn the ignition switch to ON for **10 s** to operate the fuel pump body.
- Turn the ignition switch off.
- Measure the fuel pump hold pressure **after 5 min.**

- If not as specified, carry out the "PRESSURE REGULATOR INSPECTION", "FUEL INJECTOR INSPECTION". (See 01-14-28 PRESSURE REGULATOR INSPECTION.) (See 01-14-24 FUEL INJECTOR INSPECTION.) Verify that there is no fuel leakage from the quick release connector joint areas.
- If all items above are okay, replace the fuel pump body. (See 01-14-15 FUEL PUMP UNIT DISASSEMBLY/ASSEMBLY.)

Fuel pump hold pressure

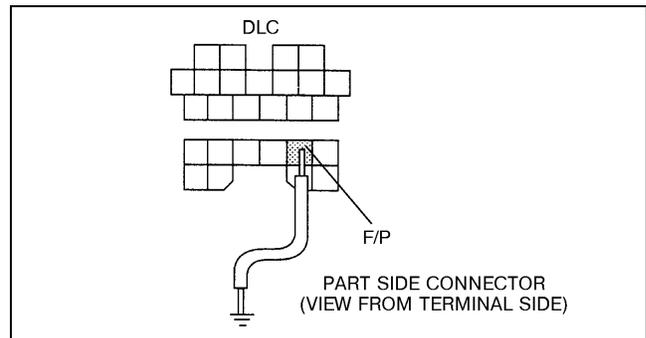
More than 340 kPa {3.5 kgf/cm², 50 psi}

- Disconnect the jumper wire.
- Disconnect the **SST**.

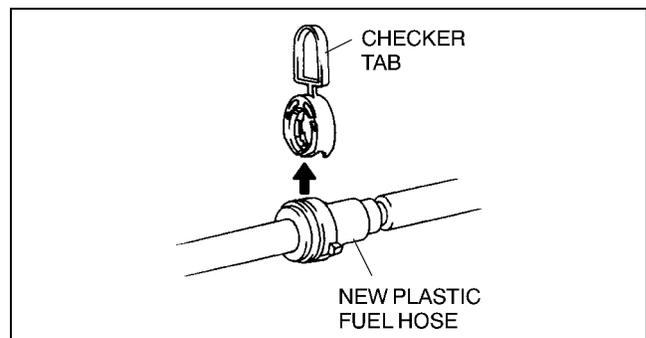
Note

- A checker tab is integrated with the quick release connector for new plastic fuel hoses. The checker tab will be released from the quick release connector after it is completely engaged with the fuel pipe.

- Inspect the plastic fuel hose and fuel pipe sealing surface for damage and deformation, and replace if necessary.
 - If the quick release connector O-ring is damaged or has slipped, replace the plastic fuel hose.



Y3U114WA8



YMU114WA8

FUEL SYSTEM

15. Reconnect the fuel main hose to the fuel main pipe until a click is heard.
16. Pull the quick release connector by hand and verify that it is installed securely.
17. Complete the "AFTER REPAIR PROCEDURE". (See 01-14-5 AFTER REPAIR PROCEDURE.)

FUEL FILTER (HIGH-PRESSURE) REMOVAL/INSTALLATION

A3U011434801W01

1. Remove and install the fuel filter (high-pressure). (See 01-14-15 FUEL PUMP UNIT DISASSEMBLY/ASSEMBLY.)

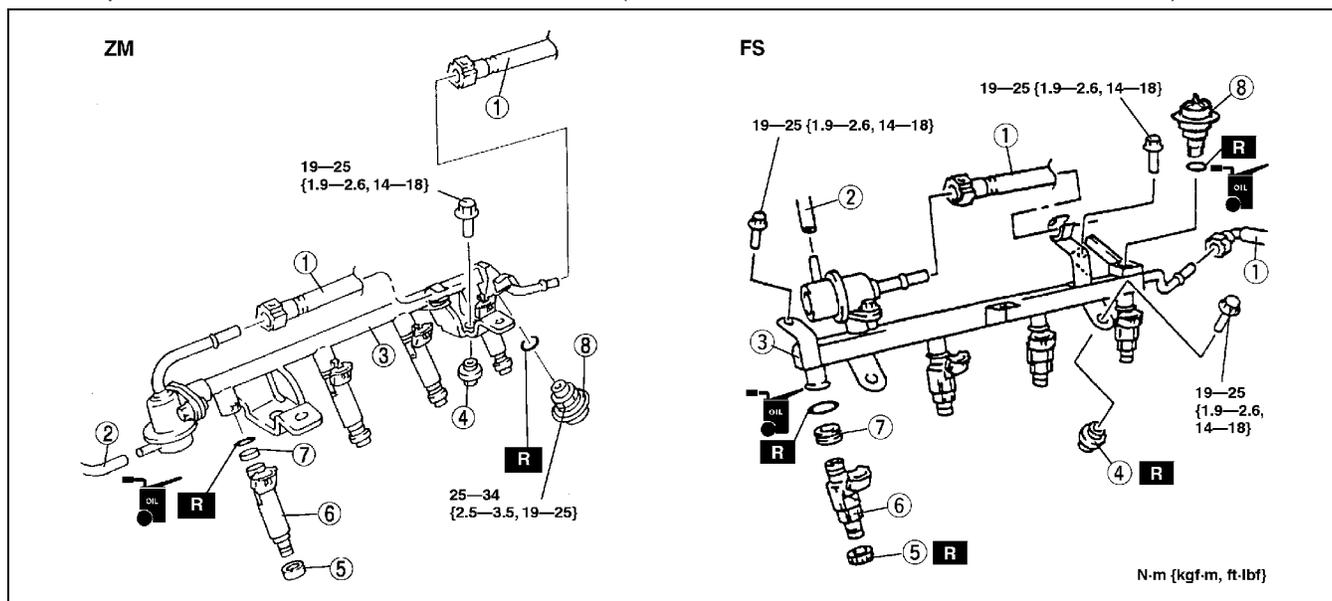
FUEL INJECTOR REMOVAL/INSTALLATION

A3U011413250W01

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, and make sure that it is free of foreign material.**

1. Complete the "BEFORE REPAIR PROCEDURE". (See 01-14-4 BEFORE REPAIR PROCEDURE.)
2. Disconnect the battery negative cable.
3. Remove the accelerator cable bracket. (See 01-13A-5 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [ZM].) (See 01-13B-6 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [FS].)
4. Disconnect the fuel injector connectors and remove the harness from the fuel distributor.
5. Remove in the order indicated in the table.
6. Install in the reverse order of removal.
7. Complete the "AFTER REPAIR PROCEDURE". (See 01-14-5 AFTER REPAIR PROCEDURE.)



Z3U0114W995

1	Plastic fuel hose (See 01-14-22 Plastic Fuel Hose Removal Note) (See 01-14-23 Plastic Fuel Hose Installation Note)
2	Vacuum hose
3	Fuel distributor
4	Fuel distributor insulator

5	Fuel injector insulator
6	Fuel injector (See 01-14-23 Fuel Injector Installation Note (FS only))
7	Grommet
8	Pulsation damper

FUEL SYSTEM

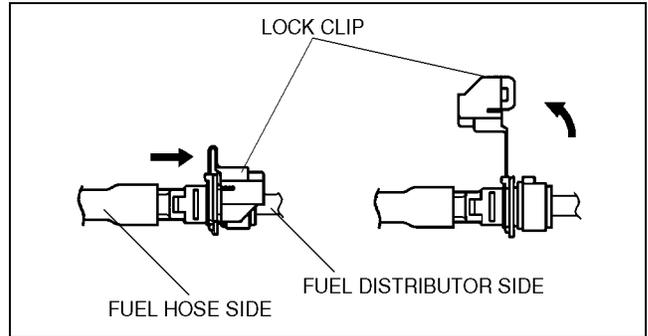
Plastic Fuel Hose Removal Note

Caution

- The quick release connector may be damaged when the tab is bent excessively. Do not expand the tab over the stopper.

1. Disconnect the quick release connector from the pulsation damper as follows:

(1) Push apart the lock clip and unlock it.

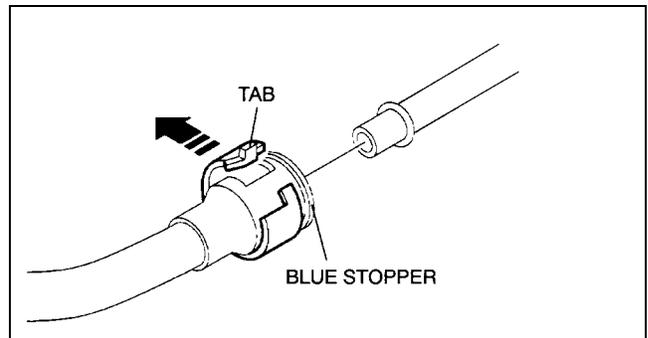


(2) Lift the tab on the blue locking coupler until the fuel line can be released.

(3) Pull the fuel hose straight back.

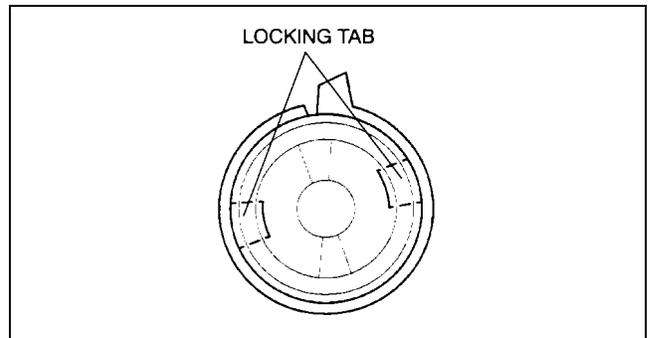
Note

- The blue stopper may be removed from the quick connector. Take care not to lose it. Reinstall it to the quick release connector before reconnecting the fuel line.



- The orange locking coupler has two internal locking tabs which restrain the pulsation damper pipe. Be sure that the tab on the locking coupler is rotated until it stops to release two internal locking tabs.

2. Cover the disconnected quick release connector and pulsation damper with vinyl sheet or the like to prevent it from being scratched or contaminated with foreign materials.

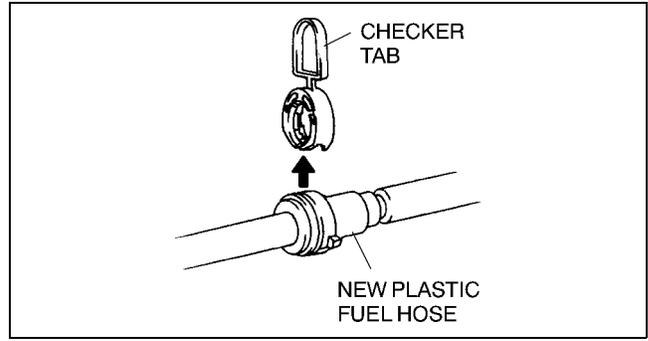


Plastic Fuel Hose Installation Note

Note

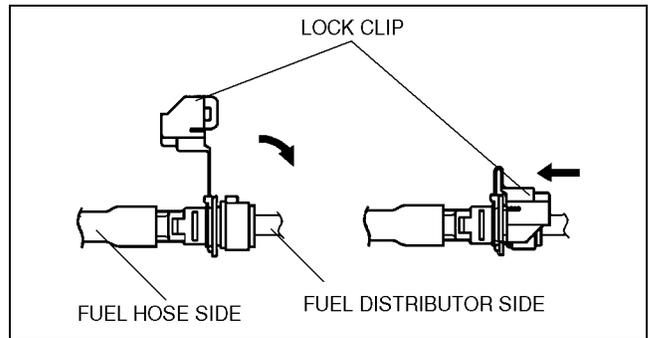
- A checker tab is integrated with the quick release connector for new plastic fuel hoses. The checker tab will be released from the quick release connector after it is completely engaged with the pulsation damper.

1. Inspect the plastic fuel hose and pulsation damper sealing surface for damage and deformation, and replace if necessary.
 - If the quick release connector O-ring is damaged or has slipped, replace the plastic fuel hose.
2. Apply a small amount of clean engine oil to the sealing surface of the pulsation damper.
3. Push the quick release connector straight into the pulsation damper until a click is heard.
4. Lightly pull and push the quick release connector a few times by hand and verify that it can move **2.0—3.0 mm {0.08—0.11 in}** and it is connected securely.
 - If quick release connector does not move at all, verify that O-ring is not damaged and slipped, and reconnect the quick release connector.
5. Attach the lock clip to the quick release connector in the direction of the fuel distributor and lock it, as shown in the figure.



YMU114WA8

01-14



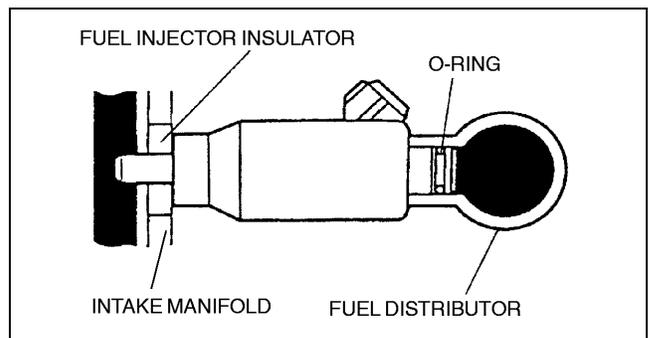
Y3E3912W202

Fuel Injector Installation Note (FS only)

1. Install each fuel injector as indicated in the table.

Cylinder number	Fuel injector body color
No.1, No.2 cylinder	Green
No.3, No.4 cylinder	Purple

2. Use new fuel injector O-rings.
3. Apply a small amount of engine oil to the O-rings and install them on the fuel distributor.
4. Verify that the O-rings and the fuel injector sealing surfaces are free of foreign material. Clean with gasoline if necessary.
5. Align the fuel injector notch with the fuel distributor and install the fuel injectors on the fuel distributor with a light twisting motion so that the O-rings will not be folded.



X3U114WC6

FUEL SYSTEM

FUEL INJECTOR INSPECTION

A3U011413250W02

Simulation Test

1. Carry out the "Fuel Injector Operation Inspection". (See 01-03A-60 Fuel Injector Operation Inspection.) (See 01-03B-59 Fuel Injector Operation Inspection.)
 - If not as specified, perform the further inspection for the fuel injectors.

Resistance Inspection

Note

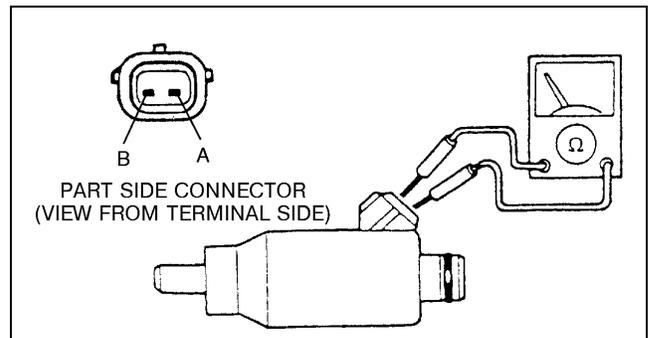
- Perform the following test only when directed.

1. Turn the ignition switch off.
2. Disconnect the battery negative cable.
3. Disconnect the fuel injector connectors.
4. Measure the resistance of the fuel injector using an ohmmeter.
 - If not as specified, replace the fuel injector. (See 01-14-21 FUEL INJECTOR REMOVAL/INSTALLATION.)
 - If as specified but "Simulation Test" is failed, carry out the "Circuit Open/Short Inspection".

Resistance [20 °C {68 °F}]

ZM: Approx.13.8 ohms

FS: 14.2—14.8 ohms



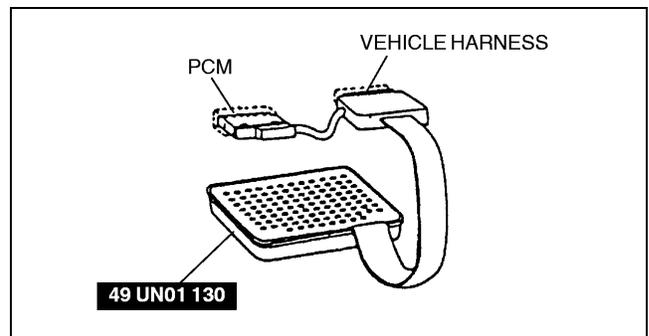
Y3U114WA9

Circuit Open/Short Inspection

1. Disconnect the PCM connector.
2. Connect the **SST** (104 Pin Breakout Box) to the PCM as shown.
3. Tighten the connector attaching screw.

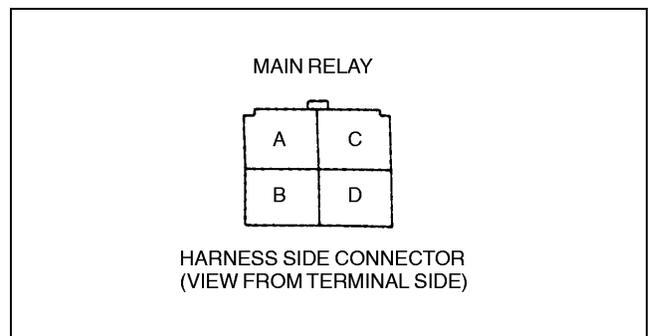
Tightening torque

7.9—10.7 N·m {80—110 kgf·cm, 69.5—95.4 in·lbf}



Y3U114WB8

4. Inspect for an open or short circuit in the following wiring harnesses by probing the applicable sensor and **SST** (104 Pin Breakout Box) terminals with ohmmeter leads.



X3U114WC8

Open circuit

- GND circuit (No.1 cylinder fuel injector connector terminal B and PCM connector terminal 75)
- GND circuit (No.2 cylinder fuel injector connector terminal B and PCM connector terminal 101)
- GND circuit (No.3 cylinder fuel injector connector terminal B and PCM connector terminal 74)
- GND circuit (No.4 cylinder fuel injector connector terminal B and PCM connector terminal 100)
- Power circuit (No.1 cylinder fuel injector connector terminal A and main relay connector terminal D through common connector)
- Power circuit (No.2 cylinder fuel injector connector terminal A and main relay connector terminal D through common connector)
- Power circuit (No.3 cylinder fuel injector connector terminal A and main relay connector terminal D through common connector)
- Power circuit (No.4 cylinder fuel injector connector terminal A and main relay connector terminal D through common connector)

Short circuit

- No.1 cylinder fuel injector connector terminal B and PCM connector terminal 75 to GND
- No.2 cylinder fuel injector connector terminal B and PCM connector terminal 101 to GND
- No.3 cylinder fuel injector connector terminal B and PCM connector terminal 74 to GND
- No.4 cylinder fuel injector connector terminal B and PCM connector terminal 100 to GND

5. Repair or replace faulty areas.
6. Reconnect the fuel injector connectors.
7. Reconnect the battery negative cable.

Fuel Leakage Test

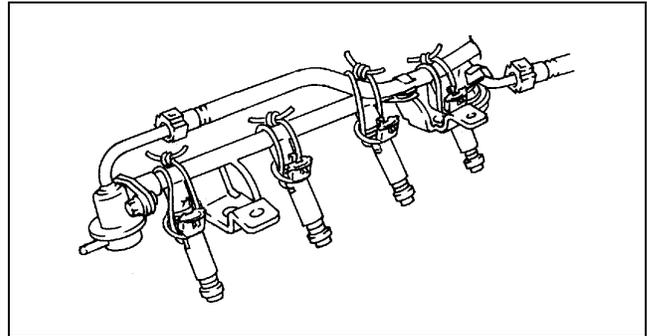
Warning

- **Fuel line spills and leakage are dangerous. Fuel can ignite and cause serious injuries or death and damage. Always carry out the following procedure with the engine stopped.**

Note

- Perform the following test only when directed.

1. Complete the "BEFORE REPAIR PROCEDURE". (See 01-14-4 BEFORE REPAIR PROCEDURE.)
2. Disconnect the battery negative cable.
3. Remove the fuel injectors together with the fuel distributor. (See 01-14-21 FUEL INJECTOR REMOVAL/INSTALLATION.)
4. Fasten the fuel injectors firmly to the fuel distributor with wires.

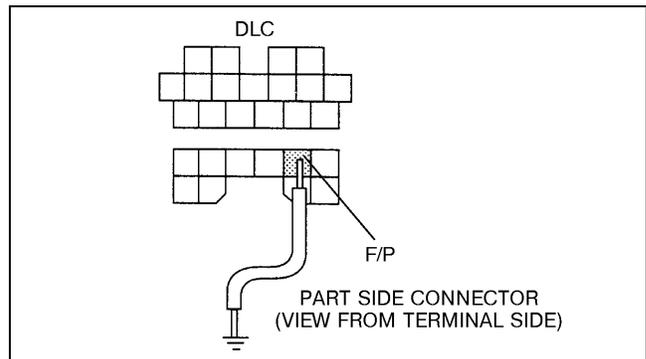


X3U114WC9

5. Connect the battery negative cable.

Caution

- **Connecting to the wrong DLC terminal may possibly cause a malfunction. Carefully connect to the specified terminal only.**



Y3U114WAA

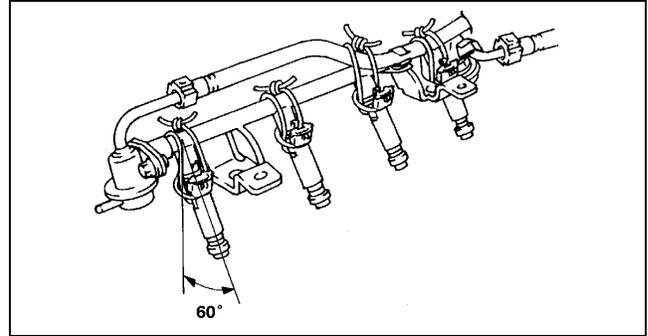
FUEL SYSTEM

- Short the DLC terminal F/P to the body GND using a jumper wire.
- Turn the ignition switch to ON to operate the fuel pump body.
- Tilt the fuel injectors **approx. 60 degrees** and verify that fuel leakage from the fuel injector nozzles is within the specification.
 - If not as specified, replace the fuel injector.

Fuel leakage

Less than 1 drop/2 min

- Turn the ignition switch off and remove the jumper wire.
- Complete the "AFTER REPAIR PROCEDURE". (See 01-14-5 AFTER REPAIR PROCEDURE.)



X3U114WD0

Volume Test

Warning

- Fuel line spills and leakage are dangerous. Fuel can ignite and cause serious injuries or death and damage. Always carry out the following procedure with the engine stopped.

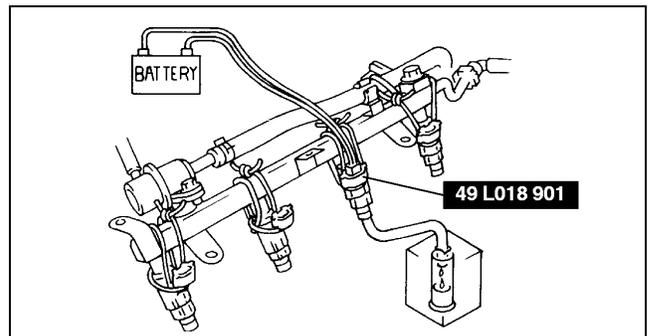
Note

- Perform the following test only when directed.
- If you have an after market fuel injector tester or **SST** (49 L018 901), perform this inspection.
- If there is no an after market fuel injector tester available, perform "Simulation Test", "Resistance Inspection", and "Fuel Leakage Inspection" to verify whether the fuel injector is okay or not.

- Complete the "BEFORE REPAIR PROCEDURE". (See 01-14-4 BEFORE REPAIR PROCEDURE.)
- Disconnect the battery negative cable.

Using the SST

- Remove the fuel injectors together with the fuel distributor with connected to fuel hose. (See 01-14-21 FUEL INJECTOR REMOVAL/INSTALLATION.)
- Fasten the fuel injectors firmly to the fuel distributor with wires.
- Connect the fuel injector to the **SST** or the fuel injector tester as shown in the figure.



X3U114WJ4

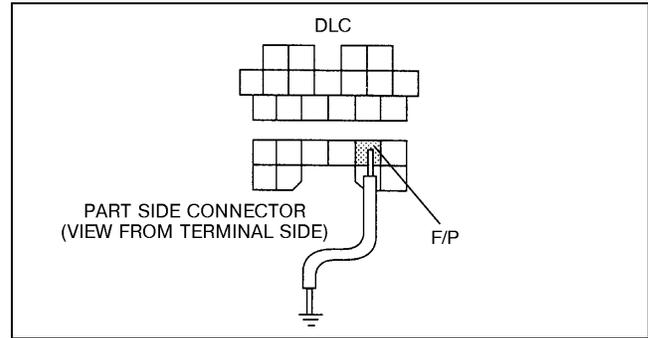
FUEL SYSTEM

4. Connect the battery negative cable.

Caution

- **Connecting to the wrong DLC terminal may possibly cause a malfunction. Carefully connect to the specified terminal only.**

5. Short the DLC terminal F/P to body GND using a jumper wire.
6. Turn the ignition switch to ON.
7. Measure the injection volume of each fuel injector using a graduated container.
 - If not as specified, replace the fuel injector.



Y3U114WAW

01-14

Injection volume

ZM: 38.1—40.4 ml {38.1—40.4 cc, 1.29—1.36 fl oz}/15 s

FS: 68—75 ml {68—75 cc, 2.30—2.53 fl oz}/15 s

8. Turn the ignition switch to LOCK.
9. Disconnect the battery negative cable.
10. Disconnect the **SST** or the fuel injector tester from the fuel injector.
11. Disconnect the jumper wire.
12. Complete the "AFTER REPAIR PROCEDURE". (See 01-14-5 AFTER REPAIR PROCEDURE.)

Using a Fuel Injector Tester

1. Remove the fuel injectors. (See 01-14-21 FUEL INJECTOR REMOVAL/INSTALLATION.)
2. Connect the fuel injector to a fuel injector tester.
3. Measure the injection volume of each fuel injector.
 - If not as specified, replace the fuel injector.

Injection volume

ZM: 38.1—40.4 ml {38.1—40.4 cc, 1.29—1.36 fl oz}/15 s

FS: 68—75 ml {68—75 cc, 2.3—2.5 fl oz}/15 s

4. Complete the "AFTER REPAIR PROCEDURE". (See 01-14-5 AFTER REPAIR PROCEDURE.)

PRESSURE REGULATOR REMOVAL/INSTALLATION

A3U011413280W01

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, and make sure that it is free of foreign material.**

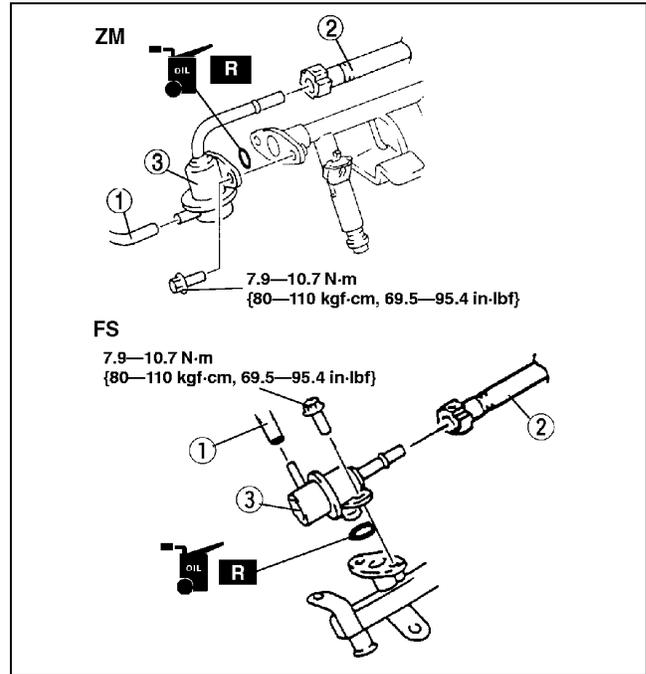
1. Complete the "BEFORE REPAIR PROCEDURE". (See 01-14-4 BEFORE REPAIR PROCEDURE.)
2. Disconnect the battery negative cable.

FUEL SYSTEM

3. Remove in the order indicated in the table.

1	Vacuum hose
2	Plastic fuel hose (See 01-14-22 Plastic Fuel Hose Removal Note) (See 01-14-23 Plastic Fuel Hose Installation Note)
3	Pressure regulator

4. Install in the reverse order of removal.
5. Complete the "AFTER REPAIR PROCEDURE".
(See 01-14-5 AFTER REPAIR PROCEDURE.)



Z3U0114W992

PRESSURE REGULATOR INSPECTION

A3U011413280W02

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, and make sure that it is free of foreign material.

Simulation Test

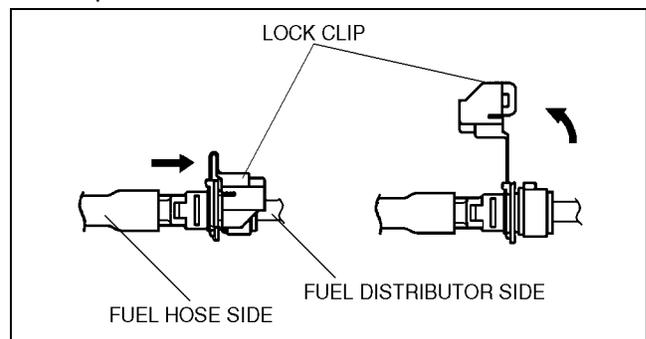
1. Carry out the "FUEL PRESSURE INSPECTION". (See 01-14-6 FUEL PRESSURE INSPECTION.)
 - If not as specified, perform the further inspection for the pressure regulator.

Operation Inspection

Note

- Perform the following test only when directed.

1. Complete the "BEFORE REPAIR PROCEDURE". (See 01-14-4 BEFORE REPAIR PROCEDURE.)
2. Disconnect the battery negative cable.
3. Disconnect the quick release connector from the pulsation damper as follows:
 - (1) Push apart the lock clip and unlock it.



Y3E3912W201

FUEL SYSTEM

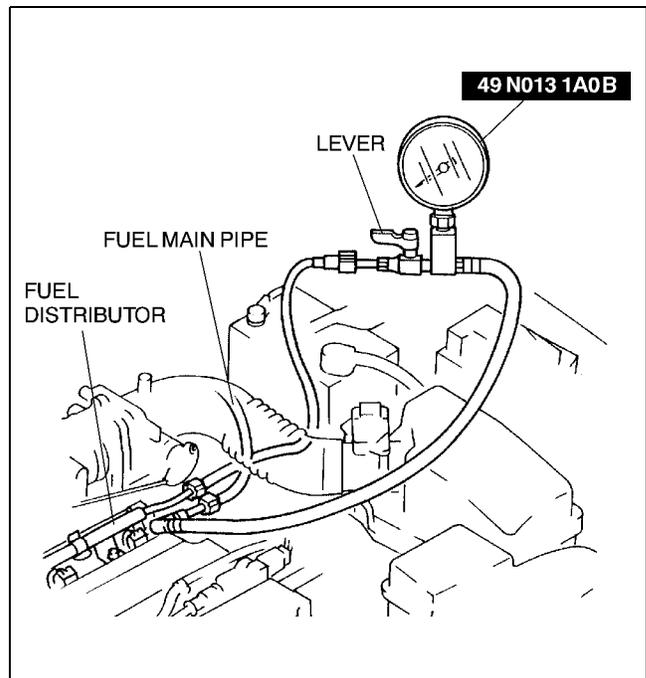
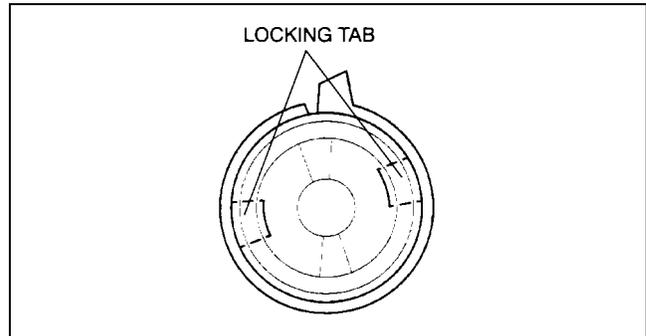
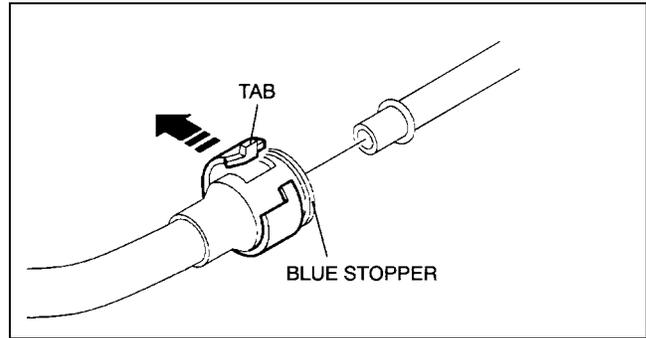
- (2) Lift the tab on the blue locking coupler until the fuel line can be released.
- (3) Pull the fuel hose straight back.

Note

- The blue stopper may be removed from the quick connector. Take care not to lose it. Reinstall it to the quick release connector before reconnecting the fuel line.
 - The orange locking coupler has two internal locking tabs which retain the pulsation damper pipe. Be sure that the tab on the locking coupler is rotated until it stops to release two internal locking tabs.
4. Push the **SST** quick release connector into the fuel distributor and fuel main hose into the **SST** until a click is heard.
 5. Turn the lever on the **SST** as shown.
 6. Connect the battery negative cable.
 7. Start the engine and let it idle.
 8. Measure the fuel line pressure **after approx. 2 min.**

Fuel line pressure

210—250 kPa {2.1—2.6 kgf/cm², 30—36 psi}



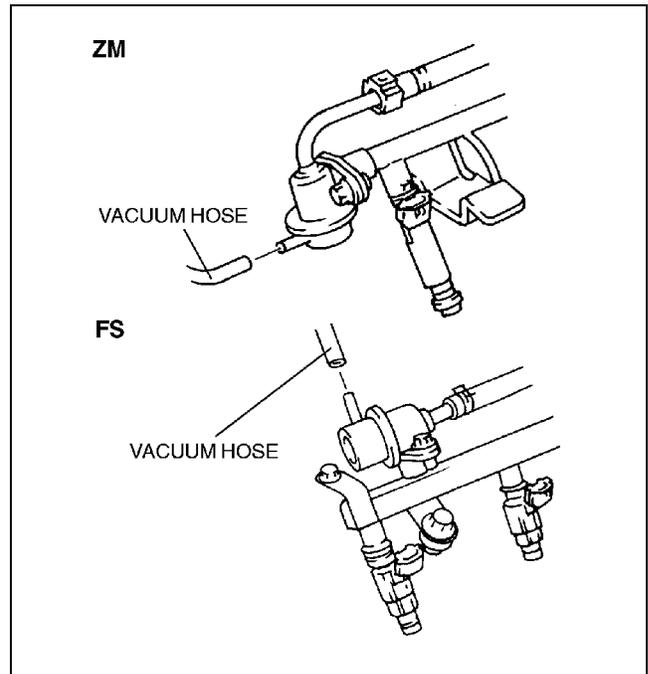
FUEL SYSTEM

- Disconnect the vacuum hose from the pressure regulator and measure the fuel line pressure.

Fuel line pressure

270—310 kPa {2.7—3.2 kgf/cm², 39—45 psi}

- Turn the ignition switch off.



Z3U0114W989

- Disconnect the **SST**.

Note

- A checker tab is integrated with the quick release connector for new plastic fuel hoses. The checker tab will be released from the quick release connector after it is completely engaged with the fuel pipe.

- Inspect the plastic fuel hose and pulsation damper sealing surface for damage and deformation, and replace if necessary.

- If the quick release connector O-ring is damaged or has slipped, replace the plastic fuel hose.

- Apply a small amount of clean engine oil to the sealing surface of the pulsation damper.

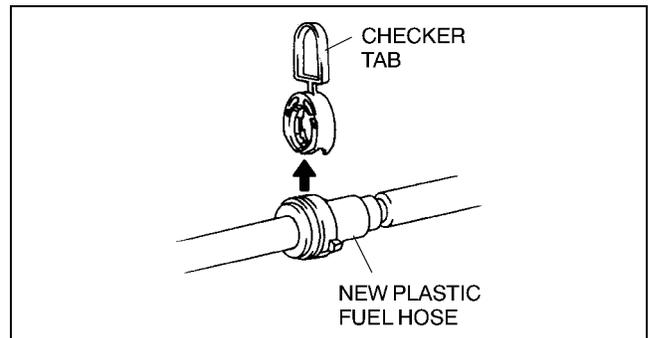
- Reconnect the plastic fuel hose straight to the pulsation damper until a click is heard.

- Lightly pull and push the quick release connector a few times by hand and verify that it can move **2.0—3.0 mm {0.08—0.11 in}** and it is connected securely.

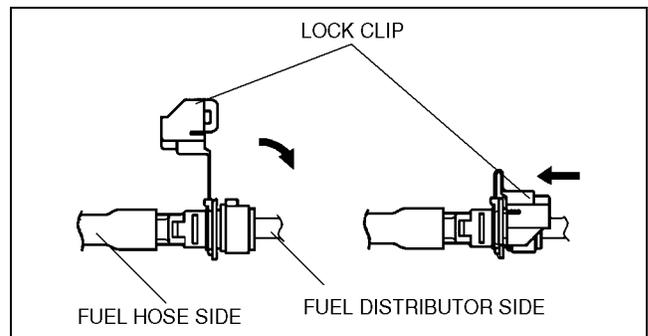
- If quick release connector does not move at all, verify that O-ring is not damaged and slipped, and reconnect the quick release connector.

- Attach the lock clip to the quick release connector in the direction of the fuel distributor and lock it, as shown in the figure.

- Complete the "AFTER REPAIR PROCEDURE". (See 01-14-5 AFTER REPAIR PROCEDURE.)



YMU114WA8



Y3E3912W202

PULSATION DAMPER REMOVAL/INSTALLATION

A3U011420180W01

- Remove and install the pulsation damper. (See 01-14-21 FUEL INJECTOR REMOVAL/INSTALLATION.)

PULSATION DAMPER INSPECTION

A3U011420180W02

1. Remove the pulsation damper. (See 01-14-21 FUEL INJECTOR REMOVAL/INSTALLATION.)
2. Visually inspect the pulsation damper for damage and cracks. Also inspect that there is no extreme rust which will cause fuel leakage.
 - If either is observed, replace the pulsation damper.

PRC SOLENOID VALVE REMOVAL/INSTALLATION

A3U011418740W01

1. Remove and install the PRC solenoid valve.
 - Remove the PRC solenoid valve from the intake manifold. (See 01-13A-5 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [ZM].)

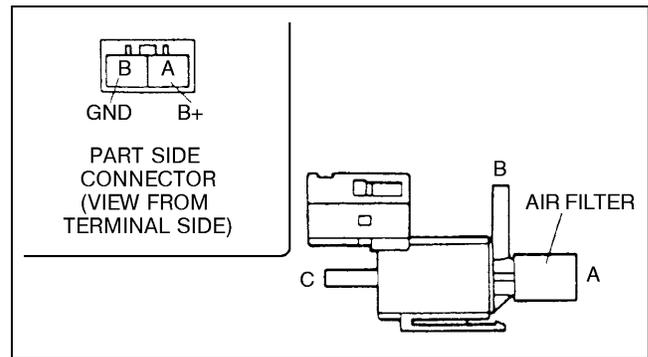
PRC SOLENOID VALVE INSPECTION

A3U011418740W02

Airflow Inspection

Note

- Perform the following test only as directed.
1. Carry out the “Pressure Regulator Control Inspection”. (See 01-03A-59 Pressure Regulator Control Inspection.) (See 01-03B-58 Pressure Regulator Control Inspection.)
 - If not as specified, perform the further inspection for the PRC solenoid valve.
 2. Disconnect the negative battery cable.
 3. Remove the PRC solenoid valve.
 4. Inspect airflow between each port under the following conditions.
 - If not as specified, replace the PRC solenoid valve.
 - If as specified but the “Pressure Regulator Control Inspection” failed, carry out the “Circuit Open/Short Inspection”.
 - If there is an open or short circuit, repair or replace wiring harnesses.
 - If there is no open or short circuit, replace PRC solenoid valve.



Y3U114WAC

○—○ : Continuity ○=○ : Airflow

Step	Terminal		Port		
	A	B	A	B	C
1	○—○	○—○		○=○	○=○
2	B+	GND	○—○	○—○	

X3U114WE8

FUEL SYSTEM

Circuit Open/Short Inspection

1. Remove the PCM.
2. Connect the **SST** (104 Pin Breakout Box) to the PCM as shown.
3. Tighten the connector attaching screw.

Tightening torque

7.9—10.7 N·m {80—110 kgf·cm, 69.5—95.4 in·lbf}

4. Inspect for an open or short circuit in the following wiring harnesses by probing the applicable sensor and **SST** (104 Pin Breakout Box) terminals with ohmmeter leads.

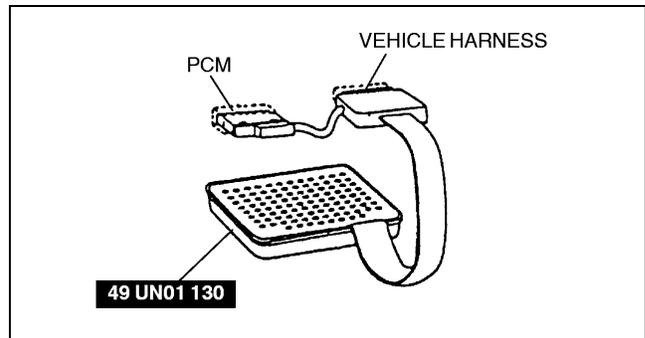
Open circuit

- Power circuit (PRC solenoid valve connector terminal A and main relay connector terminal D through common connector)
- GND circuit (PRC solenoid valve connector terminal B and PCM connector terminal 95)

Short circuit

- Power circuit (PRC solenoid valve connector terminal A and main relay connector terminal D through common connector to GND)
- GND circuit (PRC solenoid valve connector terminal B and PCM connector terminal 95 to GND)

5. Reconnect the PRC solenoid valve connector.
6. Reconnect the negative battery cable.



Y3U114W/B9