

Repair Procedure

Safety Recall 51211 – 2006-2007 Mazdaspeed6 & 2009-2011 Mazda RX-8 Vehicles – Fuel May Leak from Fuel Pump Mounting Rings.

ALL TECHNICIANS AND SERVICE PERSONNEL - UNREPAIRABLE VEHICLES – PLEASE READ

If you are repairing a vehicle under this campaign and discover a modification or any reason the campaign cannot be repaired, please advise your Service Manager to fill out Dealer Recall Help with the following information:

- *Why the vehicle cannot be repaired*
- *Photos of the modification or damage causing the recall to not be completed*
- *Note: Do not let the vehicle leave until you have heard back from Dealer Recall Help. Place the customer in a MCVP vehicle*
- *If the request is urgent, please contact the Warranty Department by phone and ask for a member of the Recall Team at Mazda.*

Prior Repairs: Any previous repair at a third-party shop, Mazda dealer or customer repair, does not complete the recall campaign. If you suspect the campaign has recently been repaired (new campaign label, new parts installed) please contact Dealer Recall Help FIRST before the vehicle leaves the repair shop.

A. VEHICLE INSPECTION PROCEDURE

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

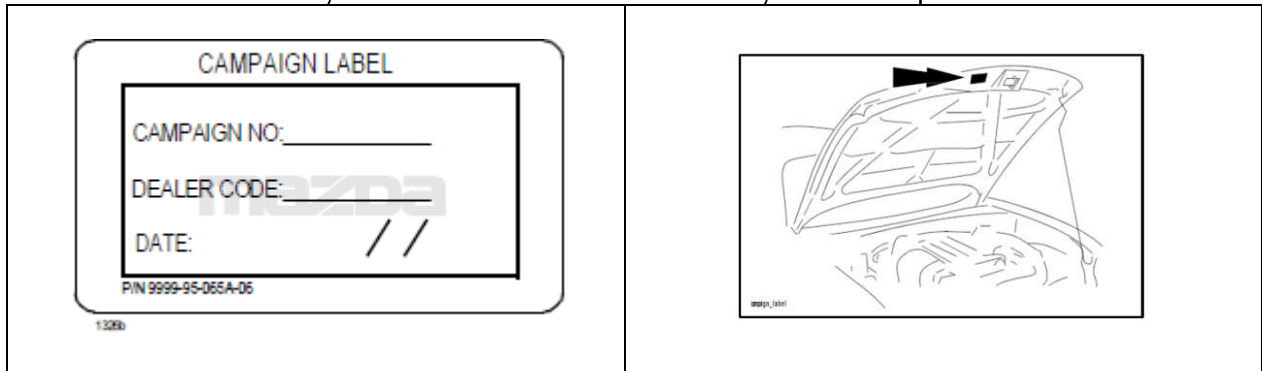
Model	Subject VIN range	Subject production date range
2006-2007 Mazdaspeed6	JM1 GG**** 61 100056 – 108051 JM1 GG**** 71 108052 – 110746	From August 4, 2005, through June 30, 2007
2009-2011 RX-8	JM1 FE**** 90 400031 – 403405 JM1 FE**** A0 403406 – 404868 JM1 FE**** B0 404869 – 405726	From March 11, 2008, through May 16, 2011

The asterisk symbol "*" can be any letter or number.

- If the vehicle is one of the above listed, proceed to Step 2.
- If the vehicle is not within the above ranges, return vehicle to the customer or inventory.

2. Perform a eMDCS Warranty Vehicle Inquiry and inspect vehicle for Campaign Labels **Recall 51211** attached to the vehicle's hood.

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



eMDCS - Warranty Vehicle Inquiry Results:

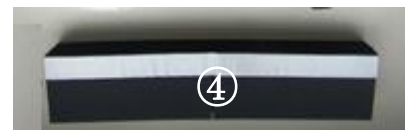
If eMDCS displays:	Campaign Label is:	Action to perform:
If no repair date is displayed on the line with RECALL 51211, it has not been completed on this vehicle	Present	Fill out Dealer Recall Help on OneMazda or the Mazda Warranty Department at (877) 727-6626, option#3 to review vehicle history.
	Not present	Proceed to "REPAIR PROCEDURE".
If repair date is displayed on the line with RECALL 51211, it has been completed on this vehicle	Present	Return vehicle to inventory or customer.
	Not present	Complete a label and apply to vehicle's hood.
RECALL 51211 is not displayed	Does not apply	Recall does not apply to this vehicle. Return vehicle to customer.

RX-8 Fuel Pump Ring Replacement Procedure

PARTS INFORMATION

Use the Kit (F1Y0-42-A1X) containing following parts.

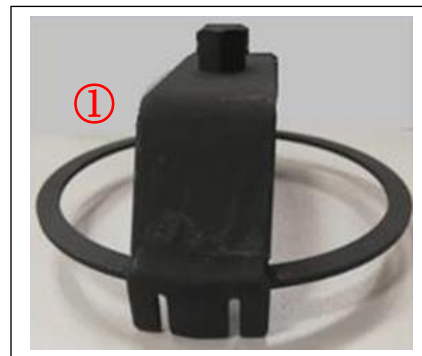
No.	Parts Name	Pcs.
①	Fuel Pump Ring	2
②	Retainer	2
③	Fuel Pump Gasket	2
④	Heat Insulation Pad	2



TOOL INFORMATION

No.	Parts Name	Pcs.
①	Fuel Pump Ring Wrench*	1

** This tool is different from the tool used in Recall 1017E. Please keep this tool stored in your tool shed. All new dealers were sent an SST at recall launch ~October 2021. If you are a new dealer after 11/1/2021 or the tool is lost or stolen, please order a replacement on eSTORE.*



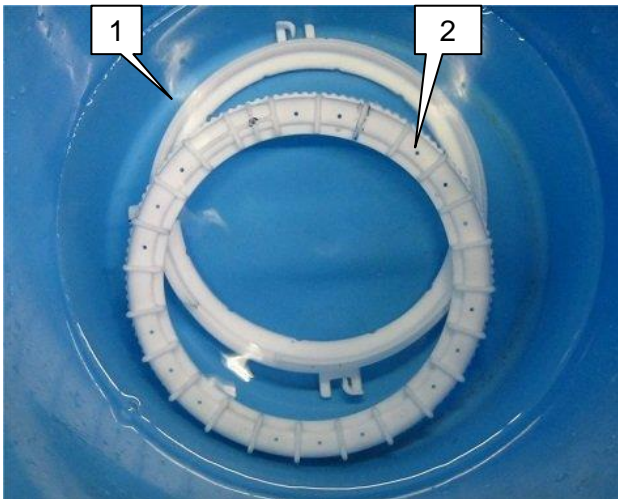
Preparation for Repair

Warm the retainer and fuel pump ring of KIT parts

Soak in hot water no hotter than 140 ° F no more than 15 minutes (5 mins is usually sufficient)

► This will make it easier to assemble the retainer

* Be sure to wipe off the water from the retainer and fuel pump ring after warming.



No.	Parts Name
1	Retainer
2	Fuel Pump ring

B. REPAIR PROCEDURE

WARNING

- Fuel is extremely flammable. Always keep sparks and flames 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 damage, injury, or death. 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.

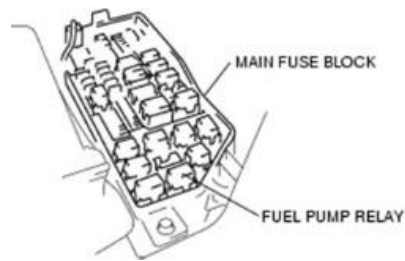
CAUTION

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.

Perform Fuel Line Safety Procedure

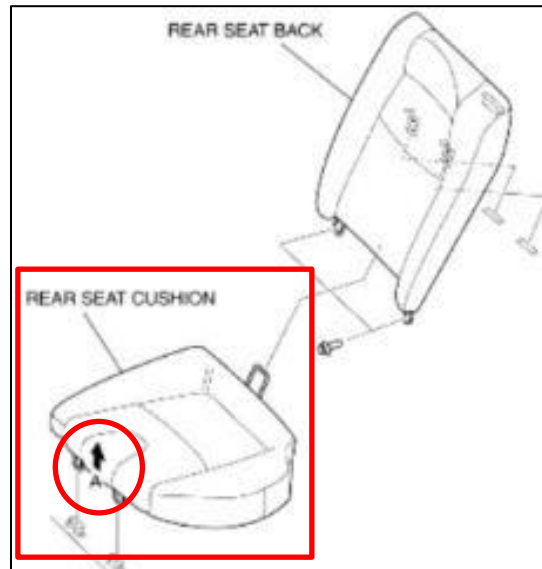
- a. Remove the fuel-filler cap to release the pressure inside the fuel tank.

- b. Remove the fuel pump relay.



- c. Start the engine.
- d. After the engine stalls, crank the engine several times.
- e. Check the fuel level on the gauge.
- f. Turn the ignition switch to the LOCK position.
- g. Install the fuel pump relay.

1. 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



2. Remove the service hole cover

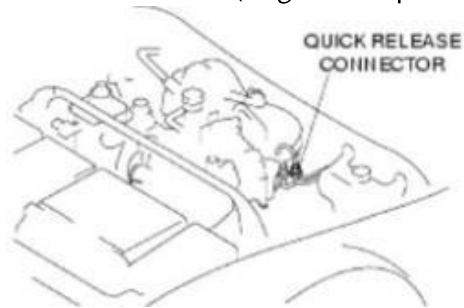
NOTE: If the fuel gauge indicates 1/4 or less, go to Step 11 skipping Steps 3-10.

3. 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).

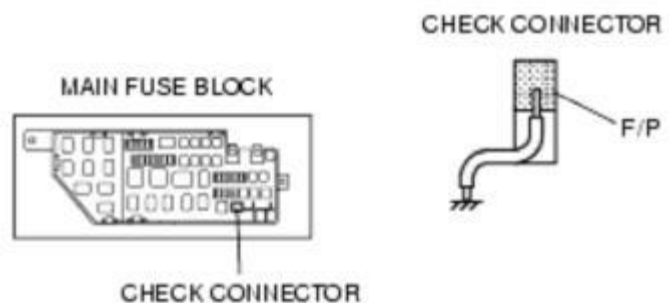
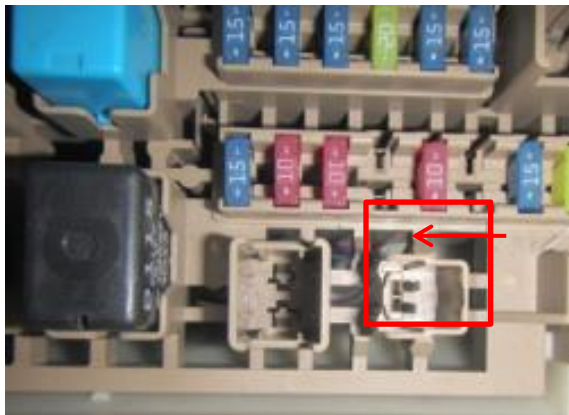
WARNING: A person charged with static electricity could cause a fire or explosion, resulting in death or serious injury. Before draining fuel, make sure to discharge static electricity by touching the vehicle body.

4. Disconnect the quick release connector (engine compartment side).



5. Attach a long hose to the disconnected fuel pipe and drain the fuel into a proper receptacle.

6. 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.

8. 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 no fuel is being discharged.

9. When 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 approx. 10 min but will continue for approx. 10 min more and then essentially no fuel will be discharged. At this time the fuel gauge needle will be at the 1/4 position.

10. Disconnect the jumper wire.

11. Disconnect the negative battery cable.

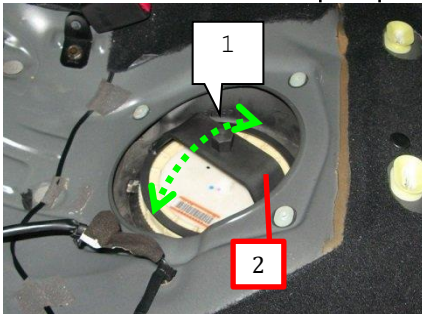
12. Put on safety goggles and use a pressurized air gun to lightly blow out any dirt, debris from the top of the fuel tank and around both fuel pump rings. You will more thoroughly clean that area in a later step

13. Disconnect the connectors and quick connector of fuel pump unit and fuel suction pipe bracket.
CAUTION: When disconnecting the quick connector, wrap it in a waste cloth to prevent fuel from splashing.



No.	Parts Name
1	Fuel quick connector
2	Connector (Main)
3	Connector (Sub)

14. Remove the fuel pump ring using SST (Fuel Pump Ring Wrench).

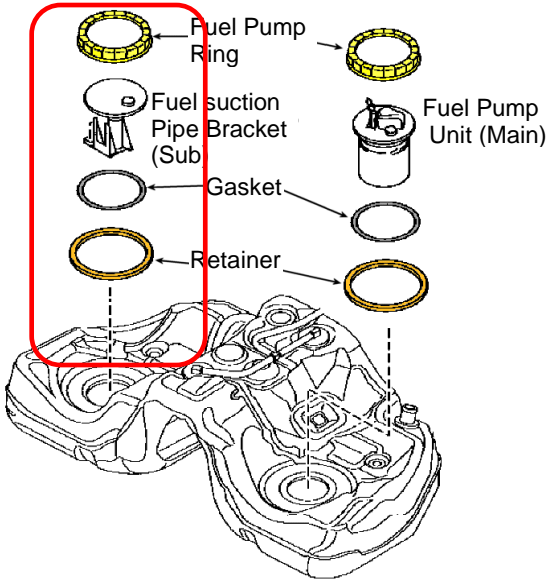


1	Move left and right to check the mounting condition
2	SST (Fuel Pump Ring Wrench)

CAUTION

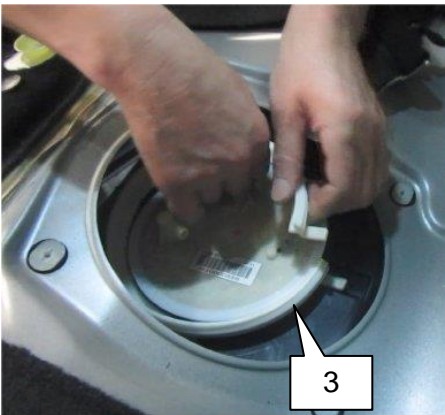
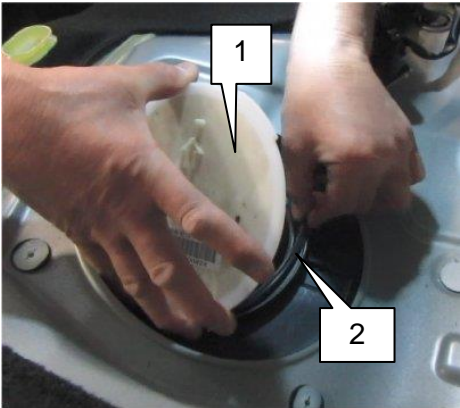
- The fuel pump ring could be damaged if the SST is used with any play between the fuel pump ring and the SST. Securely attach the SST so that there is no gap between the SST tabs and the side of the fuel pump ring.
- The fuel suction pipe might be damaged if the fuel pump unit is lifted too much. Make sure to lift the pump only a small amount.

15. Use SST to remove the Fuel suction pipe bracket (sub).



16. Lift the fuel suction pipe bracket up slightly and remove the gasket.

17. Remove the retainer.



No.	Parts Name
1	Fuel suction pipe bracket
2	Gasket
3	Retainer

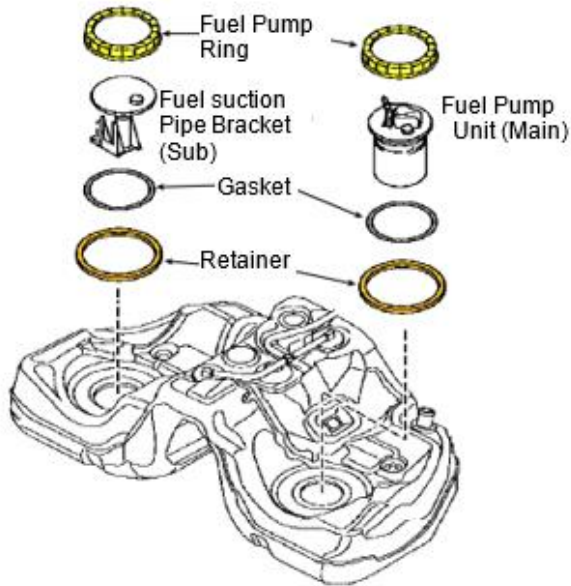
CAUTION

DO NOT LEAVE THE FUEL TANK FOR A LONG TIME WITHOUT THE FUEL PUMP RING INSTALLED.

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

Therefore, install the new fuel pump retainer, gasket, and ring immediately after cleaning the mounting surfaces once the old fuel pump ring has been removed as quickly as possible.

- Complete the replacement at one side first then proceed to other side.
- Put replacement parts near the vehicle before starting the replacement.



No.	Parts Name
①	Fuel Pump Ring
②	Retainer
③	Fuel Pump Gasket

18. Replace the fuel pump ring, retainer, and gasket with new parts.
19. Prepare warmed fuel pump ring and retainer. (See: *** Preparation for repair**)

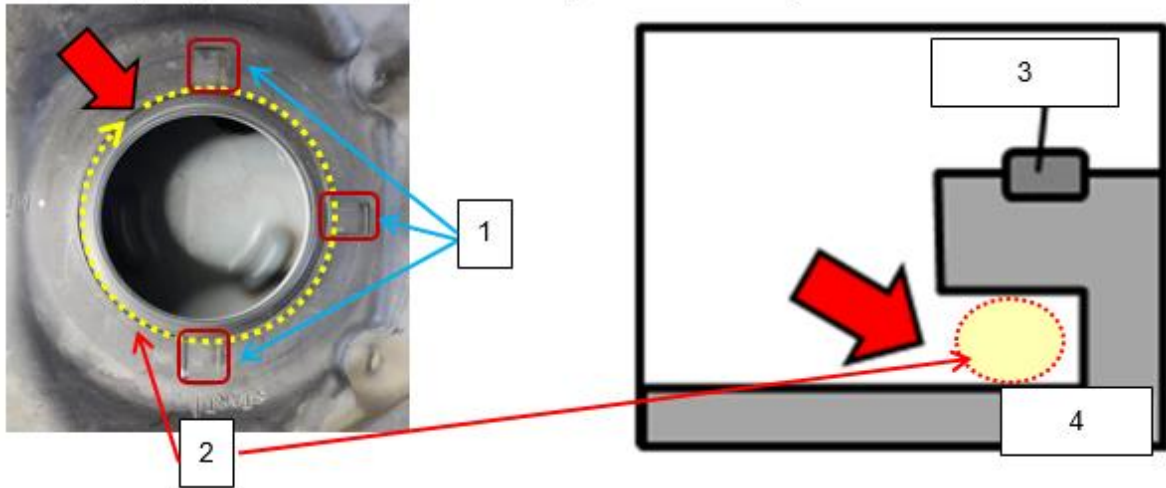


20. Fit the retainer in the three dents of the fuel tank.

CAUTION

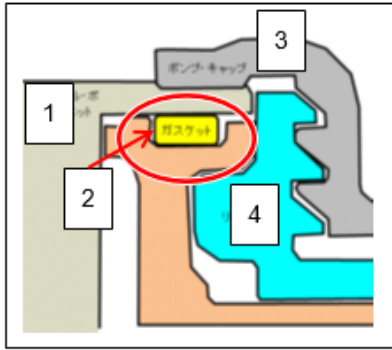
Before installing the retainer, clean up following portions of the fuel tank using clean shop rags (Sand, dust, and oil may have accumulated).

- 1) Top surface of fuel pump unit (main) (sub)
 - 2) Retainer mounting surface of the fuel tank.
 - 3) Retainer, pump ring (wipe off water after warming)
- Warm the pump ring and retainer so that they can be smoothly assembled to the fuel tank.



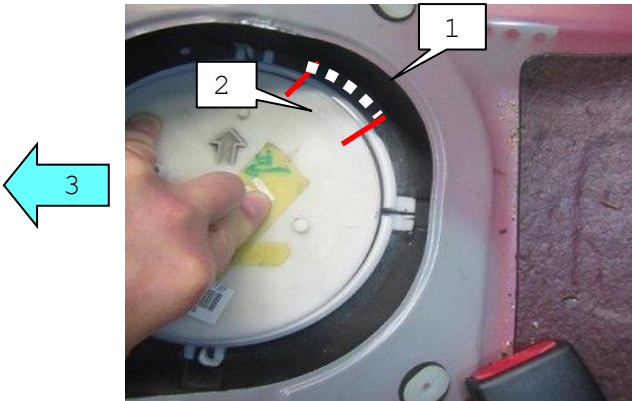
1	Clean 3 fixing portions	3	Gasket
2	Clean all around the installing portion.	4	Fuel tank

21. Set the gasket on groove of fuel tank.



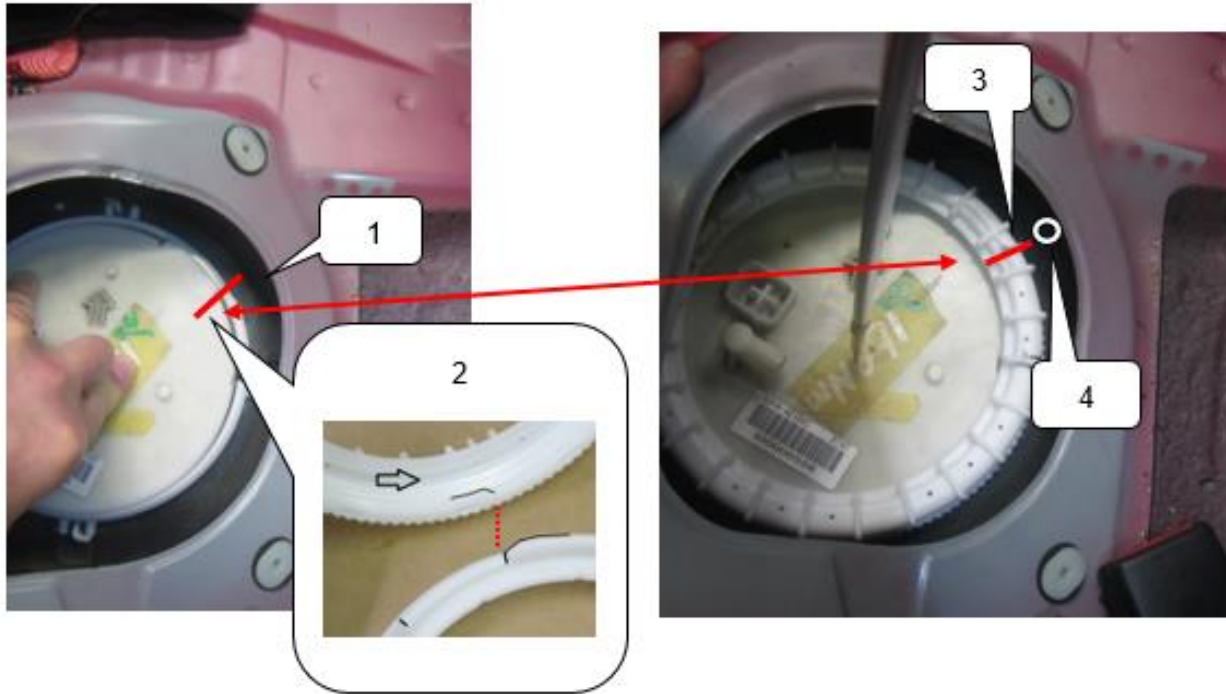
No.	Part Name
1	Fuel pump unit
2	Gasket
3	Pump ring
4	Retainer

22. Make sure to put and push Fuel gauge unit (Sub) on groove of fuel tank from above by hand.



No.	Part Name
1	Retainer recess range
2	Convex range
3	Vehicle front side

23. Align the right side of the notch in the retainer with the center of the three lines of the pump ring. This is the [Rotation start position] for tightening while rotating.



1	The notch on the right side of retainer is the rotation start position
2	The thread of the pump ring begins to hang to thread of retainer from here
3	Align the center of the three lines of the pump ring as the [Rotation start position]
4	Mark the tank side with [Rotation start position] © so to recognize the rotation angle

24. As shown in the figure below, tighten the fuel pump ring by hand, one turn (360 °), while holding the top of pump unit by hand from above.

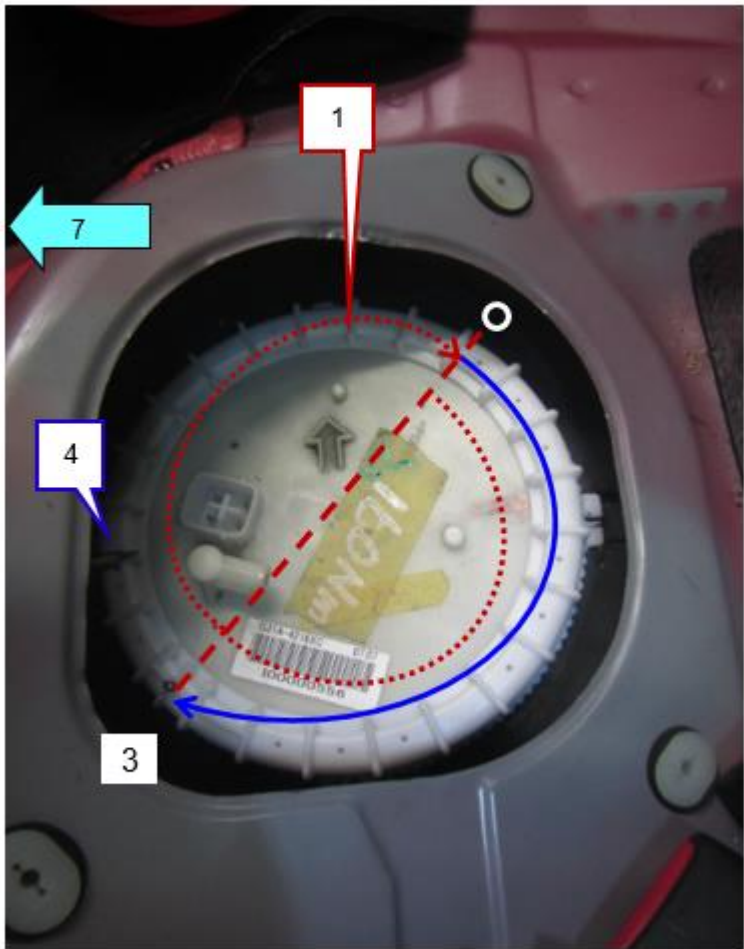
CAUTION: * If the Fuel Pump Ring cannot be tightened by hand, remove the pump ring, check that the retainer, gasket, and pump ring are free of foreign matter such as damage, misalignment, and sand, and then tighten again.

25. Tighten another half turn (180°) using SST. (When tightened for a total of one and a half turns (540°), the pump ring tightening start position mark (three lines) will be around position #3 (540°) in the figure.). Then tighten the pump ring to the specified torque.

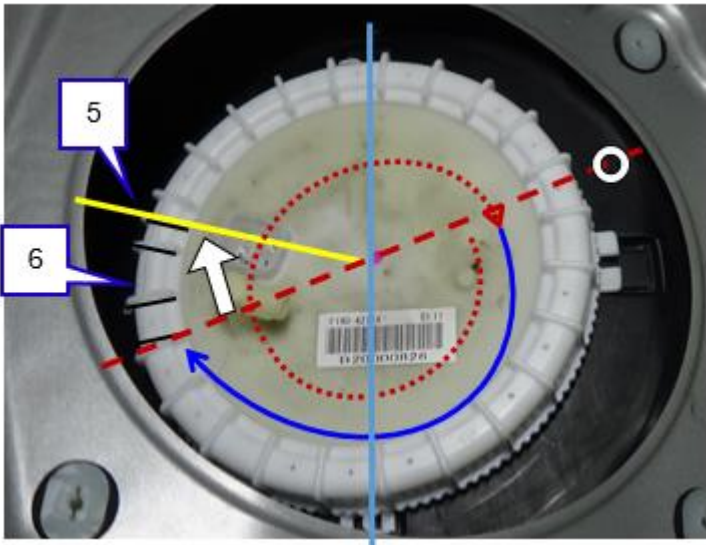
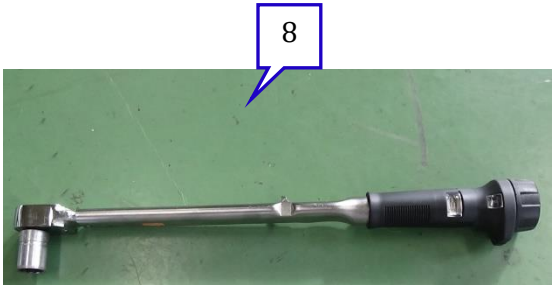
Pump ring tightening torque: 74ft-lbs ± 14ft-lbs (100 N· m± 20 N· m) (Be sure to use a preset type torque wrench)

Tightening rotation range: 540 ° to 580 ° (limit angle: do not exceed 580 °)

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1	Make one rotation by hand (360 °)
2	Further, make a half turn (180 °) with SST.
3	Position rotated (540 °)
4	Further tighten to the specified torque - (74ft-lbs ± 14ft-lbs) (100 N· m ± 20 N· m)
5	[Rotation limit position] (580 °)
6	The position where 2.5 ribs are tightened from 540 ° becomes about 580 °
7	Front of vehicle
8	Preset type torque wrench



CAUTION

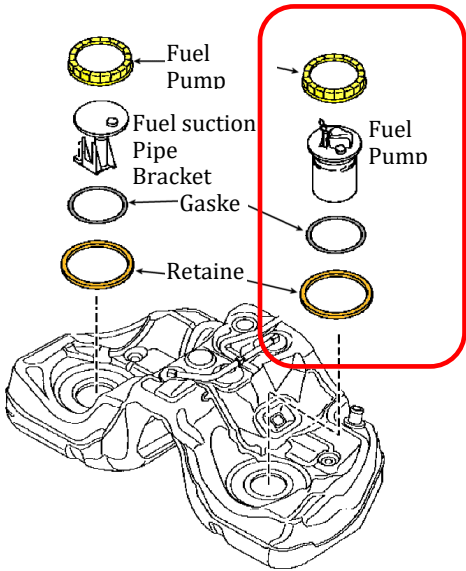
If SST is used with any gaps between the wall surface of the pump ring and the claws of the SST, the pump ring may be damaged. Make sure to install SST so that there are no gaps.

NOTE:

If the tightening torque exceeds the upper limit before reaching 540°, remove the pump ring and check that the retainer, gasket, and pump ring are free of foreign matter such as damage, misalignment, and sand. Tighten again.

If the tightening torque does not rise to the specified value even if the rotation limit exceeds 580°, remove the retainer, gasket, and pump ring, check if the gasket has been forgotten to be installed, or if oil or water has adhered, and then tighten again. The same applies to the upper surface of the Fuel suction pipe bracket.

26. For the [Fuel pump unit] (main) side, replace the retainer, gasket, and pump ring in the same procedure.



27. Connect the fuel gauge unit (main) (sub) connector and the fuel quick connector.

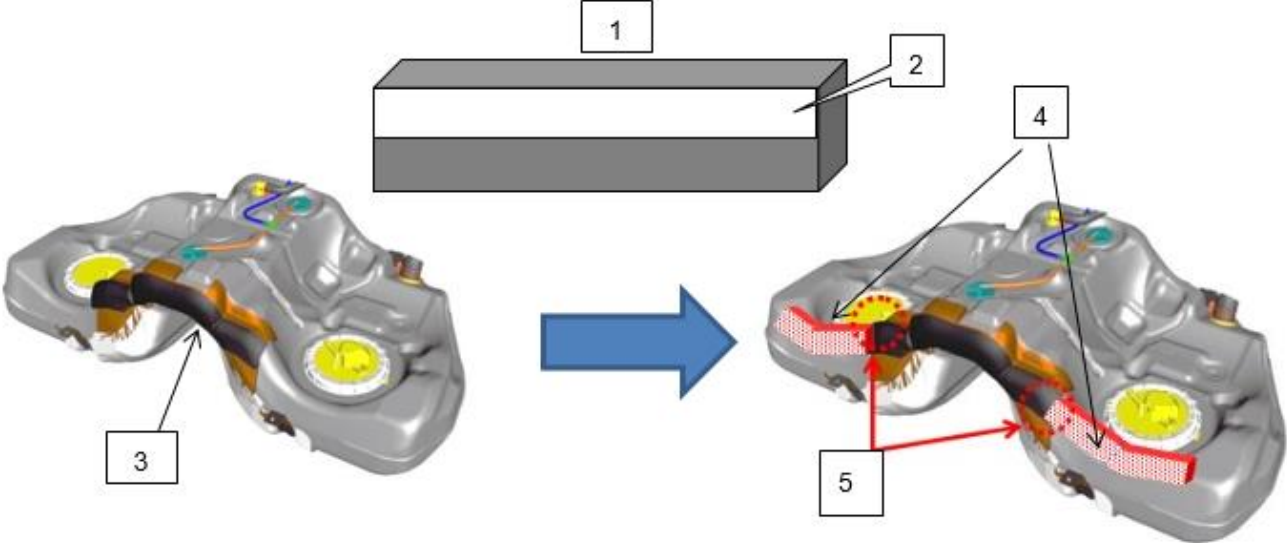
CAUTION

After connecting the fuel system quick connector, lightly push and pull in the axial direction to check that there is no disconnection



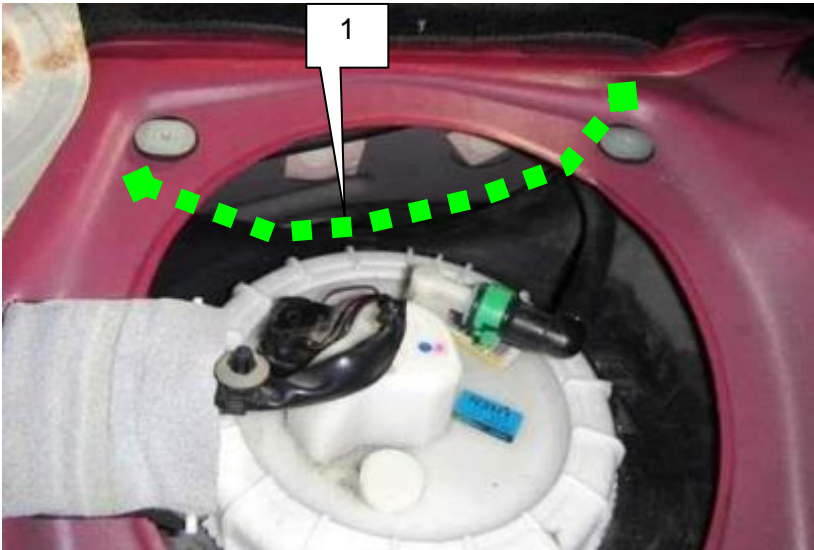
No.	Parts Name
1	Fuel quick connector
2	Connector (Main)
3	Connector (Sub)

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



1	Heat insulation Pad : 300×60×30 (mm)
2	Tape
3	Existing Pad
4	New pads
5	Stick new pad so that it connects to the existing pad. (Stick so that there are no gaps)

29. Clean the fuel tank where the pad will be attached. There cannot be any dirt present, or the pads will fall off.



1 | Cleaning

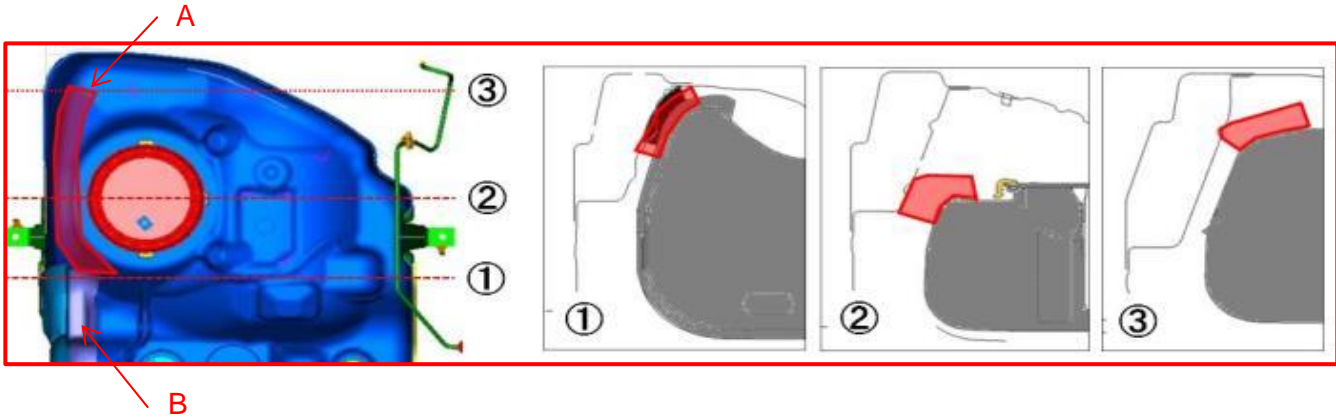


30. Remove the backing tape and attach the pad to the fuel tank as shown above.

NOTE

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

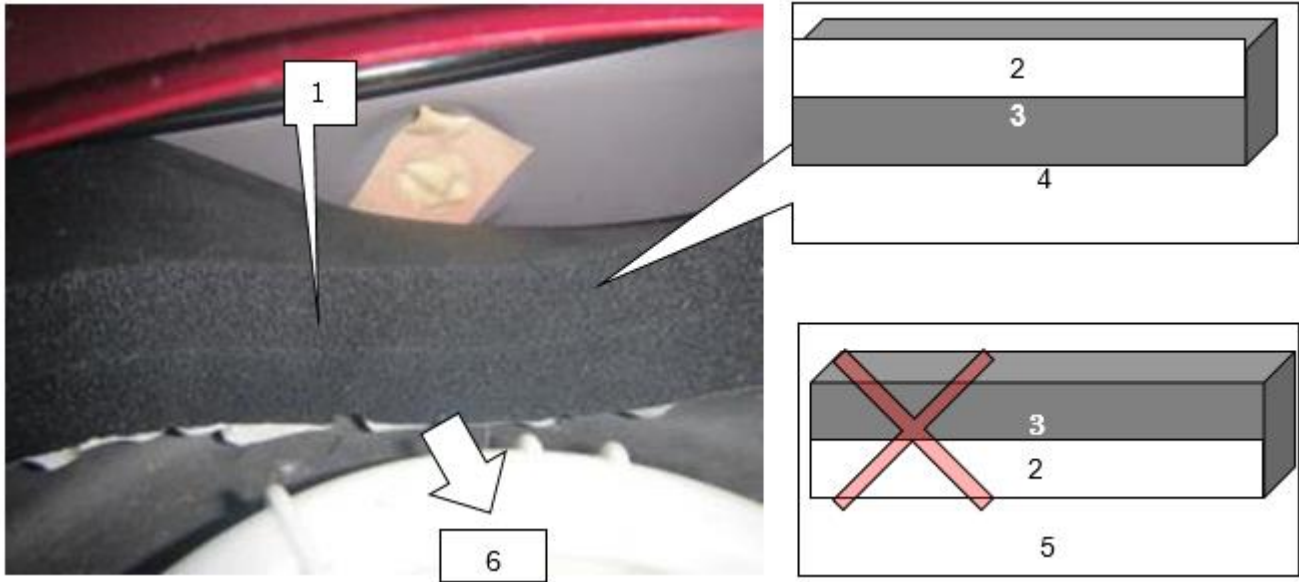
How to paste the pads:



1	Stick pad without clearance to the existing pad in the central portion		
2	Stick pad without clearance between body and fuel tank.		
3	Stick pad without clearance between body and fuel tank.		
A	New pads	B	Existing Pad
C	Body	D	Pad

Follow steps 1-3 attach the pad on the on the other side as well repeating Steps.

31. After pasting the pads, make sure that the tape is firmly attached.



1	Push in as much as you can so that there is no gap with the body
2	Tape
3	Heat Insulation Pad
4	Stick the tape so that it is above the tank
5	The tape should not be on the lower side (ground side) of the tank. (May be peeled off by muddy water from the ground)
6	Fuel tank upward (vehicle upward)

Fuel leak check

- i. Fill the tank with the fuel you previously drained.
- ii. Connect the battery (-) cable and start engine.
- iii. Make sure there are no fuel leaks near the fuel pump unit.
- iv. Drive the vehicle, go, and stop suddenly 5-6 times at low speed.
- v. Stop the vehicle and check that there is no fuel leakage near the fuel pump and tank.
- vi. Perform an on-board evap test to confirm no evaporative leak with IDS

32. Install the service hole cover with four (4) screws.

33. Install the rear seat cushions.

B. CAMPAIGN LABEL INSTALLATION

1. Fill out a Black "Campaign Label" (9999-95-055A-06) with Campaign No: "51211", your dealer code, today's date.

CAMPAIGN LABEL

CAMPAIGN NO: _____

DEALER CODE: _____

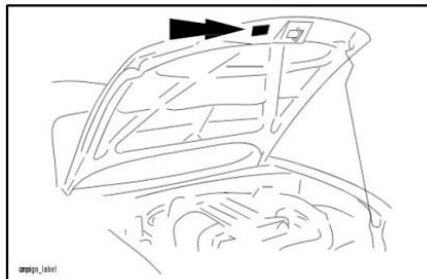
DATE: ____/____/____

MAZDA

PIN 9999-95-055A-06

1328

2. Affix it to the hood as shown:



END OF REPAIR PROCEDURE