

## **01-14 FUEL SYSTEM**

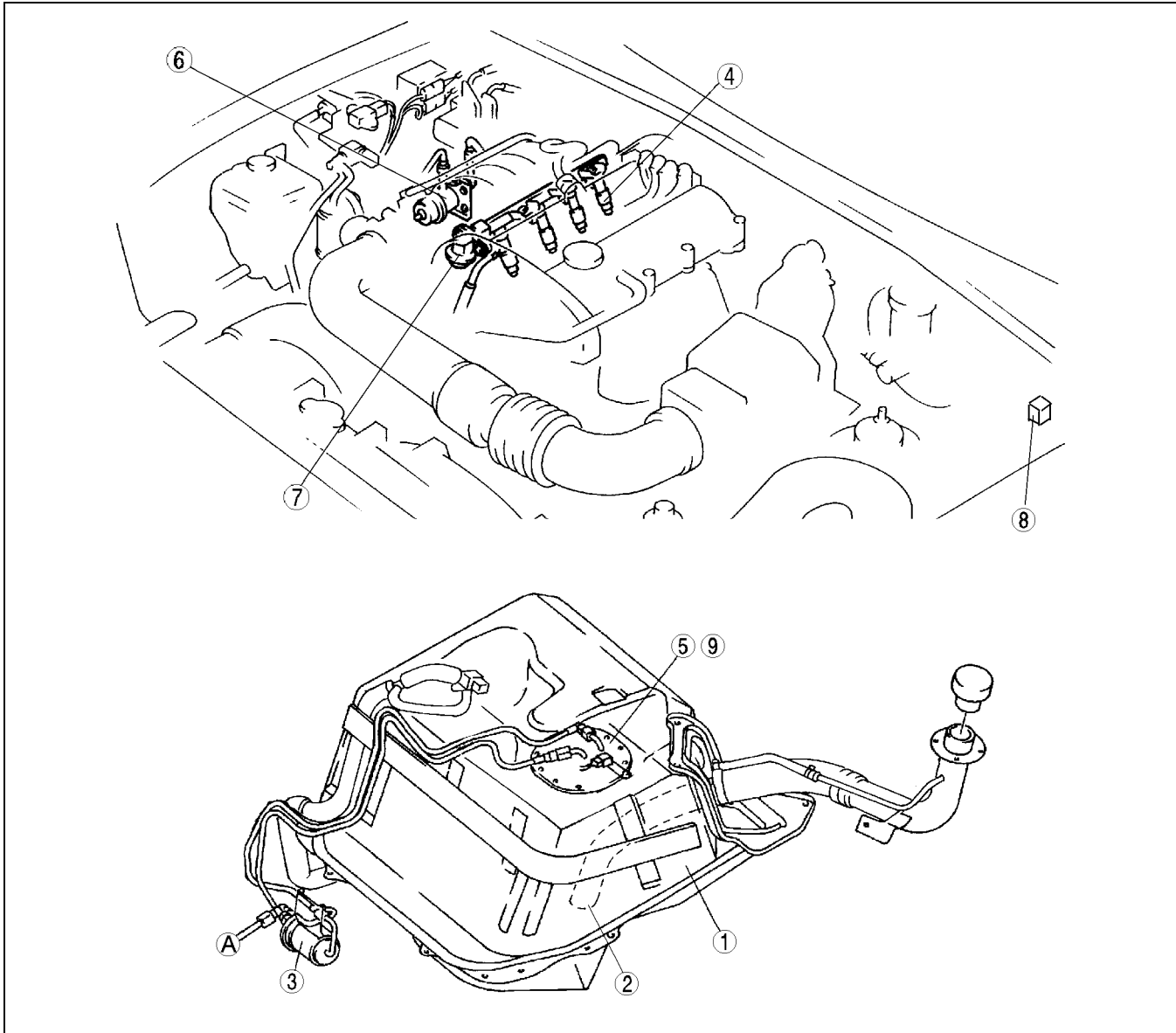
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# FUEL SYSTEM

## FUEL SYSTEM LOCATION INDEX

A5U011401006W01



A5U0114W003

1	Fuel tank (See 01-14-6 FUEL TANK REMOVAL/ INSTALLATION)
2	Nonreturn valve (See 01-14-10 NONRETURN VALVE INSPECTION)
3	Fuel Filter (high-pressure) (See 01-14-14 FUEL FILTER (HIGH-PRESSURE) REMOVAL/INSTALLATION)
4	Fuel injector (See 01-14-17 FUEL INJECTOR REMOVAL/ INSTALLATION) (See 01-14-17 FUEL INJECTOR INSPECTION)
5	Pressure regulator (See 01-14-20 PRESSURE REGULATOR REMOVAL/INSTALLATION) (See 01-14-20 PRESSURE REGULATOR INSPECTION)

6	Pulsation damper No.1 (See 01-14-20 PULSATION DAMPER NO.1 REMOVAL/INSTALLATION) (See 01-14-20 PULSATION DAMPER NO.1, NO.2 INSPECTION)
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8	Fuel pump relay (See 09-21-5 RELAY INSPECTION)
9	Fuel pump (FP) (See 01-14-10 FUEL PUMP (FP) REMOVAL/ INSTALLATION) (See 01-14-11 FUEL PUMP (FP) DISASSEMBLY/ ASSEMBLY) (See 01-14-12 FUEL PUMP (FP) INSPECTION)

## BEFORE REPAIR PROCEDURE

A5U011401006W02

### 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".

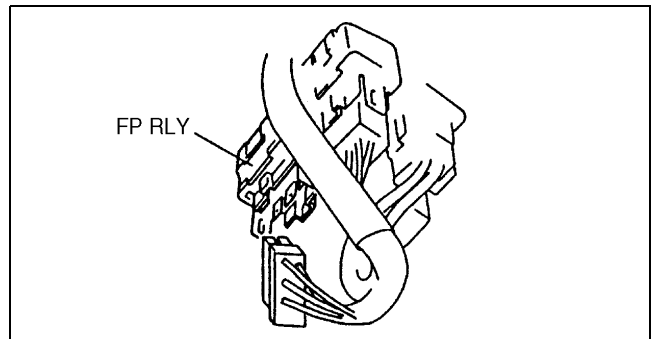
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## Fuel Line Safety Procedure

### Note

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

1. Remove the fuel-filler cap and release the pressure in the fuel tank.
2. Disconnect the fuel pump relay (FP RLY) connector (6-pin type connector: 4 terminal) located above the accelerator pedal (AP).
3. Start the engine.
4. After the engine stalls, crank the engine several times.
5. Turn the ignition switch to the LOCK position.
6. Connect the FP RLY connector.



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## AFTER REPAIR PROCEDURE

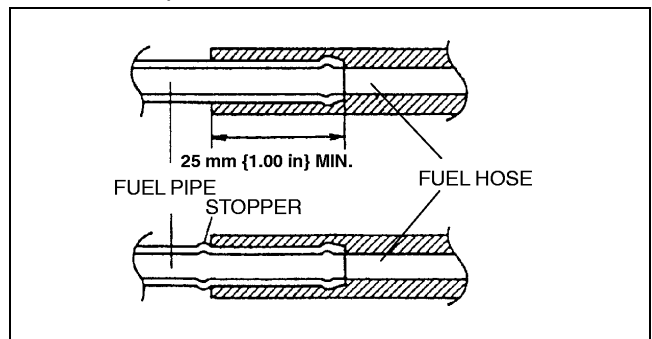
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### Warning

- 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 Hose Installation" and "Fuel Leakage Inspection" described below.

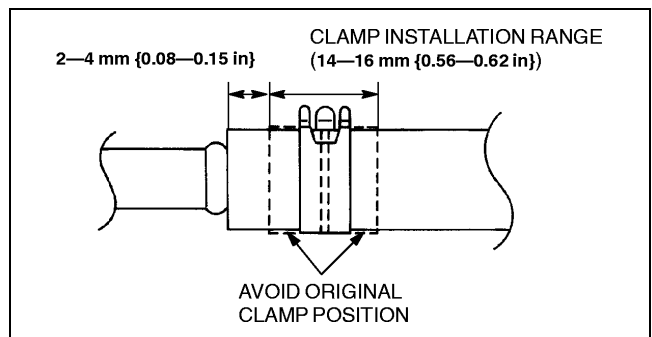
## Fuel Hose Installation

1. Replace damaged or deformed fuel hoses, fuel pipes, and hose clamps.
2. When installing the fuel hose onto the fuel pipe, fit the hose onto the pipe over **25 mm {1.00 in}**. When the pipe has a stopper, fit the hose until it contacts the stopper.



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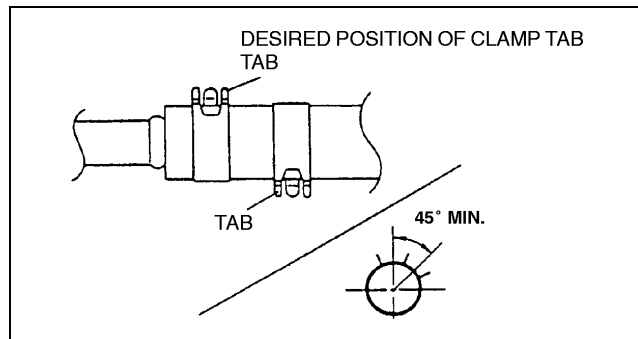
3. Install a hose clamp over the fuel hose within the clamp installation range as shown, avoiding the original clamp position.



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- When installing two clamps, their tabs must be positioned **more than 45° (desired 180°)** apart.



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### Fuel Leakage Inspection

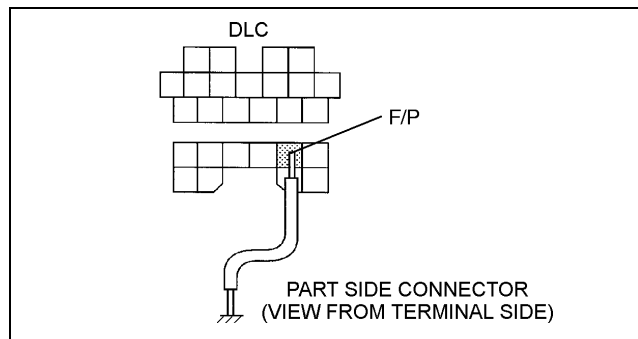
#### Warning

- 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 to the wrong DLC terminals may cause a malfunction. Carefully connect only to the specified terminals.

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



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### FUEL LINE PRESSURE INSPECTION

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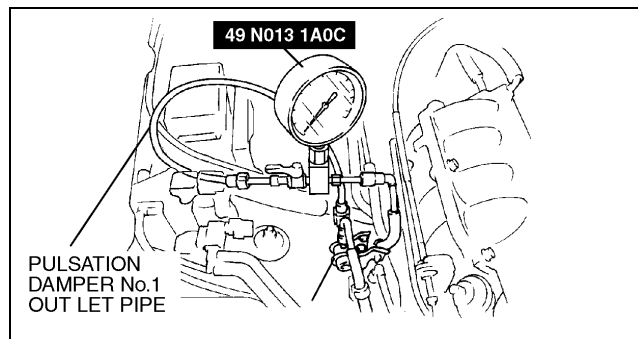
#### Warning

- 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.

- Complete the "BEFORE REPAIR PROCEDURE". (See 01-14-3 BEFORE REPAIR PROCEDURE.)
- Disconnect the negative battery cable.
- Disconnect the fuel pipe on the pulsation damper No.1 outlet side. Set the **SST** between the pulsation damper No.1 and the fuel distributor as shown in the figure. (See 01-14-17 FUEL INJECTOR REMOVAL/INSTALLATION.)

#### Note

- Verify that a click is heard when the **SST** is pushed into pulsation damper No.1.
- Pull the connector by hand and verify that it is installed securely. Visually inspect that the tabs of the retainer are securely fitted into the connector.
  - Connect the negative battery cable.
  - Verify that vehicles for AT is at N range, and for MT is at neutral position.



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7. Start the engine and idle it. Measure the fuel line pressure.

- If not as specified, inspect the following:

**Zero or low**

- FP circuit
- FP
- Main fuel line (clogged)
- Fuel leakage inside pressure regulator

**High**

- Pressure regulator for the cause of high pressure
- Return fuel line (clogged)

**Fuel line pressure**

**370—420 kPa {3.7—4.3 kgf/cm<sup>2</sup>, 53—61 psi}**

8. Observe the fuel pressure gauge indicator during heavy acceleration.

9. Verify that the fuel pressure fluctuation is within the specification during the test.

- If not as specified, inspect the following:

- PCM
- FP
- Fuel line for improper routing, kinks or leakage

**Fuel pressure fluctuation**

**370—420 kPa {3.7—4.3 kgf/cm<sup>2</sup>, 53—61 psi}**

10. Turn the ignition switch to the LOCK position.

11. Measure the fuel hold pressure **after 5 min.**

- If not as specified, inspect the following:

- FP hold pressure
- Fuel injector for leakage
- Fuel line for improper routing, kinks or leakage

**Fuel hold pressure**

**More than 250 kPa {2.55 kgf/cm<sup>2</sup>, 36.3 psi}**

12. Disconnect the **SST** and connect the fuel pipe to the pulsation damper No.1. (See 01-14-17 FUEL INJECTOR REMOVAL/INSTALLATION.)

13. Complete the "AFTER REPAIR PROCEDURE". (See 01-14-3 AFTER REPAIR PROCEDURE.)

## FUEL PRESSURE HOLD INSPECTION

A5U011401006W05

**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.**

1. Complete the "BEFORE REPAIR PROCEDURE". (See 01-14-3 BEFORE REPAIR PROCEDURE.)

2. Disconnect the negative battery cable.

3. Disconnect the fuel pipe on the pulsation damper No.1 outlet side. Set the **SST** between the pulsation damper No.1 and the fuel distributor as shown in the figure. (See 01-14-17 FUEL INJECTOR REMOVAL/INSTALLATION.)

**Note**

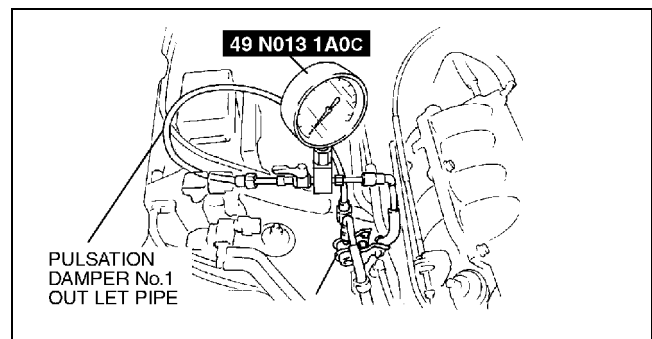
- Verify that a click is heard when the **SST** is pushed into pulsation damper No.1.

4. Pull the connector by hand and verify that it is installed securely. Visually inspect that the tabs of the retainer are securely fitted into the connector.

5. Connect the negative battery cable.

6. Verify that vehicles for AT is at N range and for MT is at neutral position, then start the engine.

7. Observe the fuel pressure gauge indicator during heavy acceleration.



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## FUEL SYSTEM

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8. Verify that the fuel pressure holds steady within specification during the test.

### Fuel hold pressure

370—420 kPa {3.7—4.3 kgf/cm<sup>2</sup>, 53—61 psi}

9. Disconnect the **SST** and connect the fuel pipe to the pulsation damper No.1. (See 01-14-17 FUEL INJECTOR REMOVAL/INSTALLATION.)
  - If not as specified, inspect fuel hold pressure. (See 01-14-5 FUEL PRESSURE HOLD INSPECTION.)

## FUEL TANK REMOVAL/INSTALLATION

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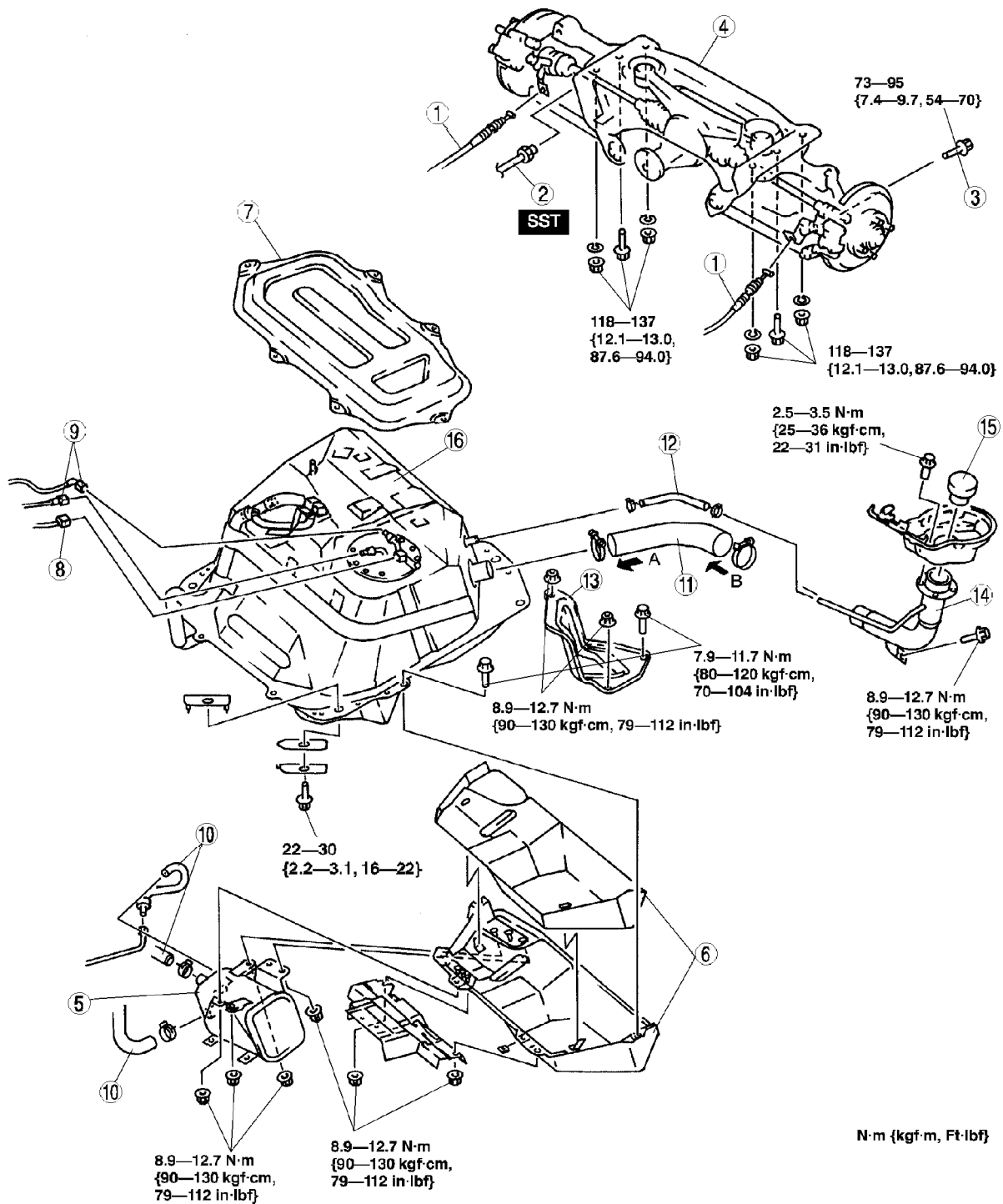
### Warning

- **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.**

1. Complete the "BEFORE REPAIR PROCEDURE". (See 01-14-3 BEFORE REPAIR PROCEDURE.)
2. Disconnect the negative battery cable.
3. Siphon the fuel from the fuel tank. (See 01-14-8 Fuel Drawing Note.)
4. Remove the middle pipe. (See 01-15-1 EXHAUST SYSTEM REMOVAL/INSTALLATION.)
5. Remove the propeller shaft. (See 03-15-2 PROPELLER SHAFT REMOVAL/INSTALLATION.)
6. Remove the power plant frame. (See 05-11A-4 MANUAL TRANSMISSION REMOVAL/INSTALLATION [M15M-D].) (See 05-13-25 AUTOMATIC TRANSMISSION REMOVAL/INSTALLATION.)
7. Remove in the order indicated in the table.
8. Install in the reverse order of removal.
9. Complete the "AFTER REPAIR PROCEDURE". (See 01-14-3 AFTER REPAIR PROCEDURE.)

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1	Parking brake cable (See 04-12-2 PARKING BRAKE CABLE REMOVAL/INSTALLATION)
2	Brake pipe (See 04-11-3 AIR BLEEDING)
3	Shock absorber bolt
4	Rear crossmember component (See 01-14-8 Rear Crossmember Component Removal Note)
5	Charcoal canister
6	Fuel tank insulator

7	Service hole cover
8	Connector
9	Plastic fuel hose (See 01-14-8 Plastic Fuel Hose Disassembly Note) (See 01-14-9 Plastic Fuel Hose Assembly Note)
10	Evaporative hose (See 01-14-9 Breather Hose, Evaporative Hose Installation Note)
11	Joint hose (See 01-14-9 Joint Hose Installation Note)

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12	Breather hose (See 01-14-9 Breather Hose, Evaporative Hose Installation Note)
13	Dust cover

14	Fuel-filler pipe
15	Fuel-filler cap
16	Fuel tank

### Fuel Drawing Note

1. Remove the fuel-filler cap and insert a hose into the fuel tank through the fuel-filler pipe.
2. Siphon the fuel into a container using a fuel drawing pump.

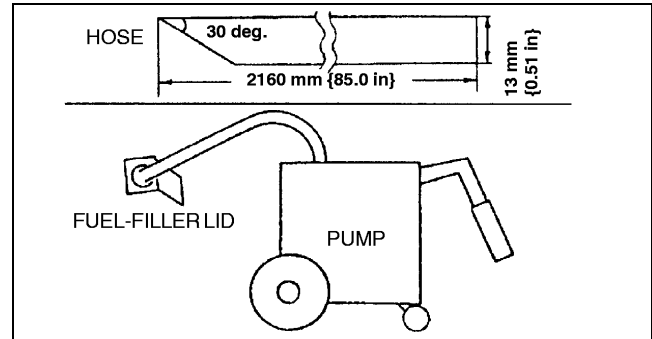
#### Note

- For ease of work, prepare a hose of following size.

#### Specification

Outer diameter: 13 mm {0.51 in}

Length: 2160 mm {85.0 in} or longer



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### Rear Crossmember Component Removal Note

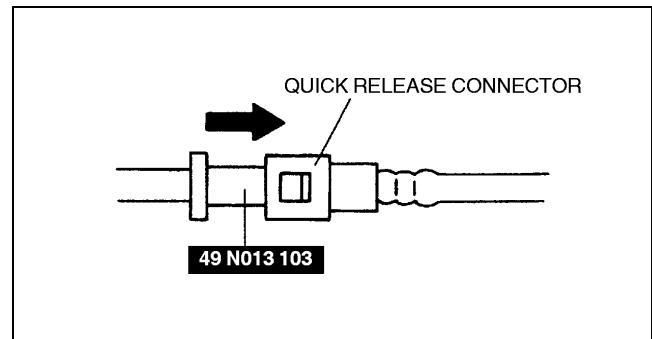
1. Support the rear crossmember component using a transmission jack.
2. Remove the rear crossmember mounting bolts and nuts.
3. Lower the rear crossmember component.

### Plastic Fuel Hose Disassembly Note

#### Caution

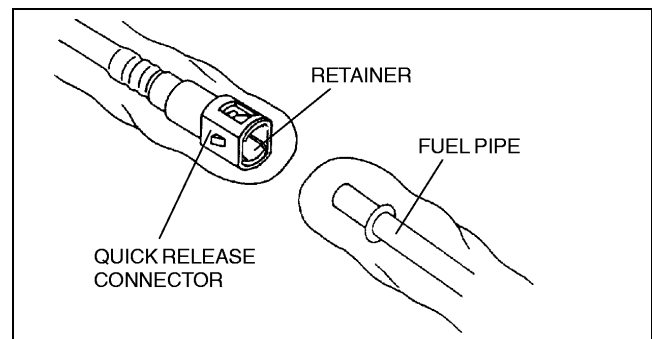
- The retainer must be replaced if removed from the fuel pipe without using the SST. Otherwise, effectiveness of the retainer will be reduced.

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



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



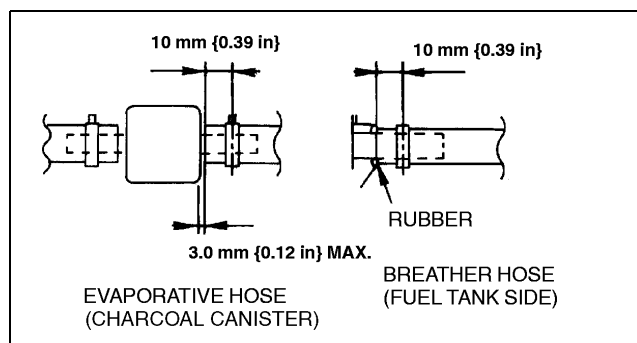
X5U114WC6



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### Breather Hose, Evaporative Hose Installation Note

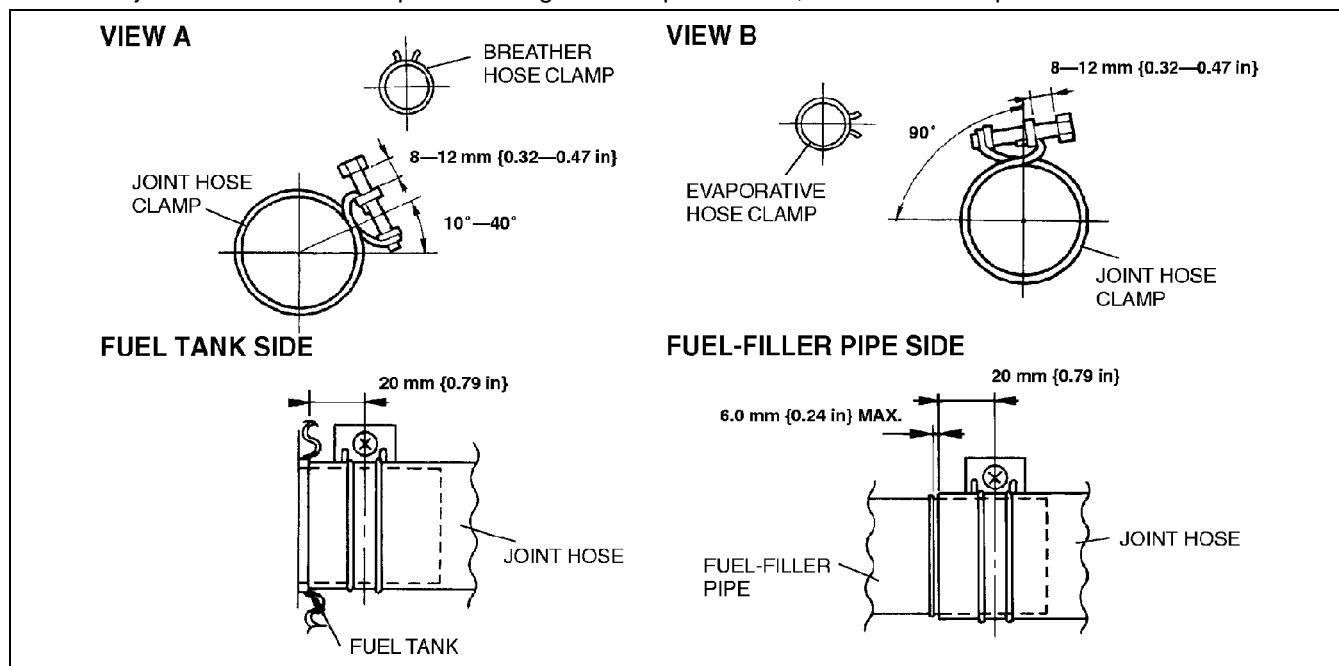
1. Fit each hose onto the respective fittings within specification, and install clamps as shown.



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### Joint Hose Installation Note

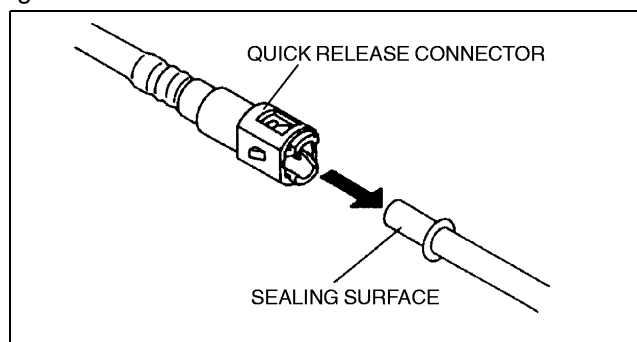
1. Fit the joint hose onto the respective fittings within specification, and install clamps as shown.



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### Plastic Fuel Hose Assembly Note

1. Verify that the inside of the fuel pipe and the quick release connector is free of foreign material and damage.
2. Clean if necessary, taking care not to damage the sealing surfaces.
3. Push the quick release connector into the fuel pipe until a click is heard.
4. Pull the quick release connector by hand and verify that it is installed securely.



X5U114WC7

## FUEL SYSTEM

### NONRETURN VALVE INSPECTION

A5U011442270W01

1. Siphon the fuel from the fuel tank. (See 01-14-8 Fuel Drawing Note.)
2. Remove the FP (See 01-14-10 FUEL PUMP (FP) REMOVAL/INSTALLATION.)

#### Note

- Nonreturn valve is integrated in the fuel tank.
- The nonreturn valve is normally closed by the spring force.

3. Verify that the nonreturn valve is closed.
  - If the nonreturn valve is stuck open and does not open even when pulled up by a finger, replace the fuel tank.

### FUEL PUMP (FP) REMOVAL/INSTALLATION

A5U011413350W01

#### 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 FP unit when removing or installing.

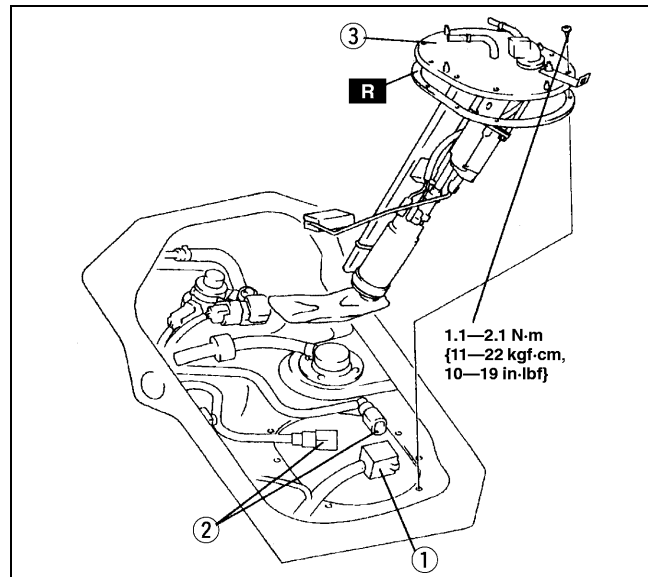
#### Caution

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

1. Complete the "BEFORE REPAIR PROCEDURE". (See 01-14-3 BEFORE REPAIR PROCEDURE.)
2. Disconnect the negative battery cable.
3. Uncover the rear package trim.
4. Remove the service hole cover.
5. Remove in the order indicated in the table.

1	Connector
2	Plastic fuel hose (See 01-14-8 Plastic Fuel Hose Disassembly Note) (See 01-14-9 Plastic Fuel Hose Assembly Note)
3	FP

6. Install in the reverse order of removal.
7. Complete the "AFTER REPAIR PROCEDURE".  
(See 01-14-3 AFTER REPAIR PROCEDURE.)



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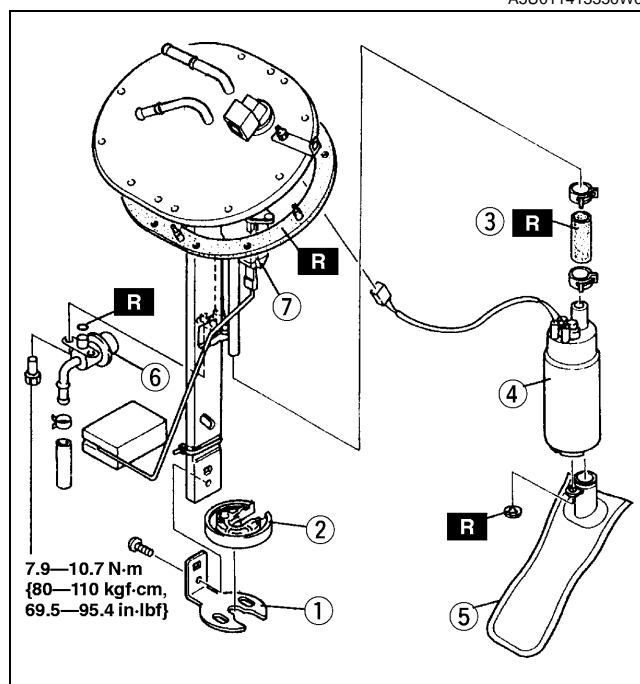
# FUEL SYSTEM

## FUEL PUMP (FP) DISASSEMBLY/ASSEMBLY

1. Disassemble in the order indicated in the table.

1	Bracket
2	Rubber mount
3	Fuel hose (See 01-14-11 Fuel Hose Assembly Note)
4	FP (See 01-14-11 FP Assembly Note)
5	Fuel filter (low-pressure)
6	Pressure regulator
7	Fuel gauge sender unit

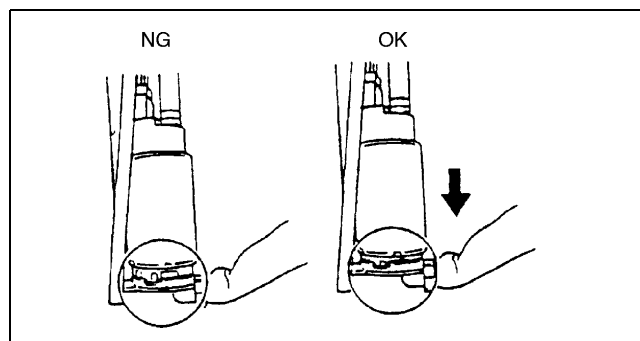
2. Assemble in the reverse order of disassembly.



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### FP Assembly Note

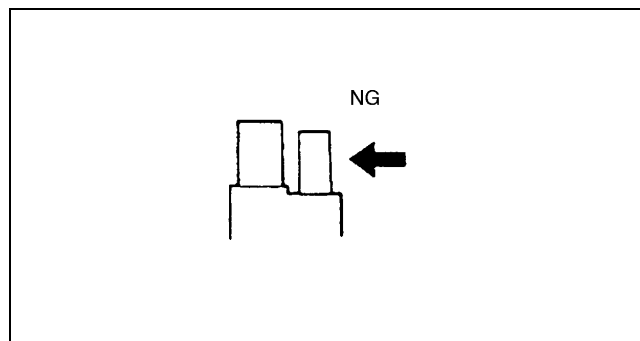
- After installing the FP to the bracket, pull the pump down so that it is flush against the bracket and there is no gap.



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### Fuel Hose Assembly Note

- Do not apply excessive side force when pushing the fuel hose onto the FP nipple.

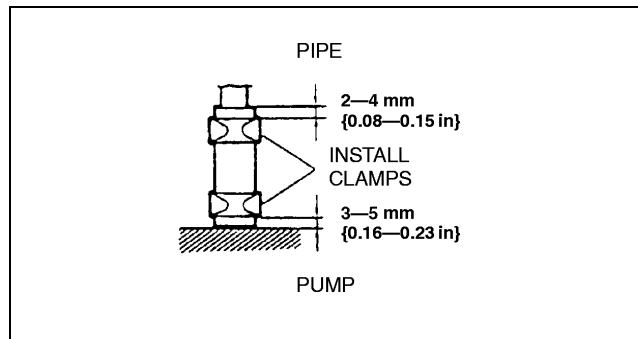


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2. Install the clamps as shown.



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### FUEL PUMP (FP) INSPECTION

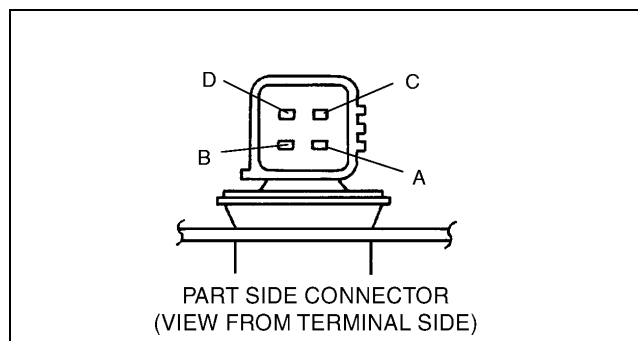
#### Continuity Inspection

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##### Note

- Perform the following test only when directed.

1. Disconnect the negative battery cable.
2. Remove the service hole cover.
3. Disconnect the FP connector.
4. Inspect for continuity between FP connector terminals B and D.
  - If there is no continuity, replace the FP body.
  - If as specified, carry out the "Circuit Open/Short Inspection".



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#### Circuit Open/Short Inspection

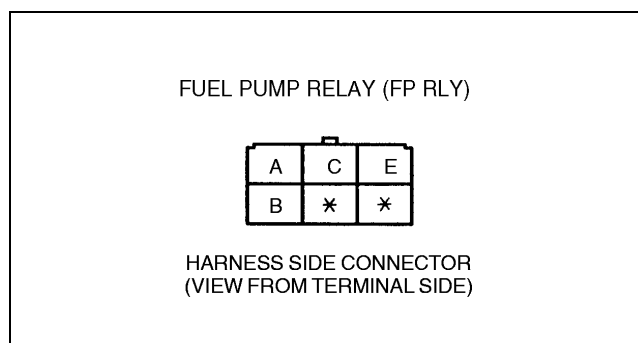
1. Inspect the following wiring harness for open or short. (Continuity check).

##### Open circuit

- If there is no continuity, the circuit is open. Repair or replace the harness.
  - GND circuit (FP connector terminal D and body GND)
  - Power circuit (fuel pump relay (FP RLY) connector terminal C and FP connector terminal B through common connector)

##### Short circuit

- If there is no continuity, the circuit is shorted. Repair or replace the harness.
  - FP RLY connector terminal C and FP connector terminal B through common connector to GND



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#### Fuel Pump (FP) 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 cause damage to the fuel pipe and quick release connector. Always clean the quick release connector joint area before disconnecting/connecting using a cloth or soft brush, and make sure that it is free of foreign material.

## Note

- Perform the following test only when directed.

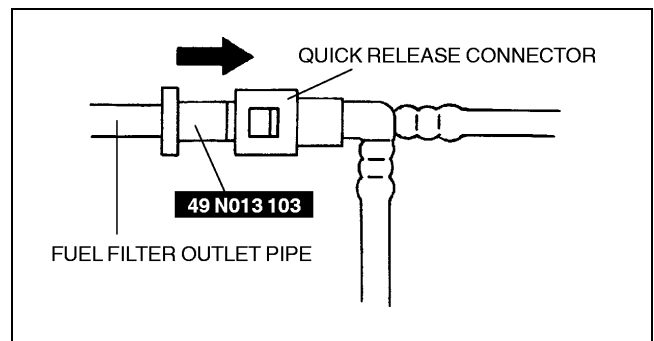
1. Complete the "BEFORE REPAIR PROCEDURE". (See 01-14-3 BEFORE REPAIR PROCEDURE.)
2. Disconnect the negative battery cable.
3. Lift up the vehicle with safety stands.
4. Remove the fuel filter cover.
5. Inspect that the quick release connector joint area is free of foreign materials.
6. Clean if necessary.
7. Set the **SST** to the fuel filter outlet pipe and push into the quick release connector, and disconnect the fuel pipe.
  - If removal of the retainer is required, remove it by squeezing the tabs of the retainer.

## Caution

- Removing the retainer from the disconnected fuel pipe will reduce the effectiveness of the retainer. The retainer must be replaced when any of the following applies.

1. Scratches or damage is observed on the retainer.
2. Fuel pipe has been replaced.
3. Fuel filter (high-pressure) has been replaced.

8. Cover the disconnected quick release connector to prevent them from being scratched or contaminated with foreign material.
9. Turn the lever as shown to plug the **SST** outlet.
10. Push the **SST** into the fuel filter outlet pipe until a click is heard.
11. Connect a fuel hose and clamp to the **SST** outlet pipe.

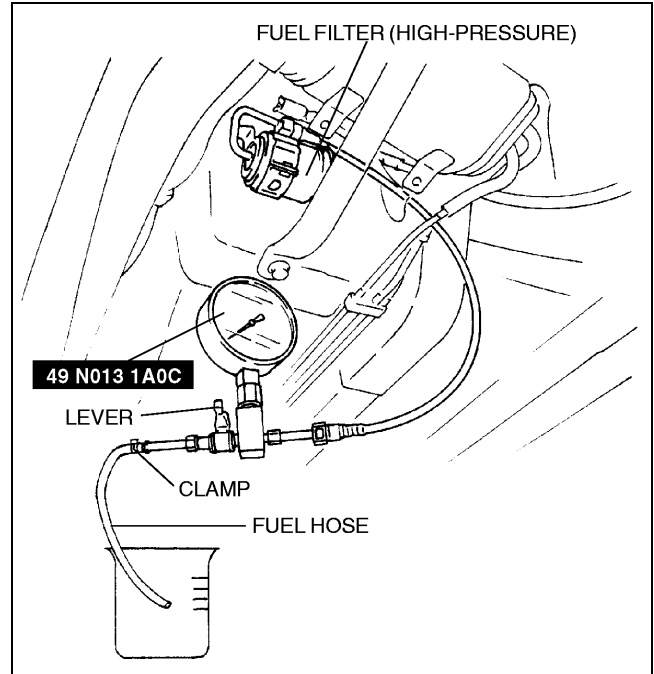


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12. Set the fuel hose into a container to avoid fuel spills.
13. Pull the quick release connector by hand and verify that it is installed securely.
14. Connect the negative battery cable.

## Caution

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



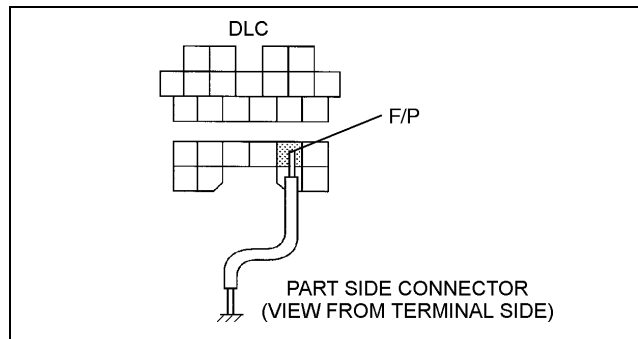
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15. Short the DLC terminals F/P and body GND using a jumper wire.
16. Turn the ignition switch to ON to operate the FP.
17. Measure the FP maximum pressure.
  - If not as specified, inspect the following:
    - FP
    - FP RLY
    - Fuel filter for clogging
    - Fuel line for clogging or leakage

### FP maximum pressure

**Less than 637 kPa {6.5 kgf/cm<sup>2</sup>, 92 psi}**



Y3U114WAG

18. Turn the ignition switch to ON for **10 s** to operate the FP.
19. Turn the ignition switch to the LOCK position.
20. Measure the FP hold pressure **after 5 min.**
  - If not as specified, replace the FP.

### FP hold pressure

**More than 343 kPa {3.5 kgf/cm<sup>2</sup>, 50 psi}**

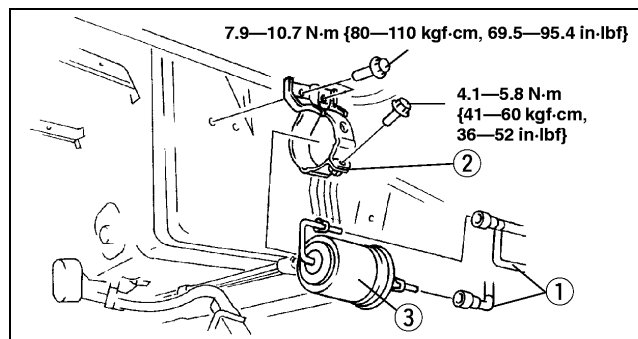
21. Disconnect the jumper wire.
22. Disconnect the **SST**.
23. Inspect the fuel pipe for kinks.
24. Replace the fuel pipe if necessary.
25. Inspect that the inside of the fuel filter outlet pipe and the quick release connector is free of foreign materials and damage.
26. Clean if necessary, taking care not to damage the sealing surfaces.
27. Push the fuel pipe into the fuel filter outlet pipe until a click is heard.
28. Pull the quick release connector by hand and verify that it is installed securely.
29. Complete the "AFTER REPAIR PROCEDURE". (See 01-14-3 AFTER REPAIR PROCEDURE.)

## FUEL FILTER (HIGH-PRESSURE) REMOVAL/INSTALLATION

A5U011434801W01

1. Complete the "BEFORE REPAIR PROCEDURE". (See 01-14-3 BEFORE REPAIR PROCEDURE.)
2. Disconnect the negative battery cable.
3. Raise the rear of the vehicle and support it with safety stands.
4. Remove the fuel filter protector.
5. Remove in the order indicated in the table.

1	Plastic fuel hose (See 01-14-14 Plastic Fuel Hose Disassembly Note) (See 01-14-16 Plastic Fuel Hose Assembly Note)
2	Fuel filter bracket
3	Fuel filter (high-pressure) (See 01-14-15 Fuel Filter (High-pressure) Removal Note) (See 01-14-16 Fuel Filter (High-pressure) Installation Note)



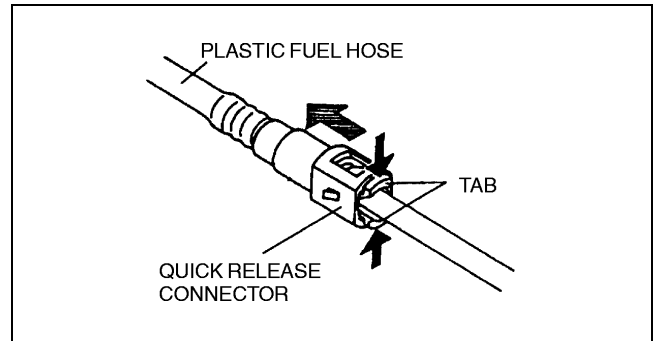
X5U114WAJ

6. Install in the reverse order of removal.
7. Complete the "AFTER REPAIR PROCEDURE". (See 01-14-3 AFTER REPAIR PROCEDURE.)

### Plastic Fuel Hose Disassembly Note

1. Inspect that the quick release connector joint area is free of foreign material.
2. Clean if necessary.

3. Squeeze the tabs of the retainer and disconnect the quick release connector.

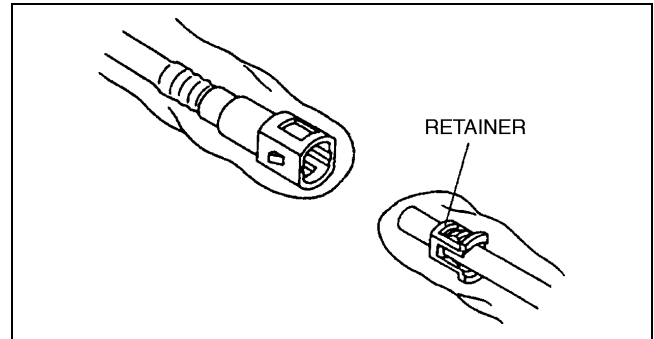


X5U114WCG

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

### Caution

- Removing the retainer from the disconnected fuel pipe will reduce the effectiveness of the retainer. The retainer must be replaced when any of the following applies.
  1. Retainer has been removed.
  2. Scratches or damage is observed on the retainer.
  3. Plastic fuel hose has been replaced.
  4. Fuel filter (high-pressure) has been replaced.



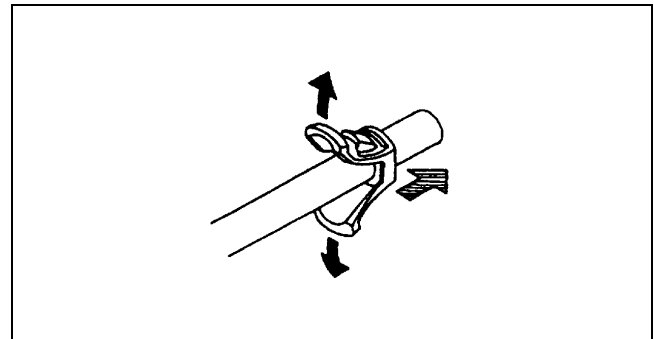
X5U114WC8

- If removal of the retainer is required, remove it in the following procedure.

### Caution

- Removing the retainer using a tool can damage the fuel pipe and cause fuel leakage. Remove the retainer by opening the tabs outward by hand.

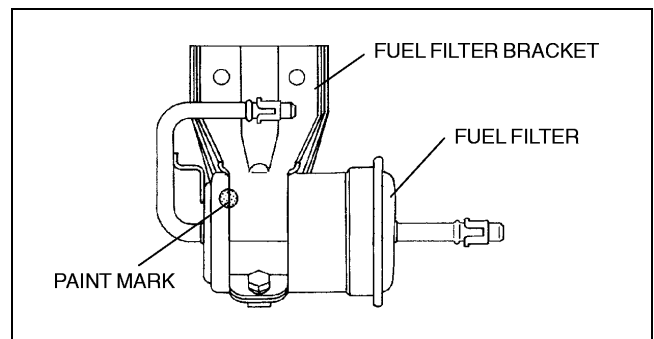
- (1) Open the tabs of the retainer outward.
- (2) Remove and discard the retainer.



X5U114WC9

### Fuel Filter (High-pressure) Removal Note

1. Before removing the fuel filter, paint mark the fuel filter and fuel filter bracket for correct reassembly.



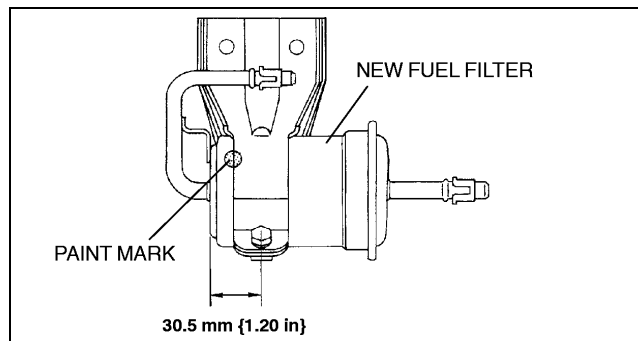
X5U114WC2

## FUEL SYSTEM

### Fuel Filter (High-pressure) Installation Note

#### Replacing the fuel filter:

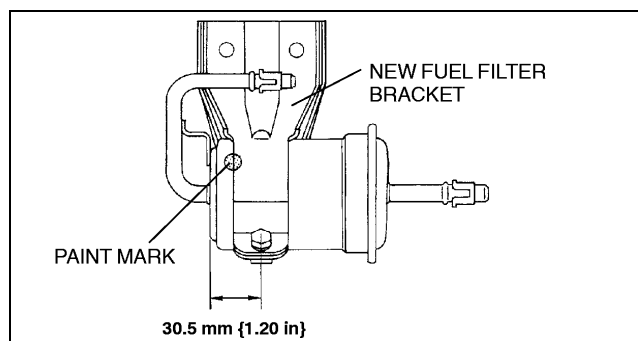
1. Paint mark the new fuel filter on the same spot as the removed fuel filter.
2. Align the paint marks and install the fuel filter.



X5U114WC3

#### Replacing the fuel filter bracket:

1. Paint mark the new fuel filter bracket on the same spot as the removed fuel filter bracket.
2. Align the paint marks and install the fuel filter bracket.



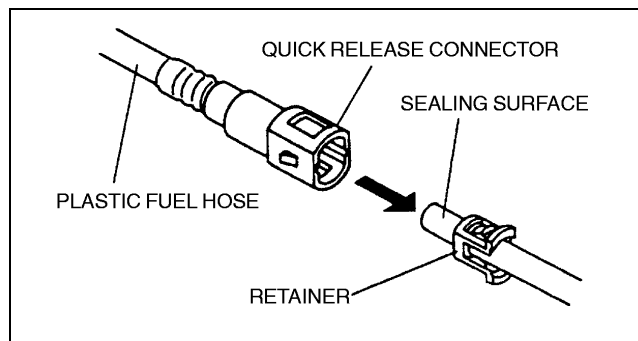
X5U114WC4

### Plastic Fuel Hose Assembly Note

1. When the retainer is not removed, observe the following procedure.
  - (1) Inspect the plastic fuel hose for kinks.
  - (2) Replace if necessary.
  - (3) Verify that the inside of the fuel pipe and the quick release connector is free of foreign material and damage.
  - (4) Clean if necessary, taking care not to damage the sealing surfaces.
  - (5) Align the fuel pipe and quick release connector so that the tabs of the retainer are correctly fitted into the quick release connector.
  - (6) Push the quick release connector into the retainer until a click is heard.
  - (7) Pull the quick release connector by hand and verify that it is installed securely.
  - (8) Visually inspect that the tabs of the retainer are securely fitted into the quick release connector.
2. When the retainer is removed, observe the following procedure.

#### Note

- Use the designated genuine retainer only.



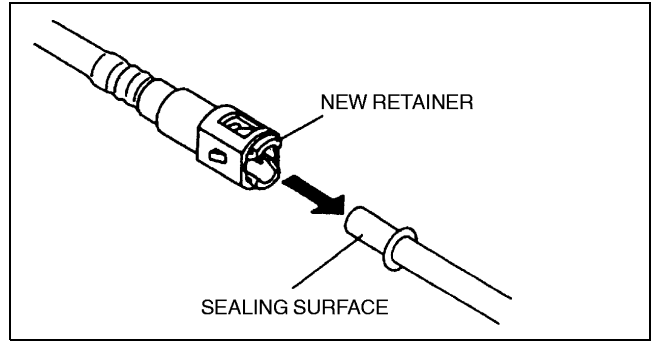
X5U114WCA

- (1) Install a new retainer onto the quick release connector.
- (2) Visually inspect that the tabs of the retainer are securely fitted into the quick release connector.
- (3) Verify that the inside of the fuel pipe and the quick release connector is free of foreign material and damage.
- (4) Clean if necessary, taking care not to damage the sealing surfaces.



## FUEL SYSTEM

- (5) Push the quick release connector into the fuel pipe until a click is heard.
- (6) Pull the quick release connector by hand and verify that it is installed securely.



X5U114WCB

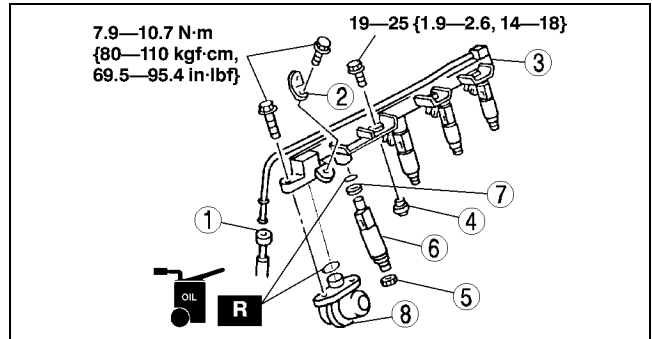
01-14

### FUEL INJECTOR REMOVAL/INSTALLATION

A5U011413250W01

1. Complete the "BEFORE REPAIR PROCEDURE". (See 01-14-3 BEFORE REPAIR PROCEDURE.)
2. Disconnect the negative battery cable.
3. Remove the dynamic chamber. (See 01-13-3 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION.)
4. Remove in the order indicated in the table.

1	Plastic fuel hose (See 01-14-8 Plastic Fuel Hose Disassembly Note) (See 01-14-9 Plastic Fuel Hose Assembly Note)
2	Fuel distributor bracket
3	Fuel distributor
4	Fuel distributor insulator
5	Fuel injector insulator
6	Fuel injector (See 01-14-17 Fuel Injector Installation Note)
7	Grommet
8	Pulsation damper No.2

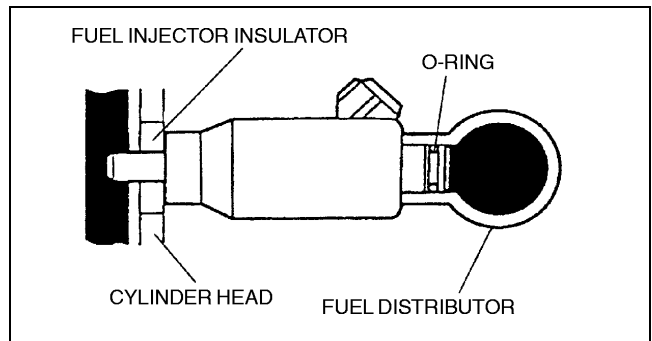


Z5U114W106

5. Install in the reverse order of removal.
6. Complete the "AFTER REPAIR PROCEDURE". (See 01-14-3 AFTER REPAIR PROCEDURE.)

### Fuel Injector Installation Note

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



X5U114WB0

### FUEL INJECTOR INSPECTION

A5U011413250W02

#### On-vehicle Inspection

1. Warm up the engine and idle it.
2. Listen for operation sound of each fuel injector with a screwdriver or a soundscope.
  - If no sound is heard, carry out the "Fuel Injector Resistance Inspection".

#### Note

- The best way to judge the performance of a fuel injector is to compare its sound with the sound of other fuel injectors.

# FUEL SYSTEM

## Resistance Inspection

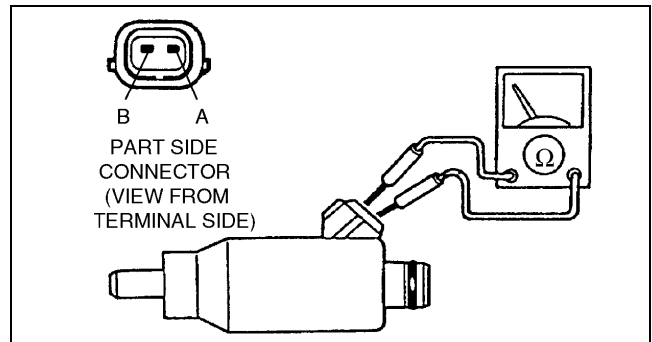
### Note

- Perform the following test only when directed.

1. Disconnect the fuel injector connectors.
2. Measure the resistance of the fuel injector using an ohmmeter.
  - If as specified but On-vehicle Inspection is failed, carry out the "Circuit Open/Short Inspection".
  - If not as specified, replace the fuel injector.

### Resistance

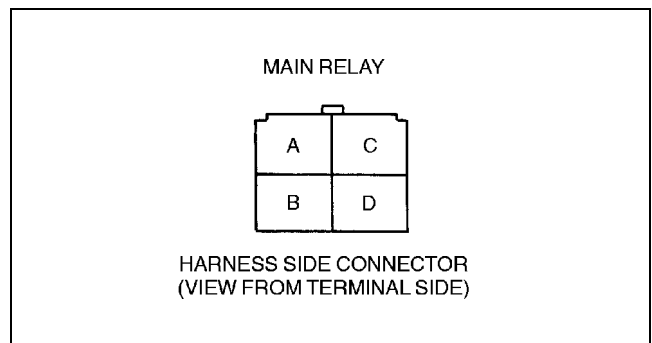
12—13 ohms [20°C {68°F}]



## Circuit Open/Short Inspection

### Open circuit

- GND circuit (No.1 cylinder fuel injector connector terminal B and PCM connector terminal 2A)
- GND circuit (No.2 cylinder fuel injector connector terminal B and PCM connector terminal 2D)
- GND circuit (No.3 cylinder fuel injector connector terminal B and PCM connector terminal 2G)
- GND circuit (No.4 cylinder fuel injector connector terminal B and PCM connector terminal 2J)
- 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 2A to GND
- No.2 cylinder fuel injector connector terminal B and PCM connector terminal 2D to GND
- No.3 cylinder fuel injector connector terminal B and PCM connector terminal 2G to GND
- No.4 cylinder fuel injector connector terminal B and PCM connector terminal 2J to GND

## Fuel Leakage and 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.

1. Complete the "BEFORE REPAIR PROCEDURE". (See 01-14-3 BEFORE REPAIR PROCEDURE.)
2. Disconnect the negative battery cable.
3. Remove the dynamic chamber. (See 01-13-3 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION.)
4. Remove the fuel injectors together with the fuel distributor. (See 01-14-17 FUEL INJECTOR REMOVAL/INSTALLATION.)

## FUEL SYSTEM

5. Fasten the fuel injectors firmly to the fuel distributor with wire and connect the fuel pipe connector.
6. Connect the negative battery cable.

### Caution

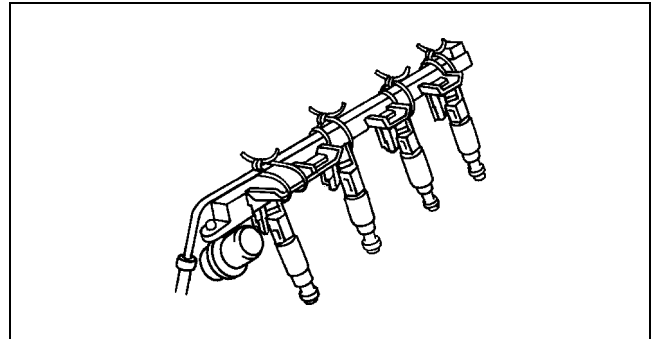
- **Connecting to the wrong DLC terminals may cause a malfunction. Carefully connect only to the specified terminals.**

7. Connect DLC terminals F/P and body GND using a jumper wire.
8. Turn the ignition switch to ON to operate the FP.
9. Tilt the fuel injectors **approx. 60 degrees** and verify that fuel leaks from the fuel injector nozzles is within specification.
  - If not as specified, replace the fuel injector.

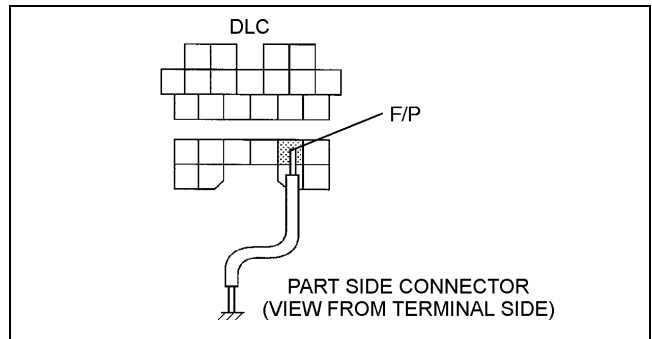
### Fuel leakage

**Less than 1 drop/2 min**

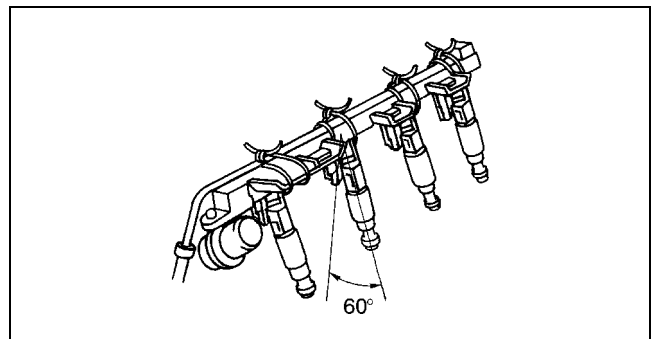
10. Turn the ignition switch to the LOCK position.



Z5U114W107



Y3U114WAG



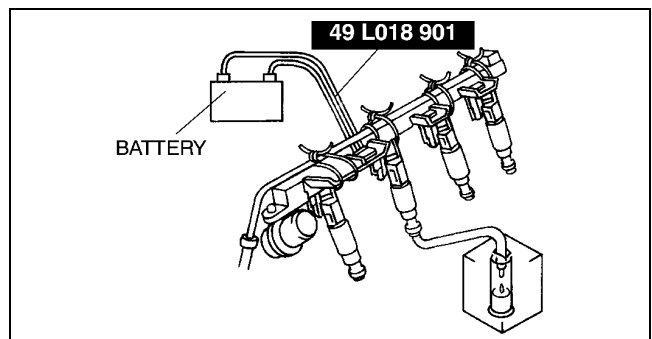
Z5U114W108

11. Connect the **SST** as shown in the figure.
12. Turn the ignition switch to ON to operate the FP.
13. Measure the injection volume of each fuel injector using a graduated container.
  - If not as specified, replace the fuel injector.

### Injection volume

**66—82 ml {66—82 cc, 2.3—2.7 fl oz}/15 s.**

14. Turn the ignition switch to the LOCK position and disconnect the jumper wire.
15. Install the dynamic chamber. (See 01-13-3 INTAKE-AIR SYSTEM REMOVAL/INSTALLATION.)
16. Complete the "AFTER REPAIR PROCEDURE". (See 01-14-3 AFTER REPAIR PROCEDURE.)



Z5U114W109

### Using a fuel injector tester

1. Remove the fuel injectors. (See 01-14-17 FUEL INJECTOR REMOVAL/INSTALLATION.)
2. Connect the fuel injector to a fuel injector.
3. Measure the injection volume of each fuel injector.
  - If not as specified, replace the fuel injector.

### Injection volume

**66—82 ml {66—82 cc, 2.3—2.7 fl oz}/15 s.**

4. Complete the "AFTER REPAIR PROCEDURE". (See 01-14-3 AFTER REPAIR PROCEDURE.)

# FUEL SYSTEM

## PRESSURE REGULATOR REMOVAL/INSTALLATION

A5U011413280W01

1. Remove and install the pressure regulator.(See01–14–11 FUEL PUMP (FP) DISASSEMBLY/ASSEMBLY.)

## PRESSURE REGULATOR INSPECTION

A5U011413280W02

### Note

- Due to the adoption of the mechanical returnless fuel system, the pressure regulator cannot be inspected separately.

1. Perform “FUEL LINE PRESSURE INSPECTION“.

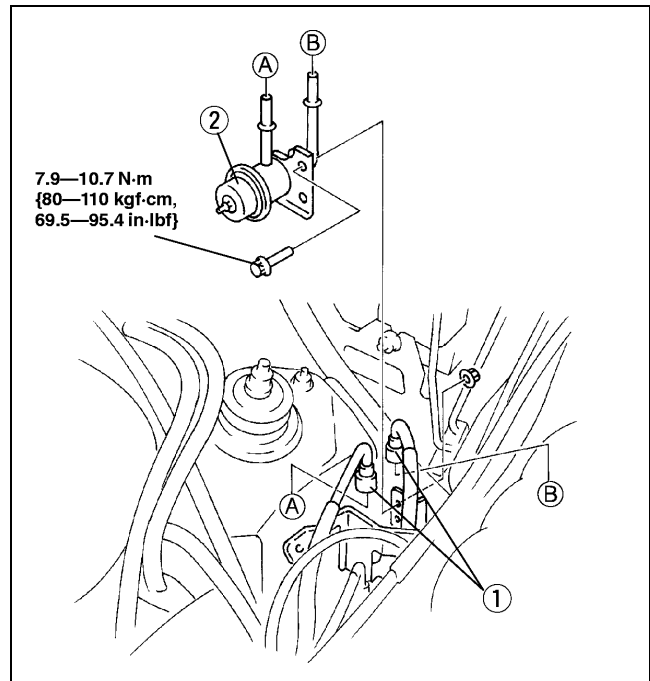
## PULSATION DAMPER NO.1 REMOVAL/INSTALLATION

A5U011420180W01

1. Complete the “BEFORE REPAIR PROCEDURE”. (See 01–14–3 BEFORE REPAIR PROCEDURE.)
2. Disconnect the negative battery cable.
3. Remove in the order indicated in the table.

1	Plastic fuel hose (See 01–14–8 Plastic Fuel Hose Disassembly Note) (See 01–14–9 Plastic Fuel Hose Assembly Note)
2	Pulsation damper No.1

4. Install in the reverse order of removal.
5. Complete the “AFTER REPAIR PROCEDURE”.  
(See 01–14–3 AFTER REPAIR PROCEDURE.)



X5U114WAT

## PULSATION DAMPER NO.2 REMOVAL/INSTALLATION

A5U011420180W02

1. Remove and install the pulsation damper No.2.  
(See 01–14–17 FUEL INJECTOR REMOVAL/INSTALLATION.)

## PULSATION DAMPER NO.1, NO.2 INSPECTION

A5U011420180W03

1. Visually inspect pulsation damper No.1 and No.2 for damage and cracks. Also verify that there is no extreme rust which will cause fuel leakage.
  - If either is observed, replace the faulty pulsation damper.