

# 2004–2008 RX-8 – REPAIR PROCEDURE – RECALL 1017E - Updated

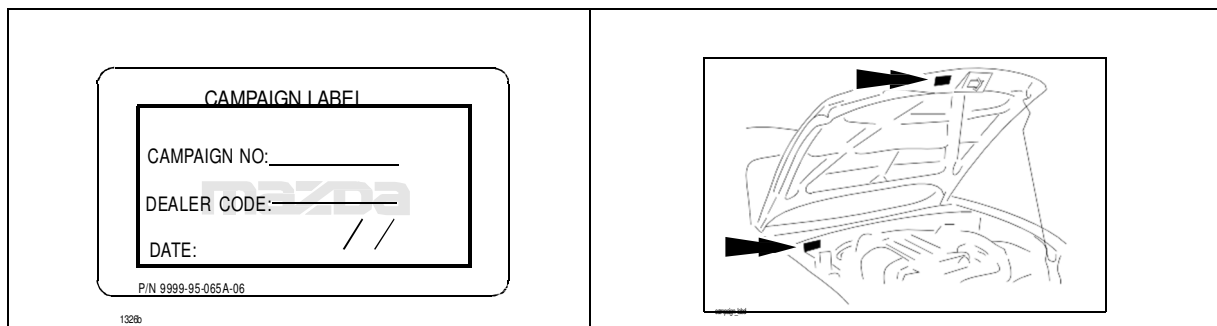
## A. VEHICLE INSPECTION PROCEDURE

1. Verify that the vehicle is within the following range:

Model Year	VIN Range	Build Date Range
2004-2008	JM1 FE**** 40 100053 – 140891	From April 10, 2003 through February 18, 2008
	JM1 FE**** 50 140892 – 161178	
	JM1 FE**** 60 200013 – 207471	
	JM1 FE**** 70 207473 – 214011	
	JM1 FE**** 80 214012 – 216619	

- If the vehicle is within the above range, proceed to Step 2.
  - If the vehicle is not within the above range, return vehicle to the customer or inventory.
2. Perform a Warranty Vehicle Inquiry using your eMDCS System and inspect vehicle for Campaign Labels **Recall 0516J and 1017E** attached to the vehicle's hood or bulkhead. Refer to eMDCS System - Warranty Vehicle Inquiry Results table below.

**NOTE:** Be sure to verify Recall number as the vehicle may have multiple Recall labels.



### eMDCS System - Warranty Vehicle Inquiry Results:

If eMDCS displays:	Campaign Label is:	Action to perform:
RECALL 1017E OPEN and RECALL 0516J is not present	Present	Contact the Warranty Hotline at (877) 727-6626 option 3 to update vehicle history.
	Not present	Proceed to "FUEL PUMP REPLACEMENT PROCEDURE".
RECALL 0516J CLOSED and RECALL 1017E OPEN	Both labels are Present	Contact the Warranty Hotline at (877) 727-6626 option 3 to update vehicle history.
	Not present	Proceed to "FUEL PUMP REPLACEMENT PROCEDURE PAYING ATTENTION TO THE NOTES REGARDING 0516J IN THE REPAIR PROCEDURE"
RECALL 0516J is not displayed	Does not apply	Recall does not apply to this vehicle. Return vehicle to inventory or customer.

## B. REPAIR PROCEDURE

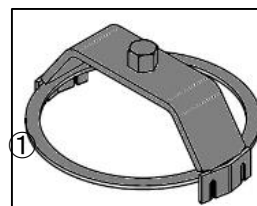
### “Fuel pump Ring recall campaign” and “Fuel Pump Discharge Pipe Crack” - Combined

#### TOOL INFORMATION

##### Special Tool

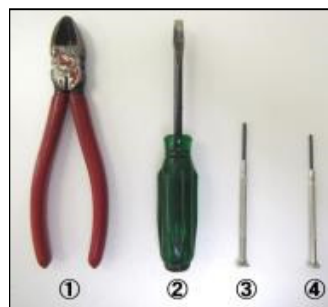
No.	Special tool Name	Qty.
①	Fuel Pump Ring Wrench	1

This tool is used at Recall Campaign: Fuel Leak at Fuel Pump Rings




##### Required tools

No.	Tool Name	Note
①	Diagonal cutting pliers	—
②	Flathead screwdriver	—
③	Small flathead screwdriver (A)	2.3 mm
④	Small flathead screwdriver (B)	2.0 mm



Parts Information 1017E is open and recall 0516J is not displayed in eMDCS

No.	Part Name	Part Number	Component	Remark
①	Fuel pump ring kit (union nut)	F1Y1-42-A1X	Fuel pump ring 2pcs Retainer 2pcs Fuel Pump Ring Gasket 2pcs Heat Insulation Pad 2pcs	
②	Fuel pump filter body kit	N3Y1-13ZE0C	Fuel filter body 1pc Gasket 2pcs	

Parts Information – Recall 0516J is closed and 1017E is open

No.	Part Name	Part Number	Component
①	Fuel pump filter body kit	N3Y1-13ZE0C	Fuel filter body 1pc Gasket 2pcs
②	Fuel pump ring gasket	BN8F-42166	1pcs (Need main side only)

## PROCEDURE

1. Perform the fuel line safety procedure.

### WARNING

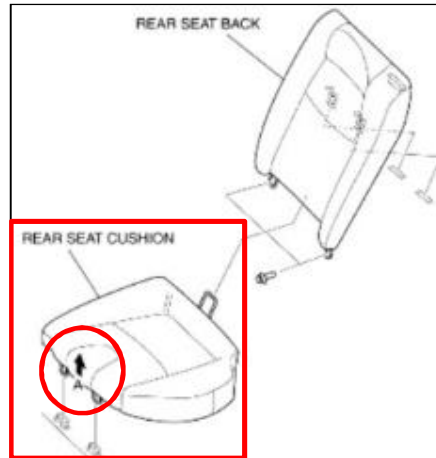
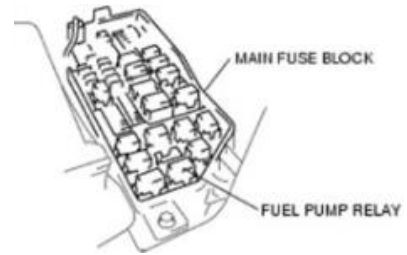
- Fuel is extremely flammable. Always keep sparks and flame away from fuel. Ignition may cause death or serious injury, or damage to equipment.
- Fuel line spills and leakage from the pressurized fuel system are dangerous. Fuel can ignite and cause serious injury or death and damage. Fuel can also irritate skin and eyes. To prevent this, always complete the "Fuel Line Safety Procedure".
- A person charged with static electricity could cause a fire or explosion, resulting in death or serious injury. Before performing work on the fuel system, discharge static electricity by touching the vehicle body.

### CAUTION

If there is foreign material on the connecting area of the quick release connector, it might damage the connector or fuel pipe. To prevent this, when the quick release connector has been disconnected, clean the connecting area before reconnecting it.

### Fuel Line Safety Procedure

- 1) Remove the fuel-filler cap to release the pressure inside 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 to the LOCK position.
  - 6) Install the fuel pump relay.
2. Remove the rear seat cushion. (Both right and left sides)  
Lift the point A in the direction of the arrow and then remove the rear seat cushion.



3. Remove the service-hole cover.
  4. Check the fuel gauge indication.  
**NOTE:** If the fuel gauge indicates 1/4 or less, go to Step 6 skipping Step 5.
5. Drain fuel from the fuel tank. (Only when the fuel gauge indicates 1/4 or more)

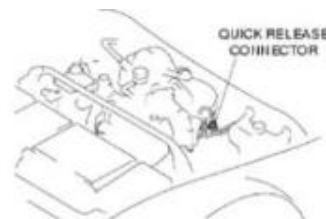
#### CAUTION

When the fuel gauge indicates 1/4 or more, the fuel level is higher than the installation surface of the fuel pump and the fuel suction pipe bracket. Due to this condition, fuel may spill or leak out when performing next steps. Therefore, make sure to drain out fuel until the fuel tank becomes 1/4 full or less (according to the fuel gauge indication).

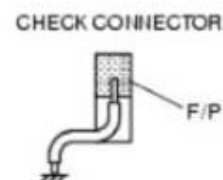
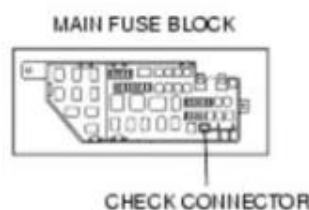
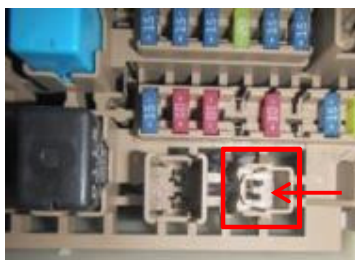
#### WARNING

A person charged with static electricity could cause a fire or explosion, resulting in death or serious injury. Before draining fuel, make sure to discharge static electricity by touching the vehicle body.

- 1) Disconnect the quick release connector (engine compartment side).



- 2) Attach a long hose to the disconnected fuel pipe and drain the fuel into a proper receptacle.
- 3) Ground the check connector terminal F/P to the body using a jumper wire.



## CAUTION

Shorting a wrong terminal of the check connector may cause electrical malfunctions. Make sure to short only the specified terminal.

- 4) Turn the ignition switch to the ON position and operate the fuel pump.

## CAUTION

The fuel pump may malfunction if it is operated without any fuel in the fuel tank (fuel pump idling). Constantly monitor the amount of fuel being discharged and immediately stop operation of the pump when essentially no fuel is being discharged.

- 5) When essentially no fuel is being discharged from the hose, turn the ignition switch to the LOCK position.

## NOTE

When operating the fuel pump with a full fuel tank, fuel discharge will become erratic after approximately 10 min, but will continue for approximately 10 min more (and barely any fuel will be discharged). At this time the fuel gauge needle will be at the 1/4 position.

- 6) Disconnect the jumper wire.

6. Disconnect the negative battery cable.

7. Replace the inner parts of fuel pump (main side) and the fuel pump ring (both sides) with a modified one, along with the gasket and retainer. **NOTE:** If Recall 0516J (Fuel Leak at Fuel Pump Rings) is closed, **the retainer and fuel pump ring will be reused.**

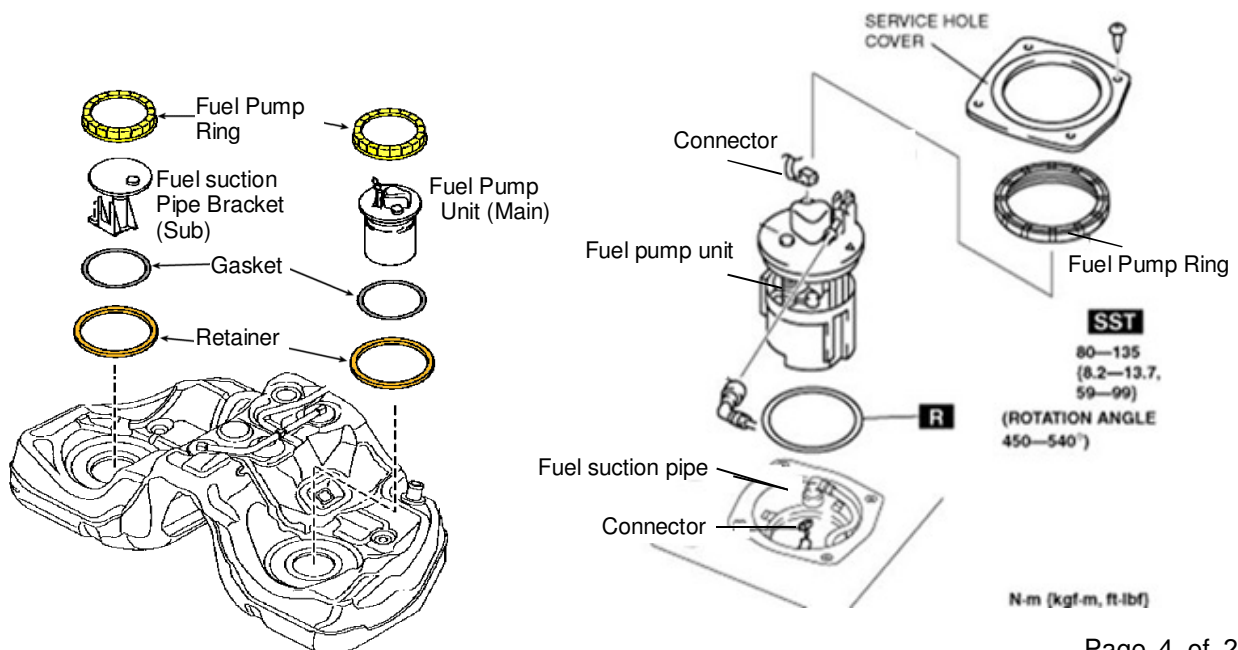
## CAUTION

**DO NOT LEAVE THE FUEL TANK FOR A LONG TIME IN CONDITION THAT THE FUEL PUMP RING IS NOT INSTALLED.**

If the fuel tank is left for a long time without the fuel pump ring installed, the shape of the fuel tank where the fuel pump ring is installed could be deformed by swelling, causing it difficult to install the fuel pump ring.



Therefore, install a new one immediately after removing the old fuel pump ring. To complete the replacement in a short time;

- Complete the replacement at one side first then proceed to other side.
- Put replacement parts near the vehicle before starting the replacement.
- When you remove the fuel pump ring to disassemble/assemble the fuel pump unit, immediately reinstall it again temporary to the fuel tank side by rotating with hands (No need to use SST).



**【Main side (Fuel pump unit side)] - UPDATE**

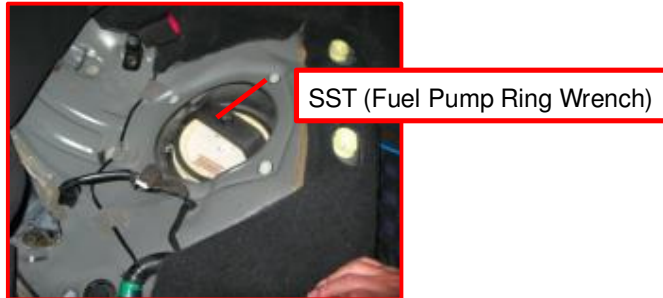


①		<p>Before loosening the fuel pump ring, blow air to remove any dirt, sand or stones around the fuel pump ring.</p> <p><b>NOTE</b> If the retainer is installed with any dirt etc. in the retainer mounting groove, there is a possibility that the retainer will be distorted and the fuel pump ring will not be tightened to the specified torque</p>
②		<p>By using SST, loosen the fuel pump ring and remove the fuel pump unit (main side), gasket and retainer. Then clean up the retainer fixing/installing portions of fuel tank (Sand or dust/dirt might be accumulated).</p> <p><b>NOTE</b> When removing the fuel pump unit (main side) and sub gauge unit, be careful not to let foreign material get inside the fuel tank.</p>

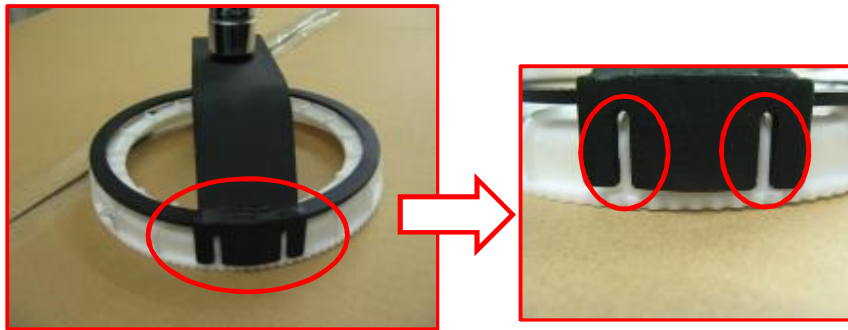
**PLEASE CONTINUE READING BELOW**



- 1) Disconnect the connectors.
- 2) Disconnect the quick connector. (Fuel hose)
- 3) Remove the fuel pump ring using SST (Fuel Pump Ring Wrench).



**NOTE:** Fit the groove of the SST into the rib of the fuel pump ring



**CAUTION**

- The fuel pump ring could be damaged if the SST is used with any play between the fuel pump ring and the SST. Securely attach the SST so that there is no gap between the SST tabs and the side of the fuel pump ring.
- The fuel suction pipe and harness might be damaged, if the fuel pump unit is lifted too much. Make sure to lift the pump only a small amount.
- When removing the fuel pump ring, be careful not making the retainer lift up. Otherwise, they will rotate together and the fuel pump ring will not be removed.



- 4) Remove the fuel pump unit assembly.
- 5) Disassembly/Assembly the fuel pump unit according to <FUEL PUMP UNIT DISASSEMBLY/ASSEMBLY>

**CAUTION**

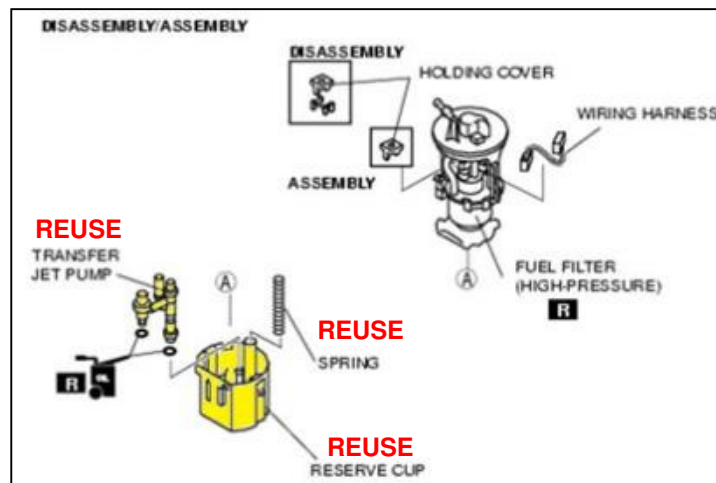
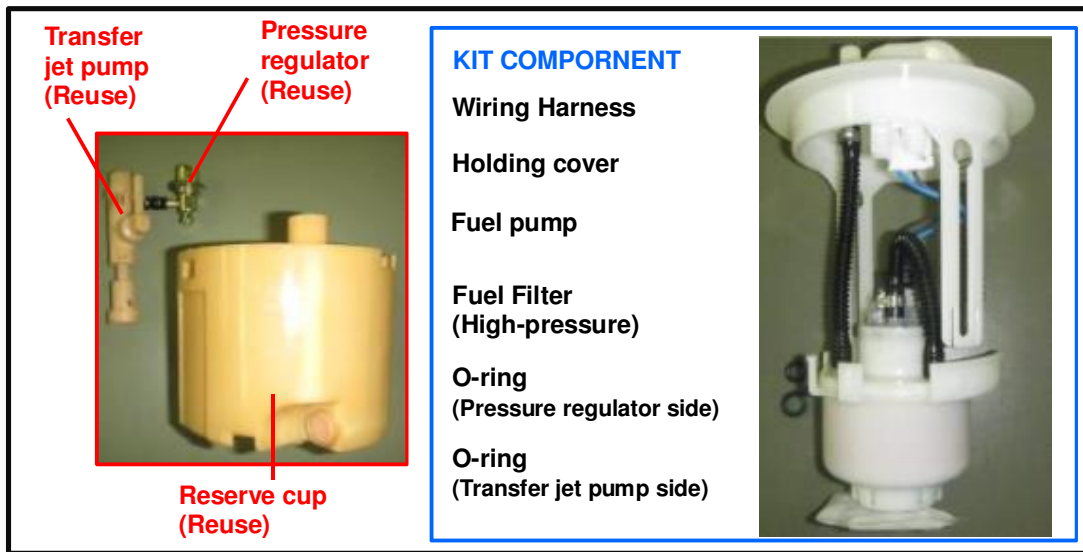
After removing the fuel pump ring, immediately reinstall it again temporary to the fuel tank side by rotating with hands (No need to use SST). This is to prevent deformation by swelling at installing



portion of fuel tank while disassembling/assembling the fuel pump unit.

## **FUEL PUMP UNIT DISASSEMBLY/ASSEMBLY**

### Parts Information



### **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.

### **Caution**

Do not touch the fuel pump discharge pipe unless it is necessary. If servicing is needed, be careful not to damage the pipe with tools or other objects, or by applying lateral stress. If the pipe is damaged, it may cause fuel leakage or a fuel pump operation malfunction.

Be careful not to damage the pressure regulator or fuel hose. If it is damaged, it may cause fuel leakage. When any parts are removed, be careful that no foreign materials penetrate the part. Otherwise it may cause a fuel pump unit operation malfunction.

Protect any removed parts using rubber matting to prevent damage. Furthermore, if a part has been dropped, do not reuse it, replace it with a new one.

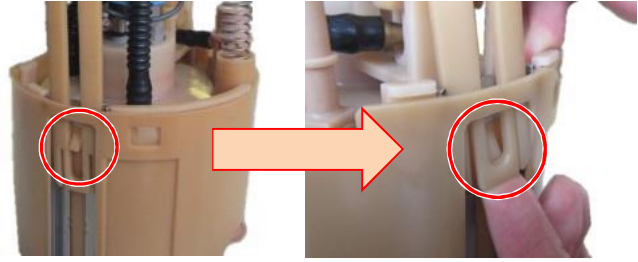
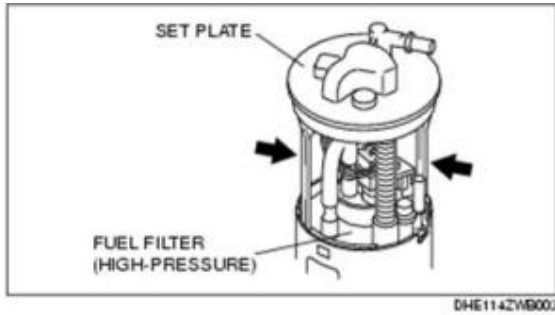
Do not use any textile products such as cotton work gloves. If used, fabric may get caught in the fuel pump or pressure regulator causing a fuel pump unit operation malfunction.

Do not touch the flange seal side of the set plate. If it is damaged or foreign material adheres, it may cause fuel leakage.

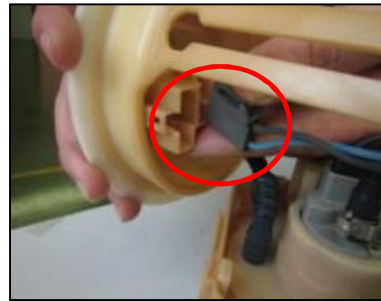
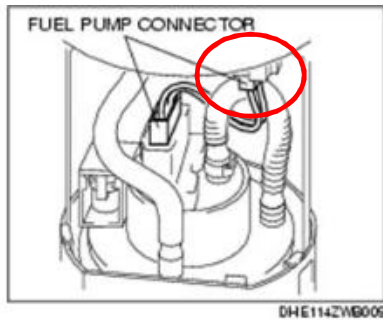
When removing foreign material inside the reserve cup, use fuel for flushing. If foreign material is removed with air, it may penetrate into the jet pump pressure regulator.

## <DISASSEMBLY>

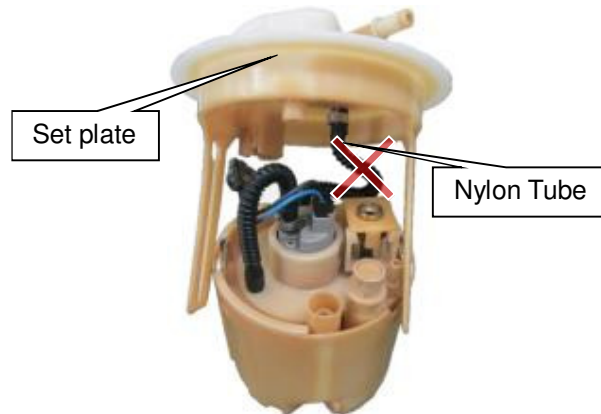
1. Remove the arm part of the set plate.



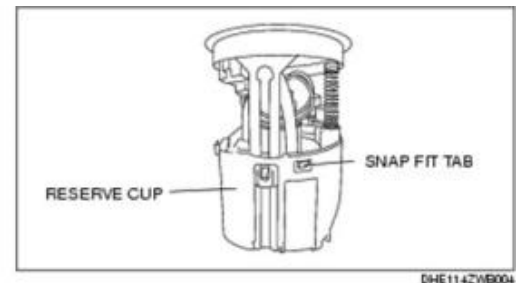
2. Disconnect the fuel pump connector.



3. Cut the nylon tube as shown below, then remove the set plate.



4. Remove the fuel pump, fuel filter, pressure regulator and transfer jet pump as a single unit from the reserve cup while pressing the snap fit tab using a flathead screwdriver.

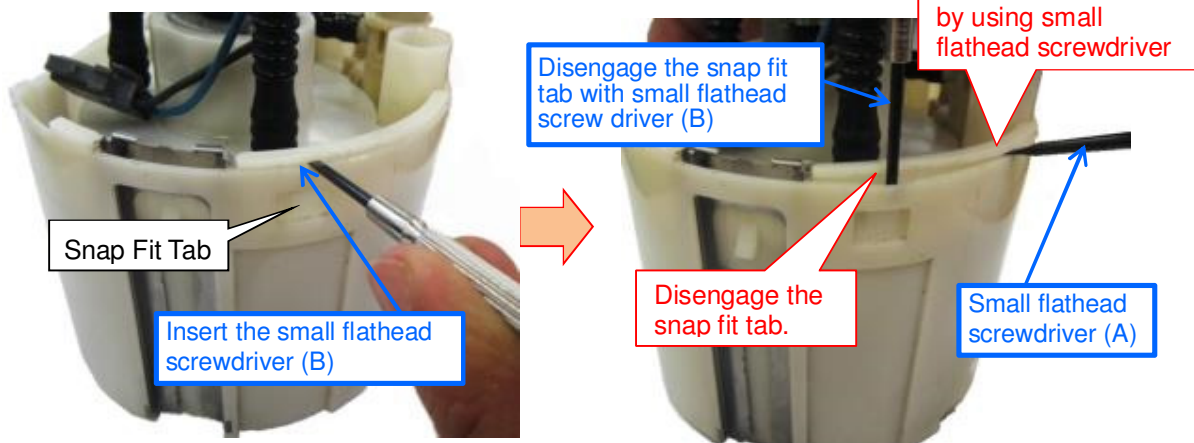


## CAUTION

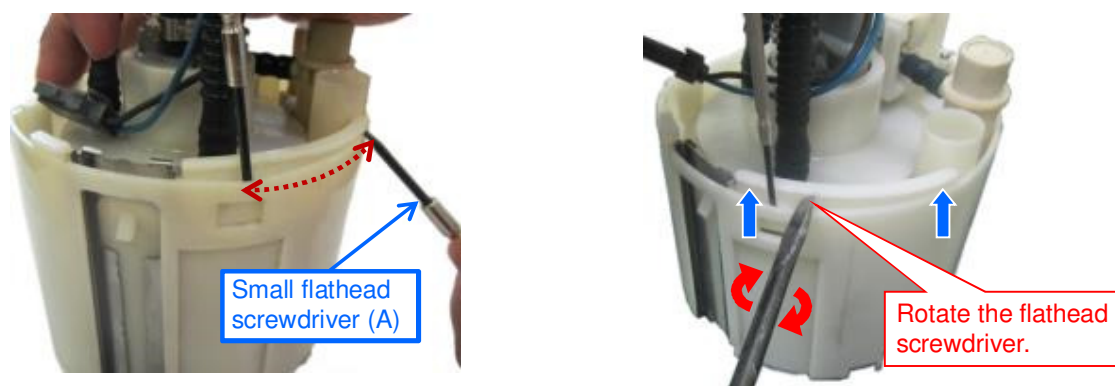
When disengaging the snap fit tab, don't hold the reserve cap as shown below. This is to avoid injury when small flathead screw driver slips and comes down unintentionally.



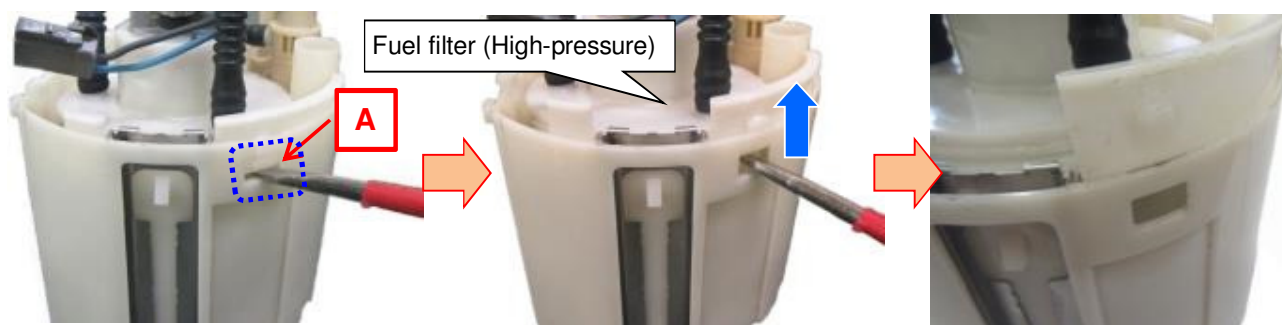
1) Insert the small flathead screwdriver (B) as shown below.



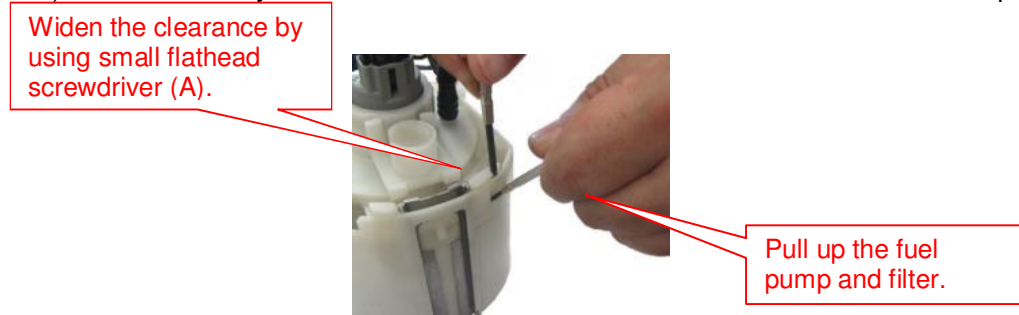
2) Pull up the fuel pump while disengaging the snap fit tab with small flathead screwdriver (A).



3) Insert the flathead screwdriver to clearance (A) as shown below, then pull up the fuel filter (high-pressure).

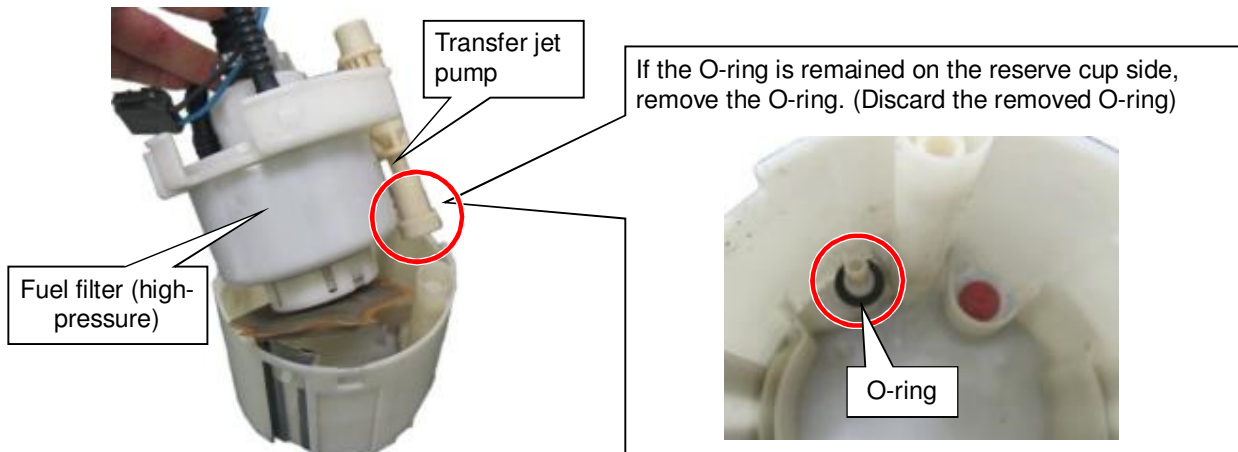


4) In the same way as the other side, insert the small flathead screwdriver and pull up the fuel filter.



- 5) Remove the fuel filter (high-pressure), pressure regulator and transfer jet pump as a single unit from the reserve cup.

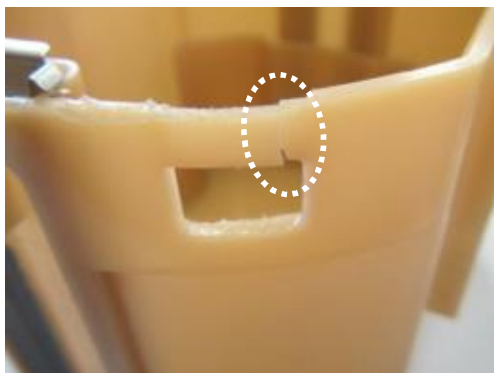
**NOTE:** Verify that the reserve cup is not split, chipped, or bent.



### <Reusability Judgment>

When the reserve cup is damaged, judge whether to reuse it depending on the damage condition.

#### **【Crack】 : Reusable**



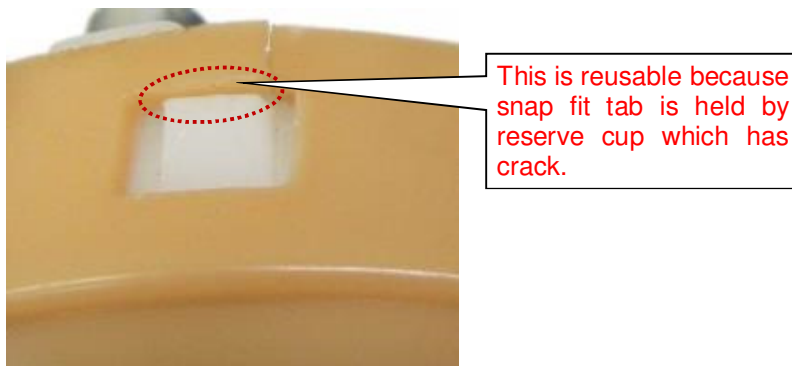
#### **【Missing】 : Not reusable**

Need to replace the fuel pump (N3H1-13-35ZG) with new one.



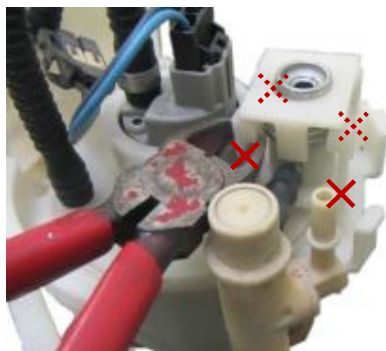
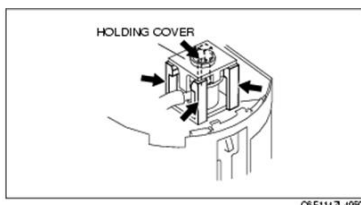
#### **NOTE:**

The following photo shows that fuel pump and filter are installed to reserve cup which has cracked.



5. Cut the four legs located under the pressure regulator holding cover as shown below.

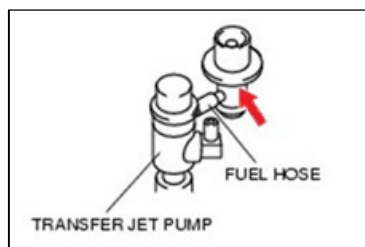
**NOTE:** Discard the removed pressure regulator holding cover.



6. Remove the pressure regulator and transfer jet pump from the fuel filter (high-pressure) by using the flathead screwdriver.

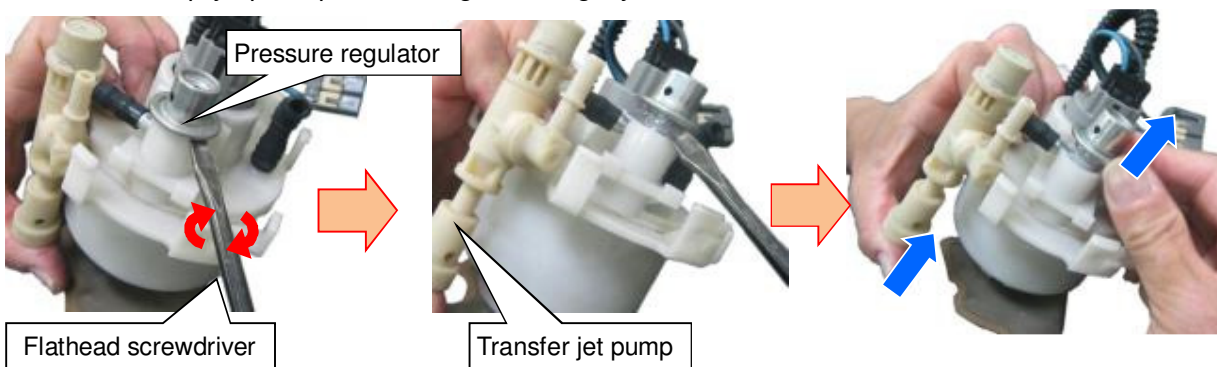
**CAUTION**

Do not pull out the fuel hose located between the pressure regulator and transfer jet pump. Do not forcibly rotate or bend it, or it could damage the sealing of the fuel hose (press fit area), or cause pipe breakage or splitting. In addition, if the fuel hose is buckled and fuel flow distortion occurs, it may cause jet pump performance deterioration.

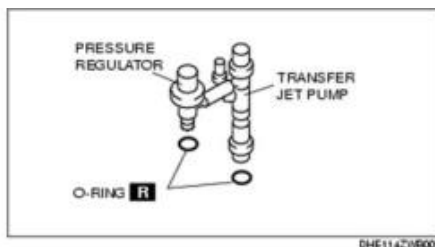


**NOTE**

Inserting the tip of the flathead screwdriver into the position indicated in the figure, rotate the screwdriver to pry up the pressure regulator slightly.



7. Remove the O-rings from the transfer jet pump and pressure regulator.

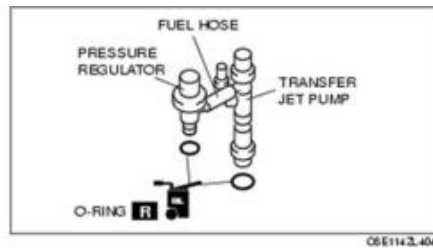


## <ASSEMBLY>

### CAUTION

Be careful not to damage the O-ring. If it is damaged, sealing damage might occur, causing fuel leakage.

1. Apply clean engine oil to the new O-rings.

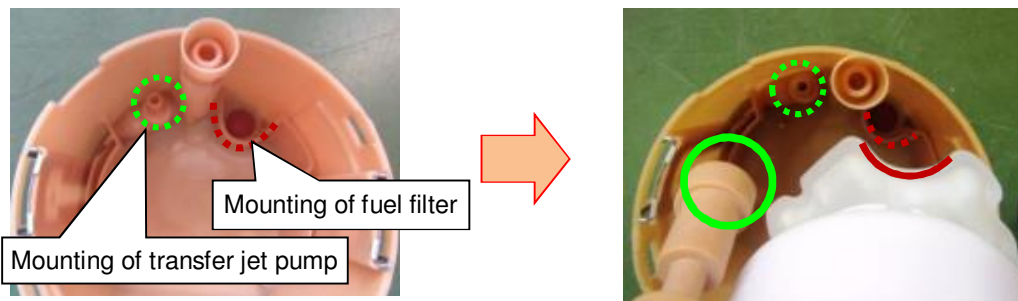


2. Install a new O-ring to the pressure regulator.
3. Install a new O-ring to the transfer jet pump.

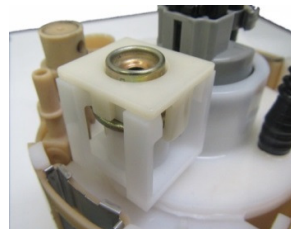
### CAUTION

Do not pull out the fuel hose between the pressure regulator and transfer jet pump. In addition, do not forcibly rotate or bend it, or it may cause damage to the fuel hose sealing or pipe breakage/splitting. If the fuel hose is buckled and fuel flow distortion occurs, it may cause jet pump performance deterioration.

4. Install the transfer jet pump and pressure regulator to modified fuel filter (high-pressure).
5. Install the fuel filter (high-pressure), pressure regulator and transfer jet pump as a single unit to the reserve cup.

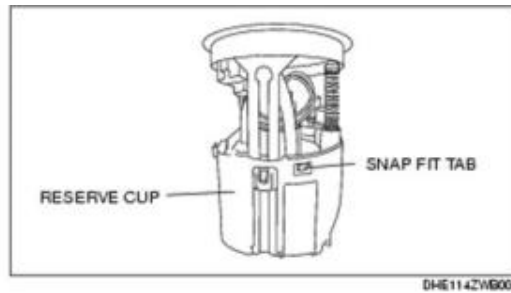


6. Engage the snap fit tab and reserve cup, and verify that they are properly engaged.
7. Install the pressure regulator holding cover with new one and verify that the snap fit tab is properly engaged.



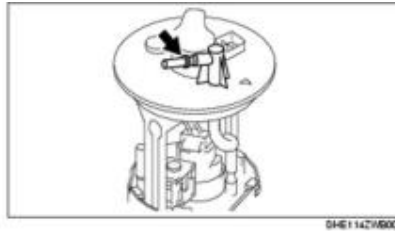
8. Perform the following procedure to install the set plate to the reserve cup.

**NOTE:** Reuse the spring by removing from old set plate.



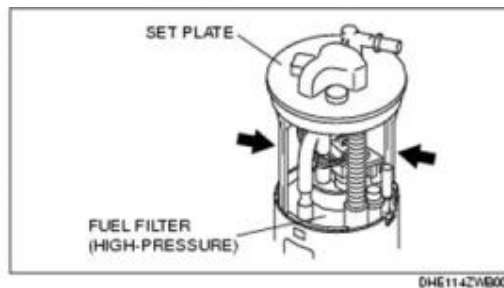
### CAUTION

Do not grasp the pipe located on the upper surface of the set plate. The pipe may be damaged causing fuel leakage.

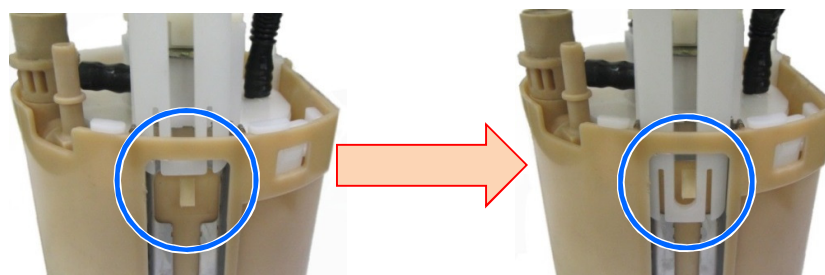


### CAUTION

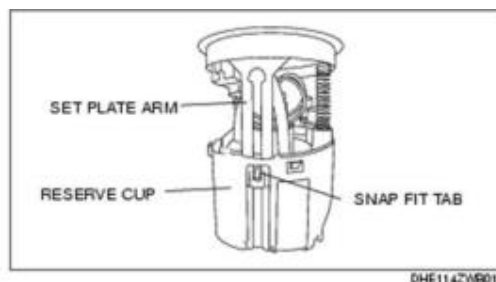
Be careful not to break the set plate arm by applying excessive pressure. If it is broken, it may cause a fuel pump unit operation malfunction.



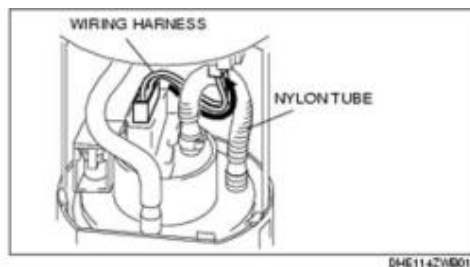
- 1) Insert the set plate arm to the reserve cup.



- 2) Engage the snap fit tab and set plate arm, and verify that they are properly engaged.



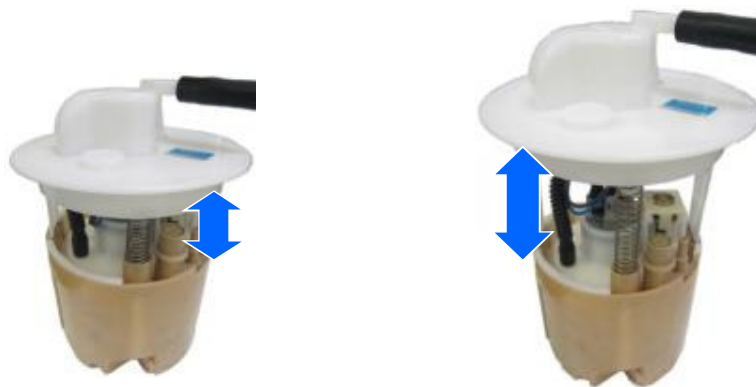
9. Route the wiring harness under the nylon tube.



10. Connect the fuel pump connector.

11. Press the set plate to expand/contract the fuel pump unit, and inspect it for the following:

The fuel pump connector wiring harness is not pinched into the pressure regulator holding cover.



12. Inspect the following and verify that each part is normal.

- Missing part
- Engagement condition of snap fit areas
- Splitting, chipping, bending, and cracking in each part
- Wiring harness routing
- Connector condition

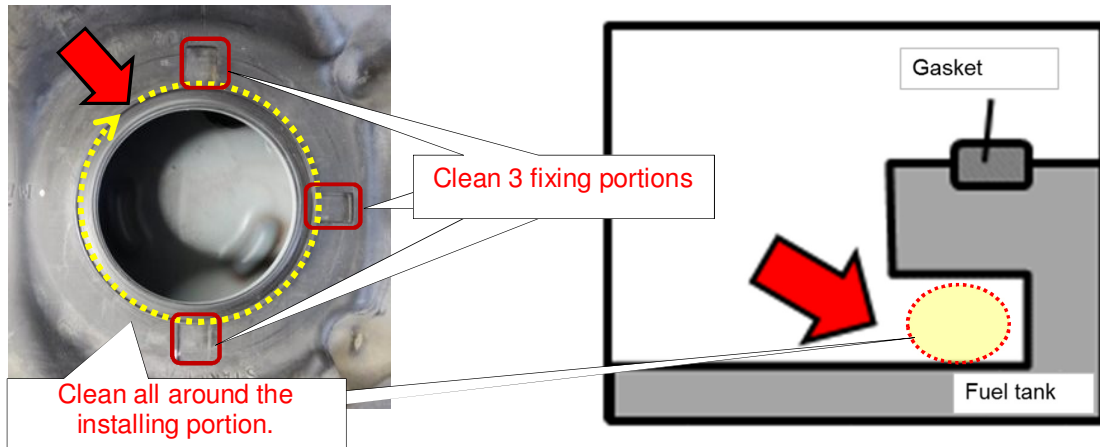
## FUEL PUMP UNIT INSTALLATION

1. Replace the retainer and gasket with new ones.




**NOTE:** If Recall 0516J (Fuel Leak at Fuel Pump Rings) is closed, the retainer and fuel pump ring will be reused.




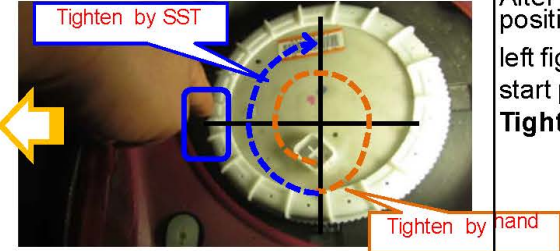
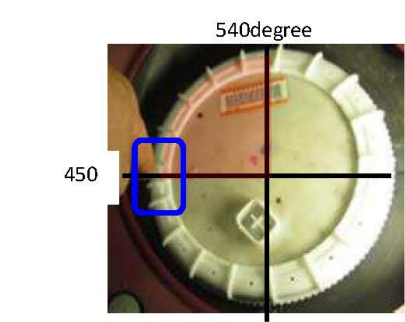
### CAUTION

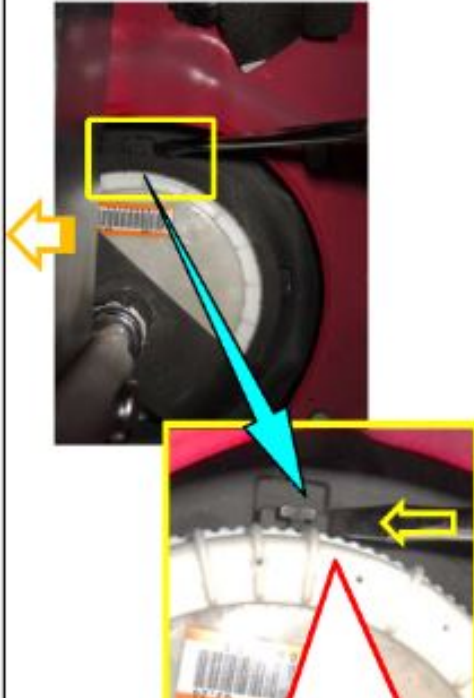
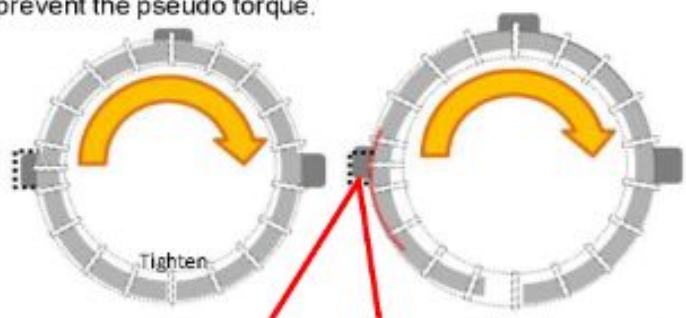
Before installing the retainer, clean up the retainer fixing/installing portions of fuel tank (Sand or dust might be accumulated).



**UPDATE – Please read the following slides to better illustrate the installation of the fuel pump module.**

③		<p>Install the retainer to fuel tank. Confirm that the retainer is fitted correctly in the three grooves.</p> <p><b>NOTE</b> If the tab of the retainer is out of the mounting groove, the retainer expands and the pump ring cannot be assembled correctly (Excessive torque is applied and it cannot be tightened to the proper position).</p>
④		<p>Install the gasket on retainer. Confirm that the gasket is correctly installed to the fuel tank all around (360 degrees).</p> <p><b>NOTE</b> If the fuel pump ring is tightened while the gasket comes off from the fuel tank, there is a possibility of fuel leakage due to gasket deformation/cut.</p>
⑤		<p>While paying attention so as not to shift the gasket, install the FDM alignment mark (left figure: red △ portion) so that it faces to front of the vehicle (Fracture of the retainer).</p>

<p>⑥</p>		<p>Align the pump ring alignment position (3 rib: left figure □ part) to the start position mark shown on the fuel tank. Then tighten 360 degrees by hand.</p> <p><b>NOTE</b> Depends on the vehicle, it may be tightened to only about 270 degrees. In that case, tighten up to around 360 degrees by hand using SST.</p> <p><b>NOTE</b> When tightening the pump ring, hold it firmly from the top so that the FDM does not move.</p>
<p>⑦</p>		<p>Set the SST.</p> <p><b>NOTE</b> The fuel pump ring is a plastic part, not a perfect circle. Change the position of the SST and attach the SST to the place with the smallest gap.</p>
<p>⑧</p>		<p>Use a torque wrench and tighten with specified torque. <b>Tightening torque: 80-135 N · m</b></p> <p><b>NOTE</b> Tighten while holding firmly from top so that SST does not slip off. Be careful not to allow FDM to move.</p>
<p>⑨</p>	 	<p>After installing the fuel pump ring, check that the alignment position (3 ribs: left figure □ part) is within the range on the left figure (450 degrees to 540 degrees from the installation start position). <b>Tightening torque: 80-135 N · m</b></p> <p><b>CAUTION</b> To prevent excessive tightening, tightening at around 450 degrees is recommended. If it does not reach the specified torque at 450 degrees, tighten with specified torque in the shaded area on the right picture. If it exceeds specified torque before turning 450 degrees, loosen and tighten again while pushing retainer by flathead screwdriver (see below "NOTE").</p>

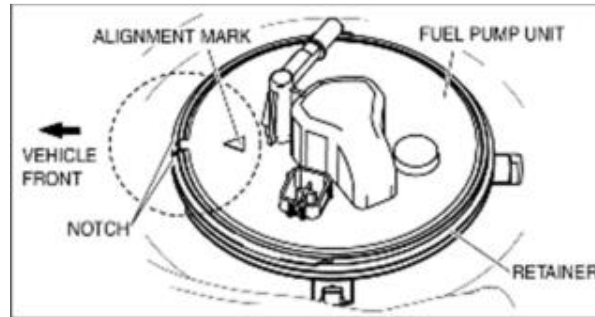
 <p>In this case, loosen the fuel pump ring, and push the retainer tab with a flathead driver as shown in the photo, then retighten the fuel pump ring to the torque spec.</p>	<p><b>NOTE</b> When it is not possible to tighten to the specified position with specified torque</p> <p><b>NOTE</b> As the fuel pump ring is tightened, the retainer begins to make strong contact with the mounting groove, and an outward force is applied to the retainer. Therefore, the retainer spreads, and the screw thread of the pump ring and the retainer bites. As a result, the specified torque is generated before the ring is fully tightened to the degree specification. In that case, loosen the pump ring once, push the flathead screwdriver to the position shown on the left figure to prevent the pseudo torque.</p>  <p>&lt; Cause &gt; Retainer end spreads open while turning the fuel pump ring and the open end is expanded to outward due to the threads biting each other, which generates a false torque reading.</p>
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**PLEASE CONTINUE READING BELOW**

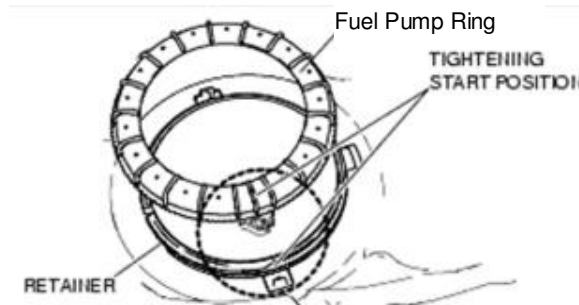


2. Install the modified fuel pump ring.

1) Align the fuel pump unit alignment mark and the retainer notch as shown in the figure.



2) Align the positions of the fuel pump ring and retainer as shown in the figure, and tighten them one full rotation by hand.

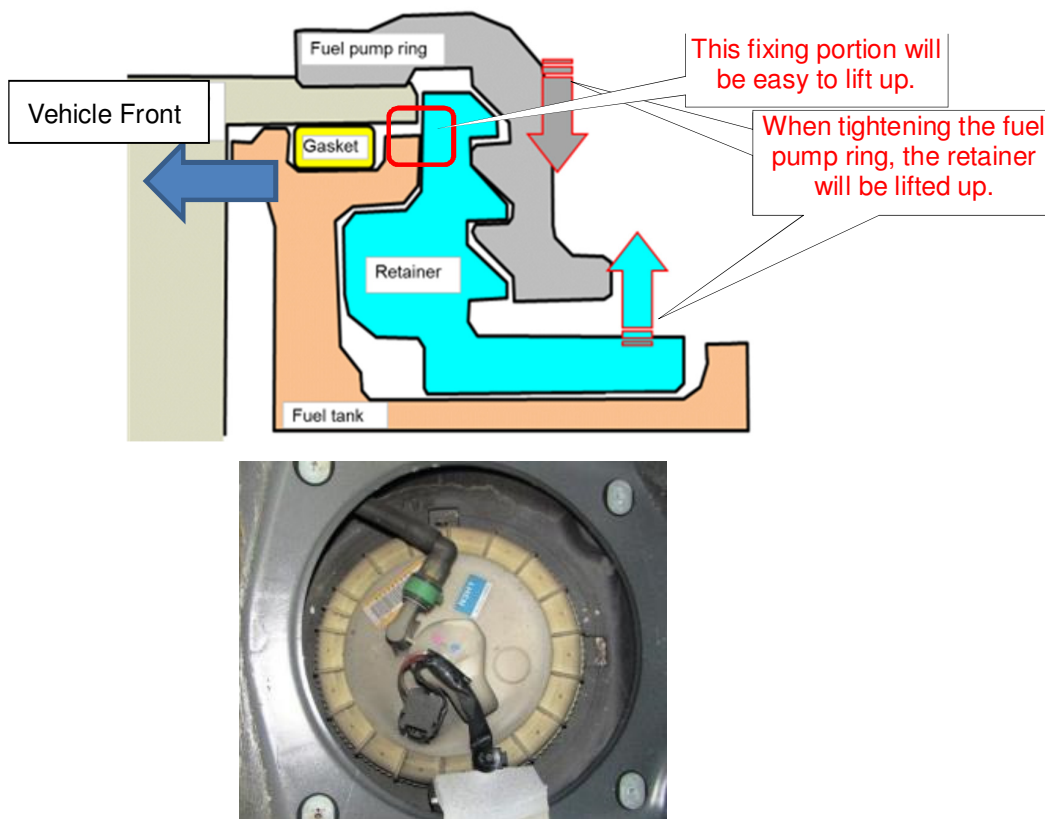


#### NOTE

If the retainer and fuel pump ring cannot be tightened by hand, remove the fuel pump ring, verify that there is no damage or misalignment on the retainer and fuel pump ring, and then tighten again.

## CAUTION

- The fuel pump ring could be damaged if the SST is used with any play between the fuel pump ring and the SST. Securely attach the SST so that there is no gap between the SST tabs and the side of the fuel pump ring.
- When tightening the fuel pump ring, be careful not making the retainer lift up. If the retainer comes off from fixing portions, the retainer spreads, the thread jams, and it reaches to specified torque before rotating to specified position “☆”.



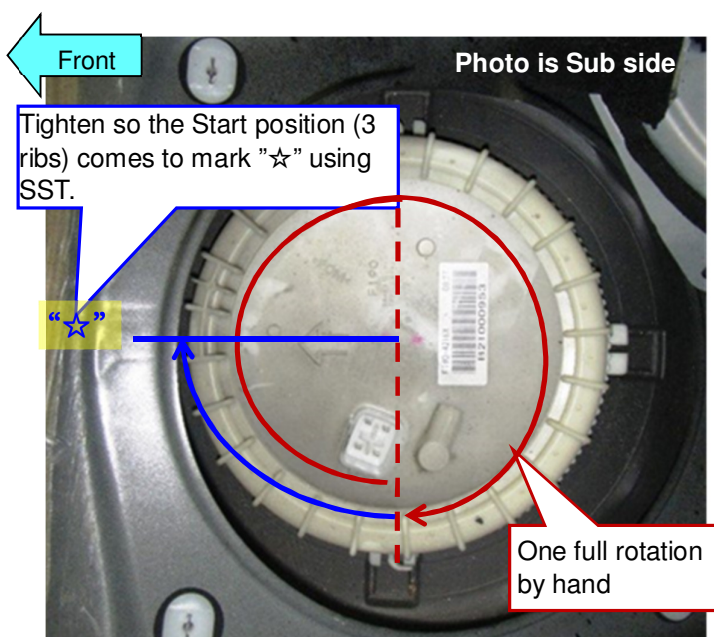
3. While keeping the alignment mark and the retainer notch aligned, tighten the fuel pump ring to the rotation angle and specified torque using the SST.

**Rotation angle** 90-180°

【Total angle for Step 2) and Step 3) is 450-540°】

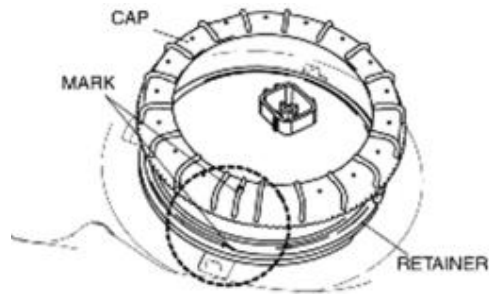
**Fuel pump ring tightening torque**

80-135 N·m {8.2-13.7 kgf·m, 59-99 ft·lbf}



### [Sub side]

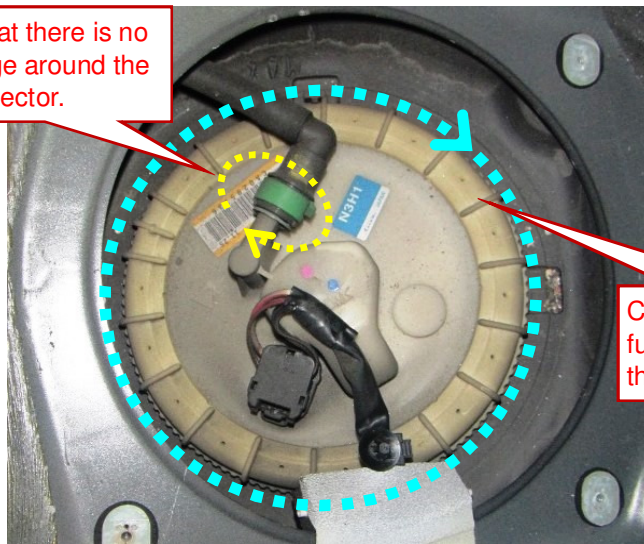
- ① Disconnect the connector.
- ② Remove the fuel pump ring using SST (Fuel Pump Ring Wrench)
- ③ Replace the retainer and gasket with new ones.
- ④ Install the modified fuel pump ring with the same procedure as the main side.



#### 4. Perform "Fuel Leak Inspection" after the fuel pump unit Installation

- 1) Start driving the vehicle from a standstill or brake suddenly 5-6 times at a low speed.
- 2) Stop the vehicle and verify from inside the vehicle that there is no fuel leakage around the fuel pump ring and quick connector.

Confirm that there is no fuel leakage around the quick connector.

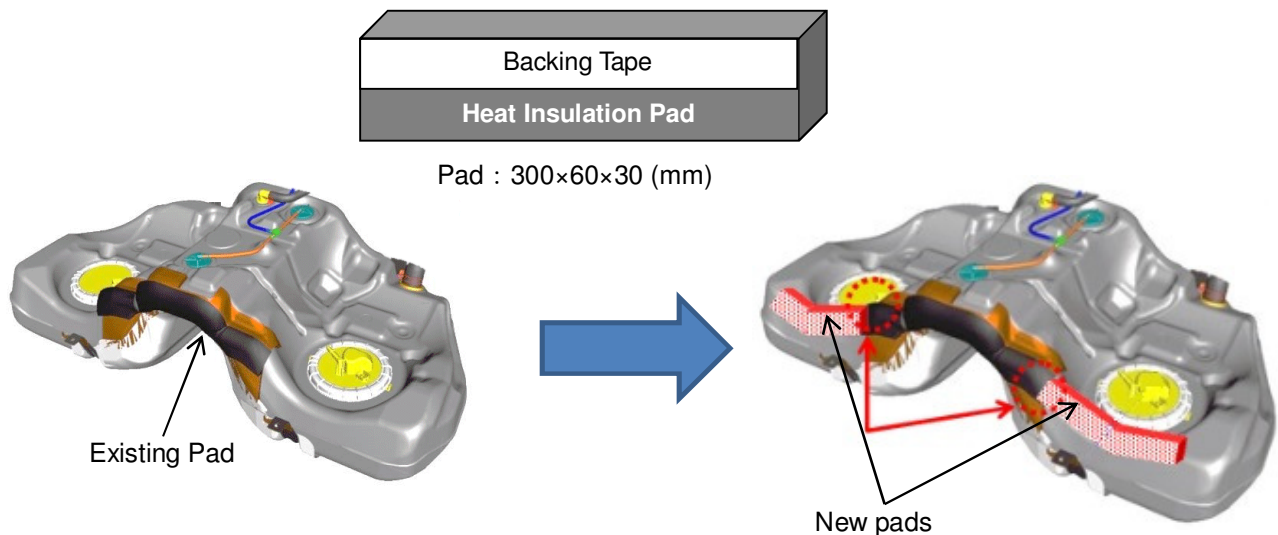


Confirm that there is no fuel leakage all around the fuel pump ring.

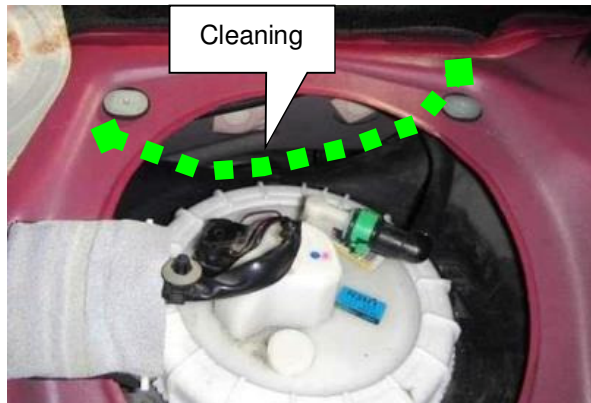
**NOTE:** If Recall 0516J (Fuel Leak at Fuel Pump Rings) is closed, skip the next step 1 (heat insulation pads installation), and proceed to the step 2.

### HEAT INSULATION PADS INSTALLATION

1. Attach two heat insulation pads to the fuel tank.



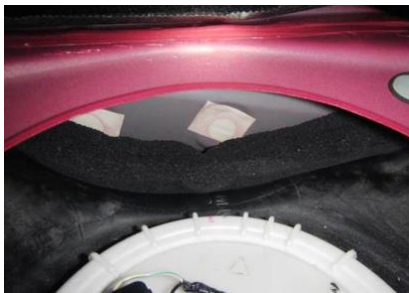
- ① Clean the fuel tank where the pad will be attached.



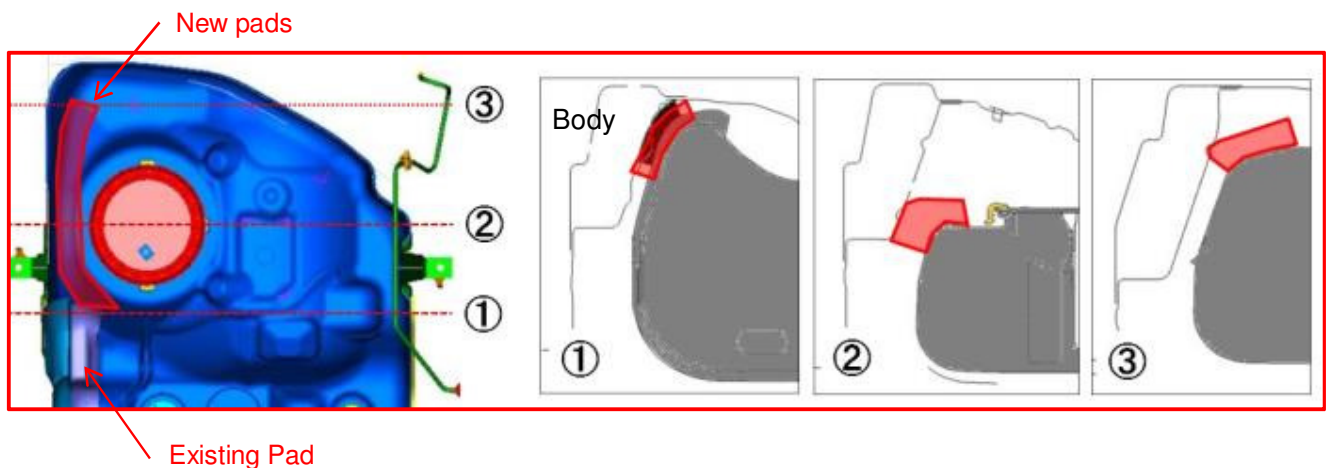
- ② Remove the backing tape and attach the pad to the fuel tank as shown below.

**NOTE**

- Attach the pad so it connects without clearance to the existing pad in the central portion of the fuel tank.
- Paste the pad onto the tank without clearance between the body and the tank.
- After pasting the pads, confirm that the tape is stuck securely.



【Image how to paste the pads】



- ③ Attach the pad on the sub side repeating Steps ① - ②.

2. Install the service hole cover with four (4) screws.
3. Install the rear seat cushion.

## C. CAMPAIGN LABEL INSTALLATION

1. Fill out a blue "Campaign Label" (9999-95-065A-06) with Campaign No: "1017E", your dealer code, today's date.

CAMPAIGN LABEL

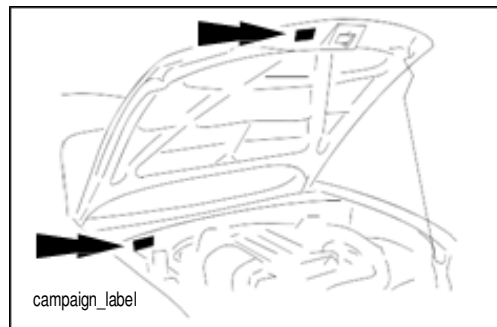
CAMPAIGN NO: \_\_\_\_\_

DEALER CODE: \_\_\_\_\_

DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_

P/N 9999-95-065A-06

2. Affix it to the hood or bulkhead as shown:



3. Return the vehicle to customer.