

TECHNICAL INSTRUCTIONS

FOR

SAFETY RECALL 21TA03

VEHICLE MAY STALL IF LOW-PRESSURE FUEL PUMP BECOMES INOPERATIVE

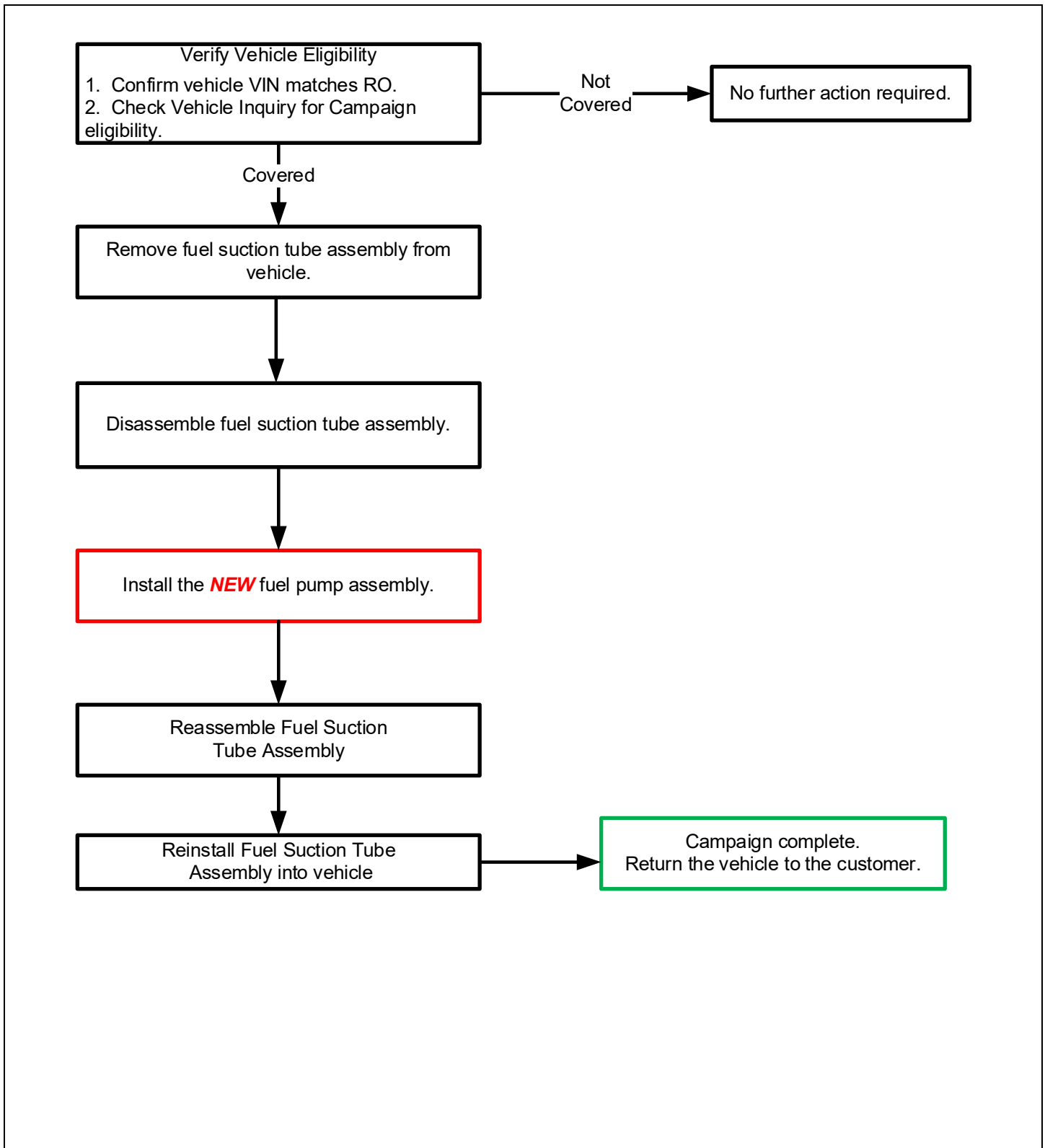
CERTAIN 2018 – 2019 MODEL YEAR 86

The repair quality of covered vehicles is extremely important to Toyota. All dealership technicians performing this recall are required to successfully complete the most current version of the E-Learning course “Safety Recall and Service Campaign Essentials”. To ensure that all vehicles have the repair performed correctly; technicians performing this repair are required to currently have completed all of the following courses:

-T623 Electrical Circuit Diagnosis

It is the dealership’s responsibility to select technicians that have completed the above courses to perform this repair. Carefully review your resources, the technician skill level, and ability before assigning technicians to this repair. It is important to consider technician days off and vacation schedules to ensure there are properly trained technicians available to perform this repair at all times.

I. OPERATION FLOW CHART



II. IDENTIFICATION OF AFFECTED VEHICLES

- CHECK VEHICLE FOR CAMPAIGN ELIGIBILITY
 - a. Compare the vehicles VIN to the VIN listed on the Repair Order to ensure they match.
 - b. Check the TIS Vehicle Inquiry System to confirm the VIN is involved in this campaign, and that it has not already been completed prior to dealer shipment or by another dealer.

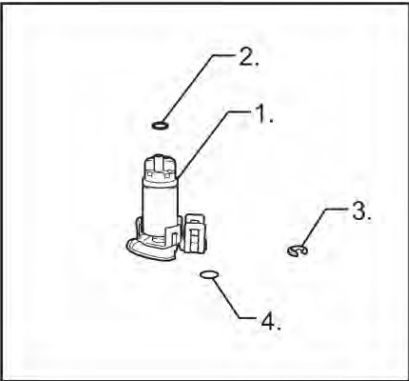
Note:

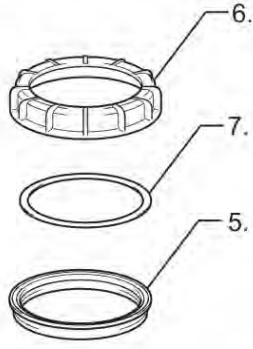
- TMS warranty will not reimburse dealers for repairs completed on vehicles that are not affected or were completed by another dealer.

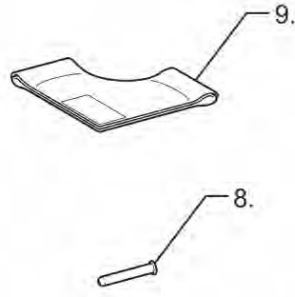
III. PREPARATION

A. PARTS

| Part Number | Part Description | | Quantity |
|--|------------------|--------------------------|----------|
| SU003-10808 | PUMP 86* | | 1 |
| *The kit above includes the following parts: | | | |
| No. | Part Number | PART DESCRIPTION | Quantity |
| 1 | SU003-04154 | FUEL PUMP ASSEMBLY | 1 |
| 2 | SU003-04515 | O-RING (Thick) | 1 |
| 3 | SU003-04516 | E-RING | 1 |
| 4 | SU003-04159 | O-RING (Thin) | 1 |
| 5 | SU003-07284 | GASKET | 1 |
| 6 | SU003-01023 | FUEL PUMP GAUGE RETAINER | 1 |
| 7 | SU003-04167 | SEAT RING | 1 |
| 8 | - | TEMPORARY PLUG | 1 |
| 9 | - | SPECIAL TOOL PE/S | 1 |







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B. TOOLS & EQUIPMENT

- Techstream
- Standard Hand Tools
- Torque Wrench
- Air Blow Gun
- Vernier Calipers 150mm
- Gas Caddy (Minimum 25 gallon capacity)


C. MATERIALS

- Brake Cleaner
- Protective Gloves
- Plastic Bag
- Marker Pen
- Butyl Tape
- Protective Glasses
- Tray
- Engine Oil
- Protective Tape
- Cloth

D. SPECIAL SERVICE TOOLS

“Claw Set for ZN6” will be used with the dealerships existing Handle set from the Fuel Sender Lock Nut Wrench Set (09808-14031). This set of tools will supplement the SST kit that each dealership currently has. Additional SST’s can be purchased through the [Toyota Special Service Tools \(SST\)](#) website


SST – These Special Service Tools required for this repair:

| Part Number | Tool Name | ILLUSTRATION | Quantity |
|-------------|---------------------------------|--|----------|
| 09808-14031 | Fuel Sender Lock Nut Wrench Kit |  | 1 |

*The set above includes the following tools:

| Part Number | Part Description | Quantity |
|----------------|------------------|----------|
| 09808-01080-01 | Sliding Jaw | 1 |
| 09808-01070-01 | 105mm Jaw Set | 1 |
| 09808-01060-01 | 18mm Jaw Set | 1 |
| 09808-01040-01 | 50mm Jaw Set | 1 |
| 09808-01030-01 | Crossbar | 1 |
| 09808-01010-01 | Handle | 1 |

E. CAMPAIGN TOOLS

| Part Number | Part Description | Illustration | Quantity | Remarks |
|-------------|------------------|---|----------|--|
| 09808-99140 | Claw Set for ZN6 |  | 1 | Equivalent tool to claw No.3 (09808-01070) |

IV. BACKGROUND

The subject vehicles were manufactured by Subaru. According to Subaru, the subject vehicles are equipped with a low-pressure fuel pump which may stop operating. If this were to occur, warning lights and messages may illuminate on the instrument panel, and the engine may run rough. This may result in a vehicle stall and the vehicle may be unable to be restarted. This can increase the risk of a crash.

V. SAFETY PRECAUTIONS

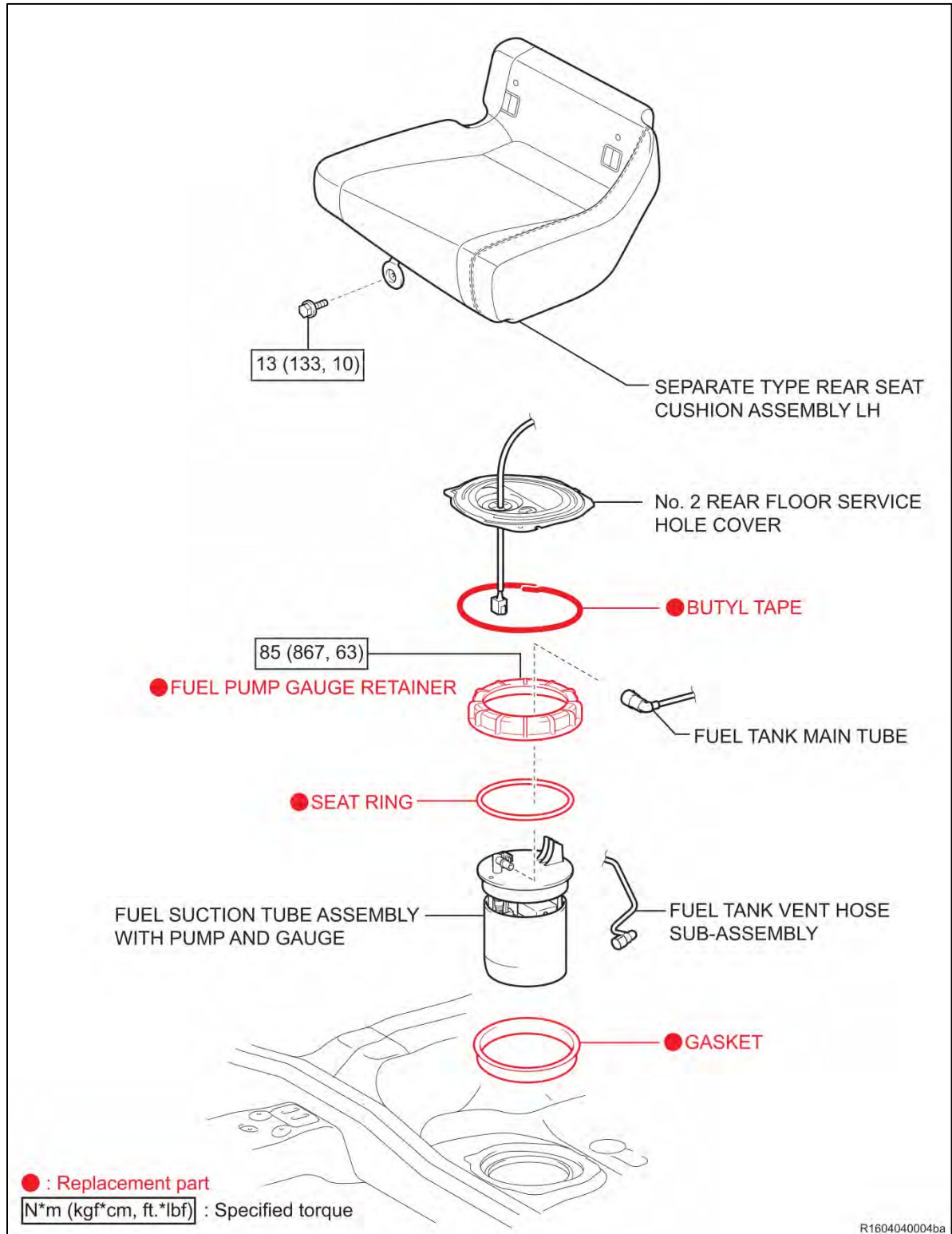


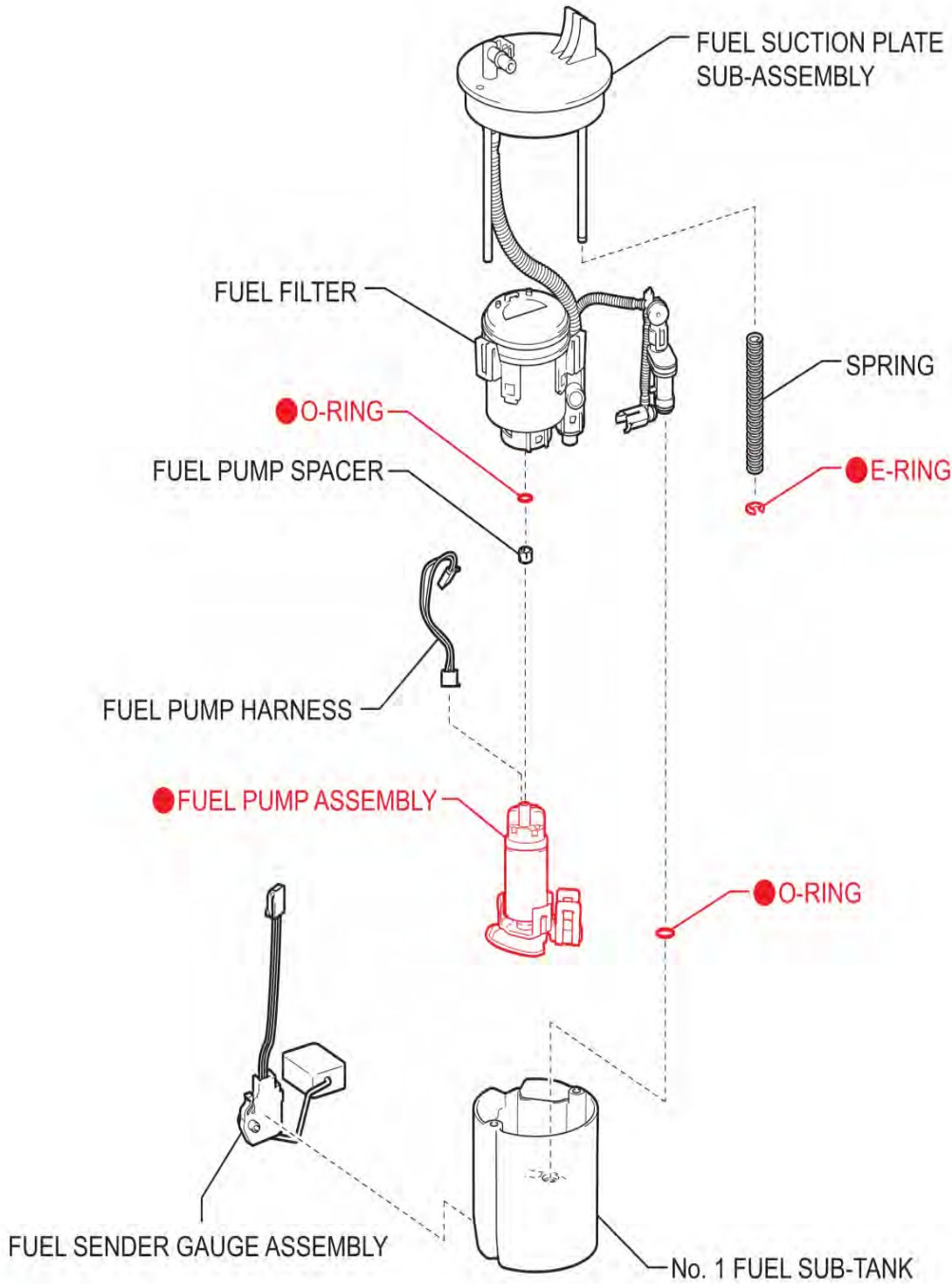
- Always remember “SAFETY FIRST”.
- When installing/uninstalling the fuel system components, keep safety first in mind and carefully observe the following instructions to avoid fire.
- Check each item in the appropriate section for each vehicle.

CAUTION:

- When installing/uninstalling the fuel system components, keep safety first in mind and carefully observe the following instructions to avoid accidents:
 - a. When working on the fuel system, display a Flammable - Keep Fire Away sign.
 - b. Smoking is prohibited nearby.
 - c. Perform this work in an area where there are no sparks nearby from the operation of welders, grinders, drills, electric motors, stoves, etc.
 - d. **DO NOT** use electrical devices nearby because they can become hot and the operation of power switches can generate sparks.
 - e. **DO NOT** use iron or steel hammers while working, because they may generate sparks.
 - f. **DO NOT** start engines even in adjacent stalls.
 - g. Prepare fire extinguishers before starting any work.
 - h. Perform this work in a well-ventilated area (natural ventilation). **DO NOT** use exhaust fans or electric fans, because their motors might generate sparks.
 - i. Since it is possible for fuel vapor to build up, **DO NOT** work in or near a pit.
 - j. If fuel is spilled, use shop towels or similar material to quickly wipe it up and then use compressed air to diffuse the fuel vapor.
 - k. Shop towels and other materials that have come into contact with fuel should be dried in a well-ventilated area and then disposed of as appropriate.

VI. COMPONENTS





● : Replacement part

VII. WORK PROCEDURE



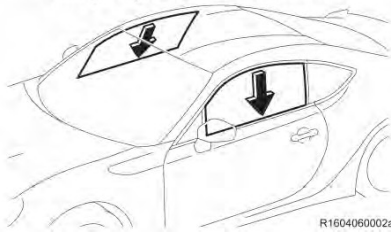
1. CHECK FOR DTC'S

- Using a Techstream, perform a Health Check to check for any Diagnostic Trouble Codes.

Note: *This Safety Recall covers only the replacement of the fuel pump and associated parts. It does not cover the diagnosis or replacement of any other parts on the vehicle.*

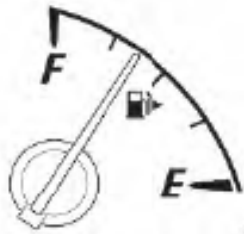
REMOVAL TIP: AIR VENTILATION

Fully Open All Windows



Fully open all door glass to prevent the inside the vehicle from being filled with fuel vapor.

REMOVAL TIP: FUEL LEVEL



If the fuel level inside the fuel tank is above **2/3**, fuel may overflow from the fuel tank during the removal of the fuel suction tube assembly. Confirm the fuel level in the vehicle is below **2/3** before proceeding. If necessary, drain fuel from the tank.

REMOVAL TIP: SPECIAL TOOL PE/S INSTALLATION



To prevent butyl tape from adhering to the surrounding parts, apply special tool PE/S (included in the parts kit) over the butyl tape.

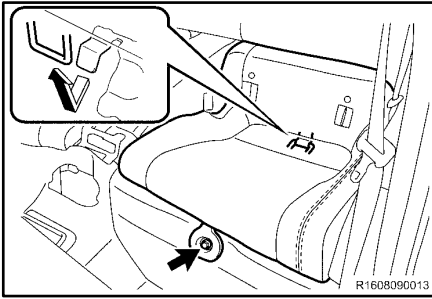
2. DISCHARGE FUEL SYSTEM PRESSURE

- Refer to repair manual instruction [FA20 FUEL: FUEL SYSTEM: PRECAUTION; 2017 - 2020 MY 86 \[06/2016 - \]](#)

3. DRAIN FUEL (IF NECESSARY)

- Refer to repair manual instruction on [FA20 FUEL: FUEL PUMP: REMOVAL; 2017 - 2020 MY 86 \[06/2016 - \]](#)

4. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL



5. REMOVE REAR SEAT ASSEMBLY

Refer to repair manual instruction on [SEAT: REAR SEAT ASSEMBLY: REMOVAL; 2017 – 2020 MY 86 \[06/2016 -\]](#)

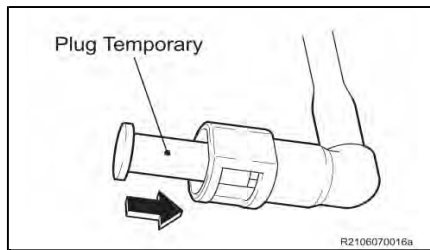
[HINT: push rear of seat in to release latch](#)

6. REMOVE FUEL SUCTION TUBE ASSEMBLY

a. Refer to repair manual instruction to remove the fuel suction tube assembly.

[FA20 FUEL: FUEL PUMP: REMOVAL; 2020 MY 86](#)

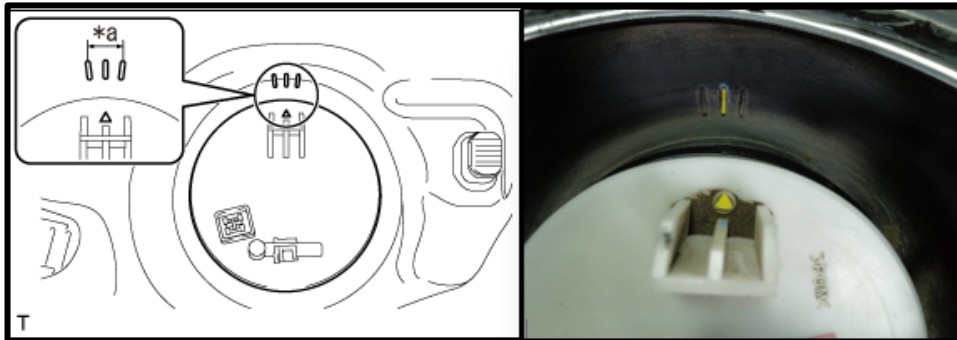
REMOVAL TIP: PLUG TEMPORARY INSTALLATION



To prevent intrusion of foreign matter and fuel flow, install the plug temporary (included in the parts kit) to the fuel tank main tube.

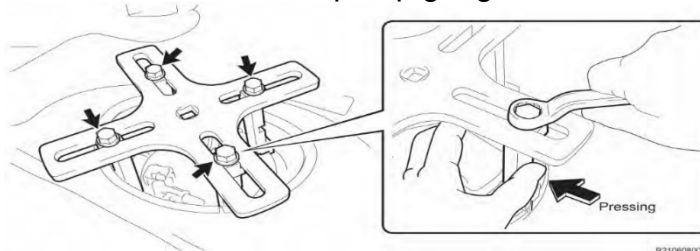
REMOVAL TIP: POSITION MARKS

Remove the fuel pump gauge retainer making sure that the position mark of the fuel suction plate is within the position marks of the fuel tank assembly. If the parts are not positioned properly, fuel suction tube assembly may interfere with the fuel tank assembly and the fuel suction tube assembly may be damaged, causing malfunction of fuel indicator and fuel leak.



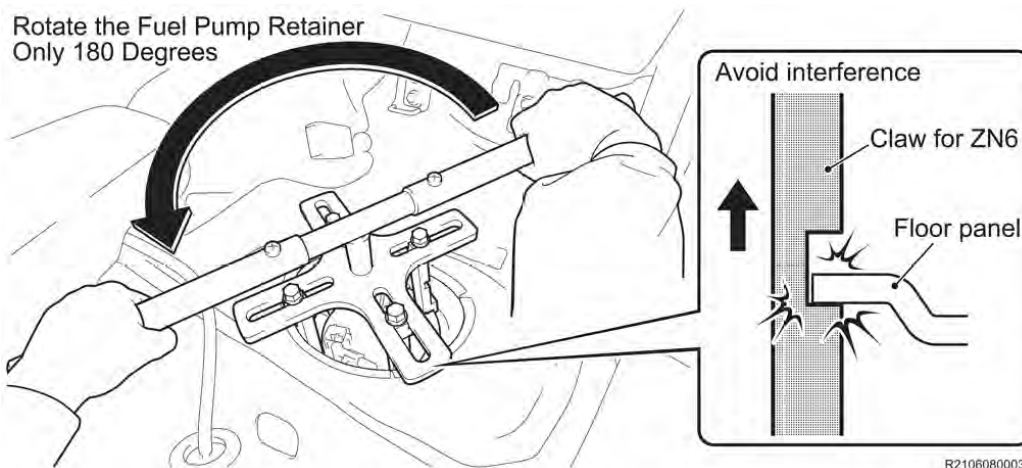
REMOVAL TIP: CLAW SET FOR ZN6

Tighten the 4 bolts while firmly pressing the Claw Set for ZN6 against the rib of the fuel pump gauge retainer.

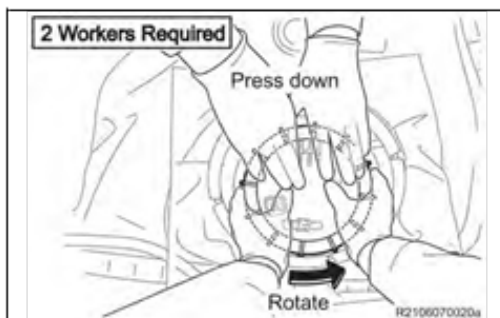


REMOVAL TIP: LOOSENING FUEL PUMP GAUGE RETAINER

To avoid the Claw Set for ZN6 from interfering with the floor panel, slowly turn the SST handle 180 degrees counterclockwise to loosen the fuel pump gauge retainer.



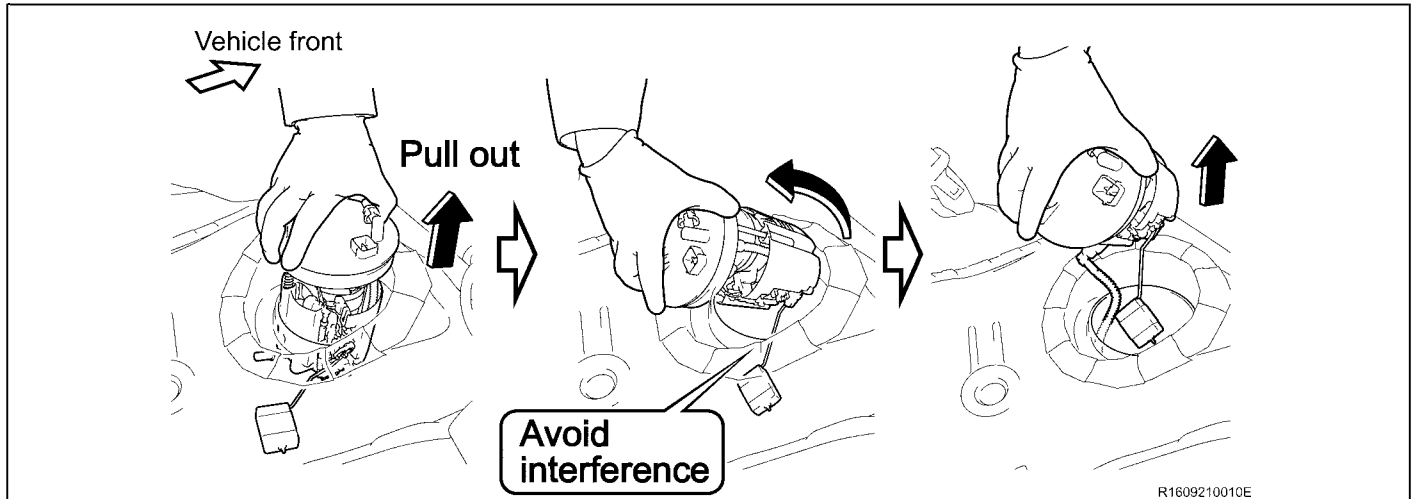
REMOVAL TIP: FUEL PUMP GAUGE RETAINER REMOVAL



One person pushes down the fuel suction tube assembly that will be coming up, and the other person slowly loosens the fuel pump gauge retainer with hands. Otherwise, the parts may not be positioned properly and the fuel suction tube assembly may interfere with the fuel tank assembly. If interference occurs, the fuel suction tube assembly may be damaged, which could cause a malfunction to the fuel indicator and a fuel leak.

REMOVAL TIP: FUEL SUCTION TUBE ASSEMBLY

- **DO NOT** bend the arm of fuel sender gauge assembly.
- **DO NOT** damage the wire harness at edges of service hole when removing the fuel suction tube assembly.



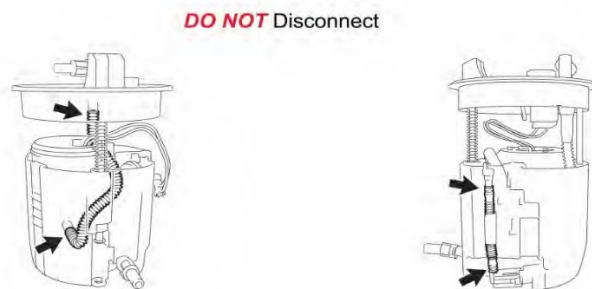
8. DISASSEMBLE FUEL SUCTION TUBE ASSEMBLY

- Refer to repair manual instruction to disassemble the fuel suction tube assembly.

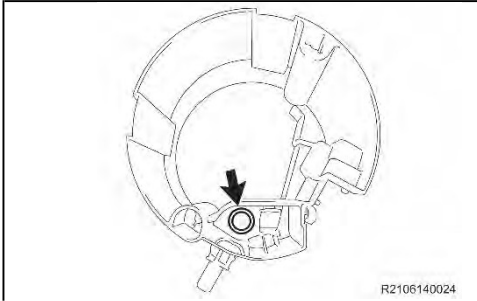
[FA20 FUEL: FUEL PUMP: DISASSEMBLY; 2020 MY 86](#)

DISASSEMBLY TIP: DO NOT DISCONNECT THE HOSE

DO NOT disconnect the hose indicated in the illustration.



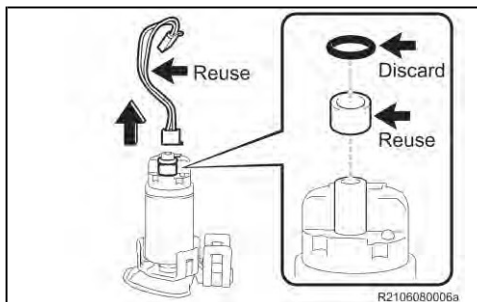
REMOVAL TIP: DO NOT REUSE O-RING



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During disassembly, the O-Ring may remain in the No.1 fuel sub-tank. Be sure to inspect the No.1 fuel sub-tank after removing the fuel pump and remove the O-ring if necessary.

REMOVAL TIP: REUSE FUEL PUMP HARNESS AND SPACER

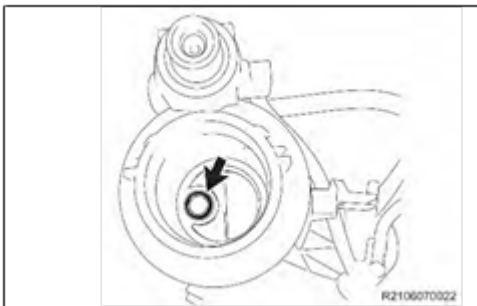


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a. DO NOT discard the fuel pump wire harness and fuel pump spacer as they will be reused.

b. Discard the removed O-ring.

REMOVAL TIP: DO NOT REUSE O-RING



R2106070022

a. During disassembly, the O-ring may remain in the fuel pump housing. Be sure to inspect the fuel pump housing after removing the fuel pump assembly and remove the O-ring if necessary.

b. Discard the removed O-ring.

DISASSEMBLY TIP: DO NOT REMOVE FUEL PRESSURE REGULATOR ASSEMBLY



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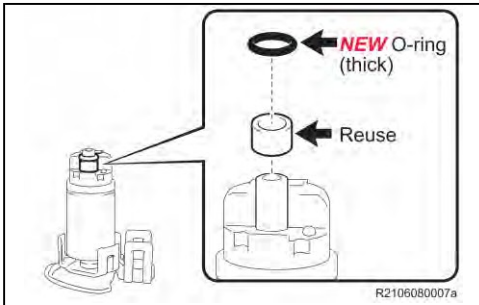
Never remove the fuel pressure regulator assembly from the fuel filter.

8. REASSEMBLE FUEL SUCTION TUBE ASSEMBLY USING NEW FUEL PUMP ASSEMBLY

a. Refer to repair manual instruction to reassemble the fuel suction tube assembly

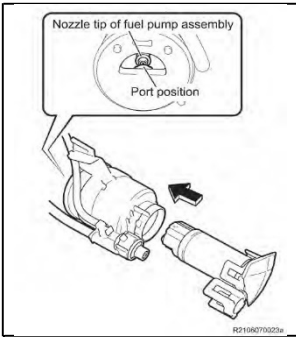
[FA20 FUEL: FUEL PUMP: REASSEMBLY; 2017-2020 MY 86 \[06/2016- \]](#)

REASSEMBLY TIP: DO NOT REUSE FUEL PUMP AND O-RING



Be sure to apply engine oil to a **NEW** O-ring (thick) and install it to the **NEW** fuel pump assembly.

REASSEMBLY TIP: ALIGN HOUSING AND FUEL PUMP



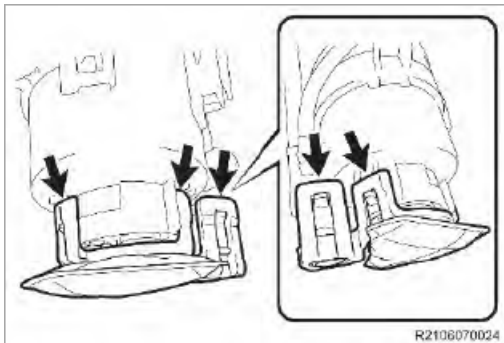
Insert the fuel pump assembly into the fuel pump housing aligning the nozzle tip of the fuel pump assembly with the port position that is inside the fuel pump housing.

REASSEMBLY TIP: FUEL PUMP INSTALLATION



- Align the locations of the 5 claws with the fuel pump laid on its side and push in the parts with both hands until the claws engage with a thump at once, preventing the parts from being pushed backwards.
- If the parts were pushed back, the O-ring may move out of place and cause the fuel pressure to decrease, causing Malfunction Indicator Lamp (MIL) ON and DTC of system too lean. If the claws were not engaged at once and the parts were pushed back, be sure to disassemble the fuel pump and re-start from installation of the O-ring after making sure that the O-ring is not damaged and deformed.

REASSEMBLY TIP: CHECK FUEL PUMP INSTALLATION



Confirm that the 5 claws are firmly engaged

REASSEMBLY TIP: DO NOT REUSE O-RING



Be sure to apply engine oil to a NEW O-ring (thin) and install it to the jet pump.

REASSEMBLY TIP: FUEL TUBE

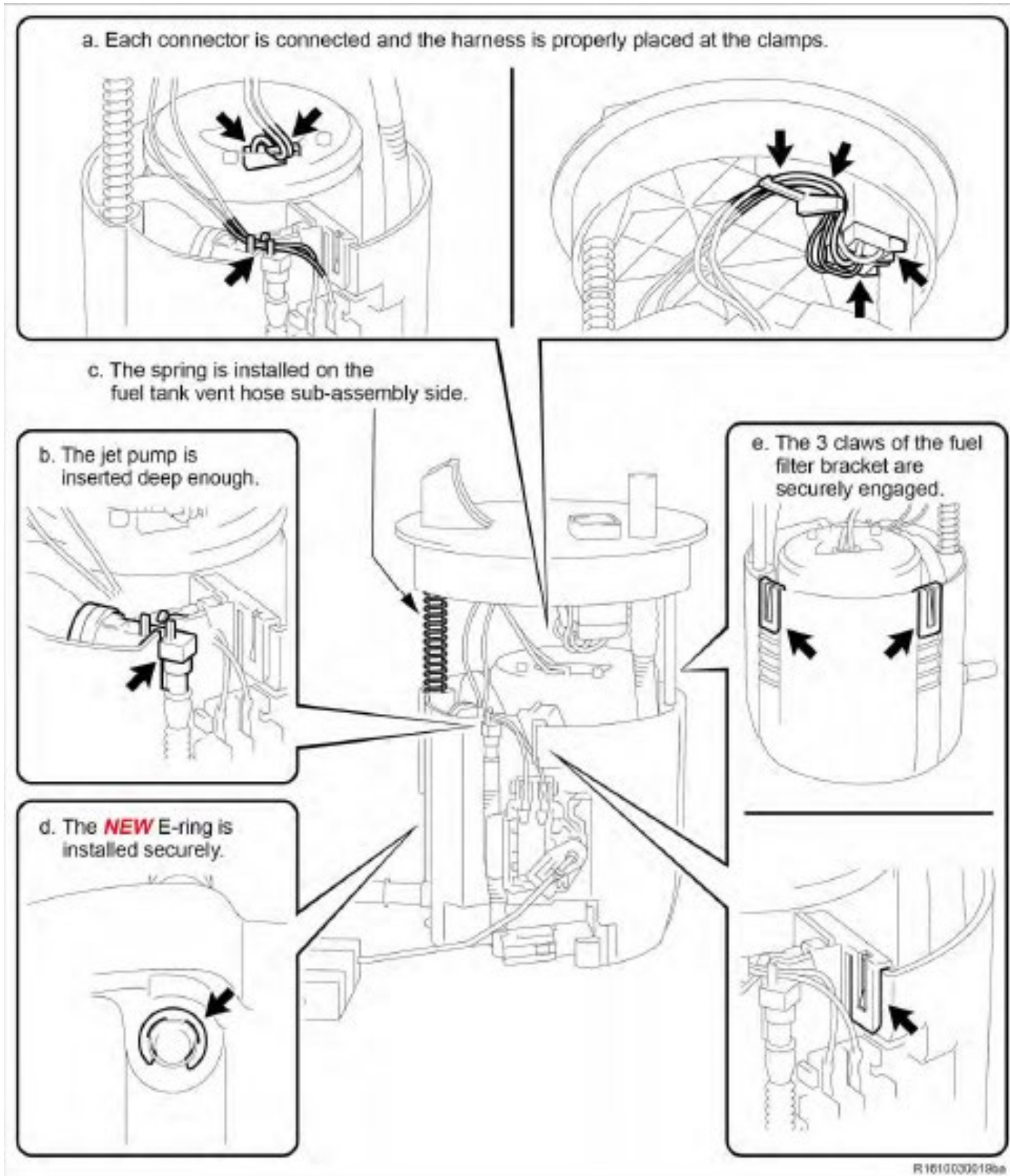


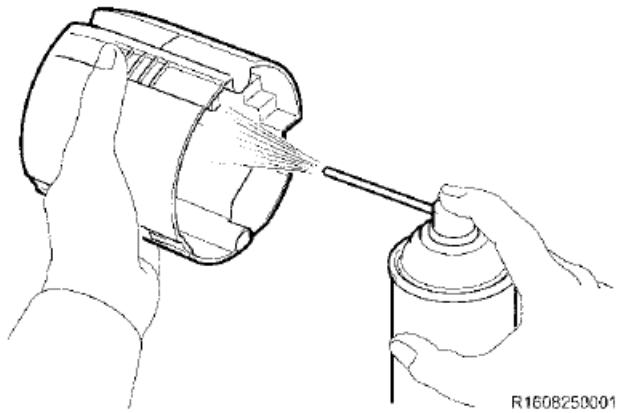
Be sure to pass the 2 fuel hoses under the fuel filter bracket, and be certain to correctly align the upper and lower sections of the fuel suction tube assembly as to not twist the fuel tube.

REASSEMBLY TIP: CHECK IF PROPERLY ASSEMBLED

- a. Confirm that each connector is connected and the harness is properly placed at the clamps.
- b. Confirm that the jet pump is inserted deep enough.
- c. Confirm that the spring is installed on the fuel tank vent hose sub-assembly side.
- d. Confirm that the NEW E-ring is installed securely.

e. Confirm that the 3 claws of the fuel filter bracket are securely engaged.





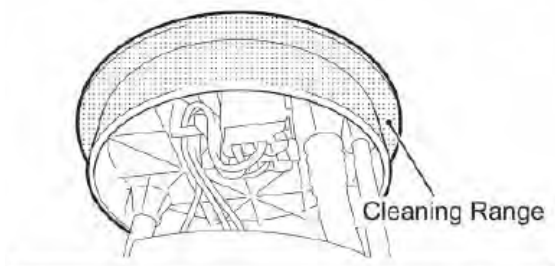
CLEAN No. 1 FUEL SUB-TANK ASSEMBLY
 a. Using brake cleaner, clean the No. 1 fuel sub-tank

9. INSTALL FUEL SUCTION TUBE ASSEMBLY

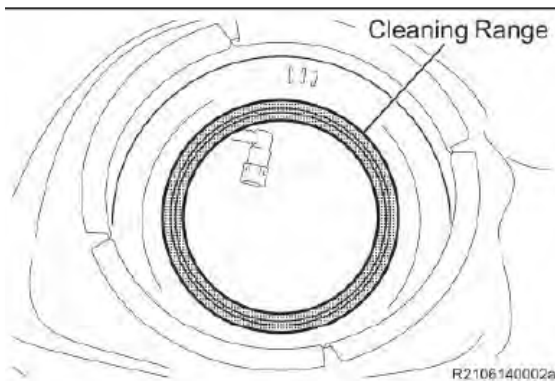
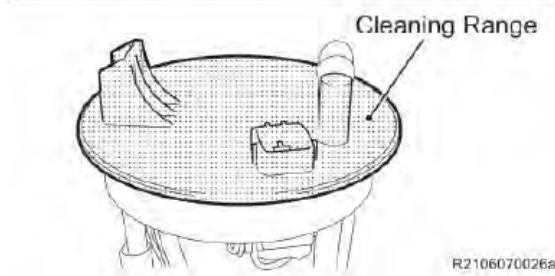
a. Refer to repair manual instruction to reassemble the fuel suction tube assembly.

[FA20 FUEL: FUEL SENDER GAUGE ASSEMBLY: INSTALLATION; 2017-2020 MY 86 \[06/2016-](#)

INSTALLATION TIP: CLEAN FUEL SUCTION PLATE AND FUEL TANK

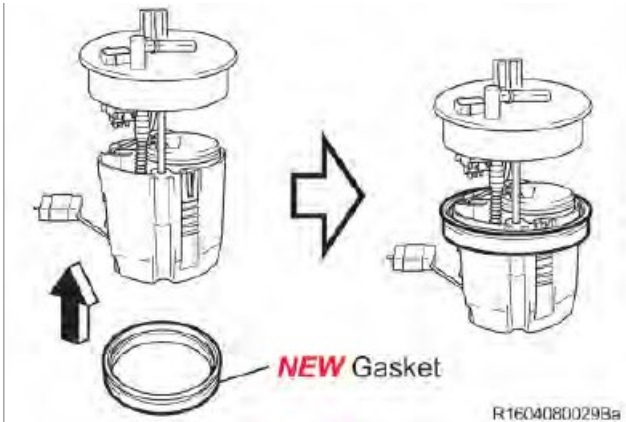


c. Clean the top and bottom surface of the fuel suction tube plate with a clean cloth, otherwise, when tightening the fuel pump gauge retainer, the fuel suction tube assembly may turn together and its components may contact the inside of the fuel tank assembly, resulting in damage of the parts



d. Clean the installation position of the fuel tank assembly gasket with a clean cloth, otherwise, when tightening the fuel pump gauge retainer, the fuel suction tube assembly may turn together and its components may contact the inside of the fuel tank assembly, resulting in damage of the parts.

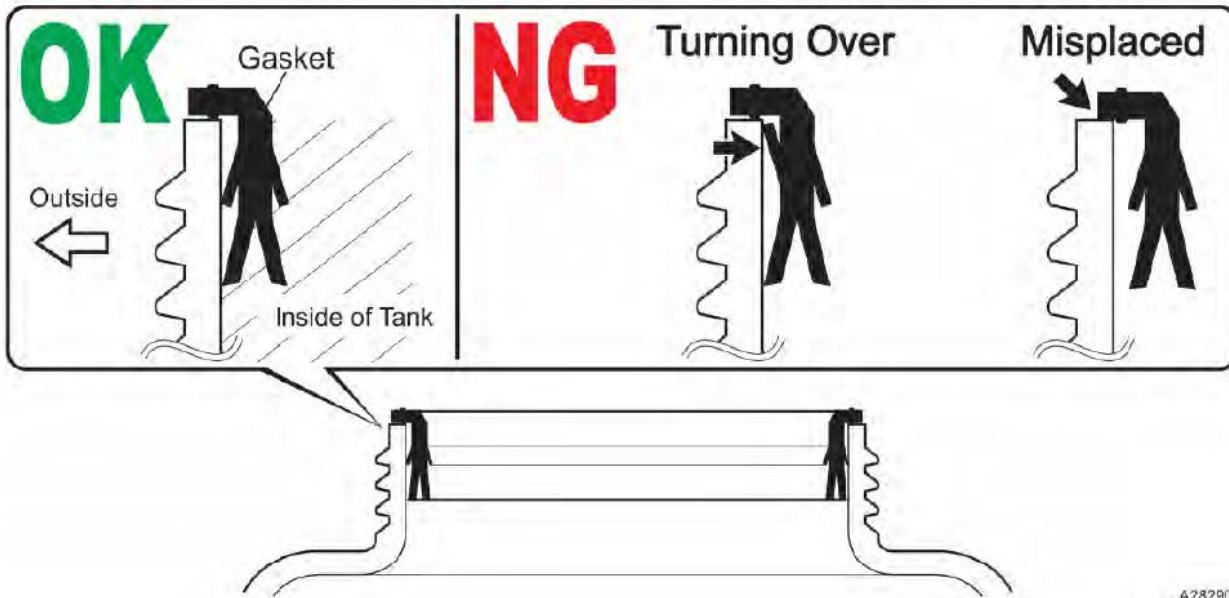
INSTALLATION TIP: TEMPORARY INSTALLATION OF NEW GASKET



Temporarily install the **NEW** gasket to the fuel suction tube assembly side before installing the assembly to the fuel tank. If the gasket is installed to the fuel tank side, it will be harder to install the fuel suction tube assembly.

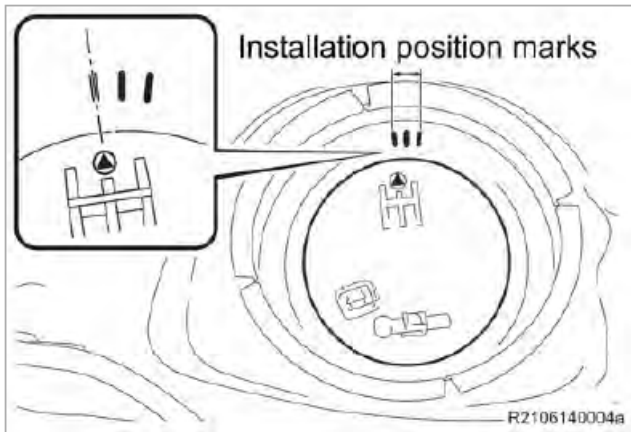
INSTALLATION TIP: PREVENTION OF NEW GASKET MISPLACEMENT

- Insert the fuel suction tube assembly into the fuel tank assembly by performing the removal steps in reverse, and then install the new gasket which was temporarily installed to the fuel suction tube assembly, to the fuel tank assembly.
- To prevent fuel leak, make sure that the gasket is installed without turning over or misplacement at any point.



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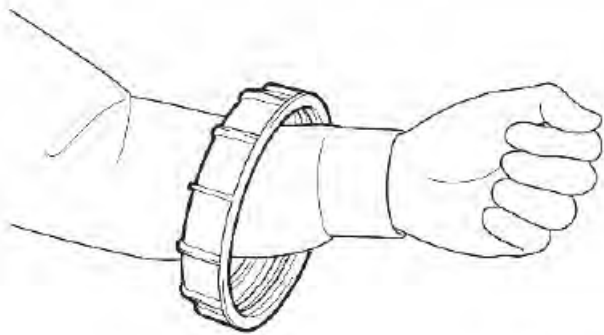
INSTALLATION TIP: FUEL SUCTION TUBE ASSEMBLY ALIGNMENT



Align the position of the fuel suction plate with the left one of the 3 installation position marks as shown in the illustration.

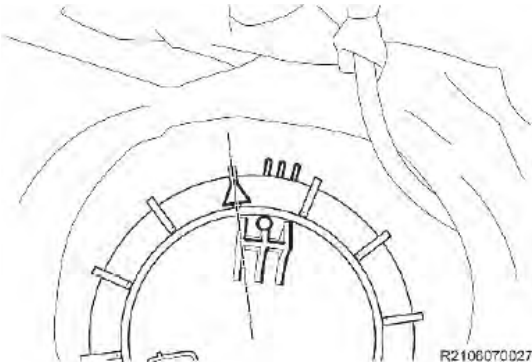
Note: By aligning the position marks this way, when tightening the fuel pump gauge retainer, the fuel suction tube assembly will slightly turn together and its position mark will be within the 3 installation position marks.

INSTALLATION TIP: PUT THE RETAINER AROUND THE ARM



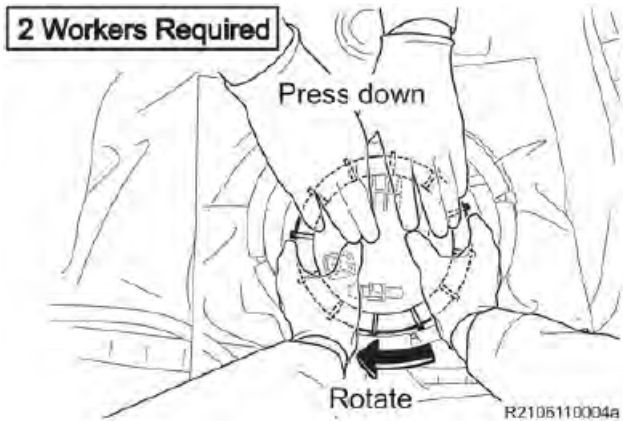
Put the **NEW** fuel pump gauge retainer around the arm beforehand so that it is not necessary to change hands when pressing down the fuel suction plate.

INSTALLATION TIP: ALIGN THE NEW FUEL PUMP GAUGE RETAINER



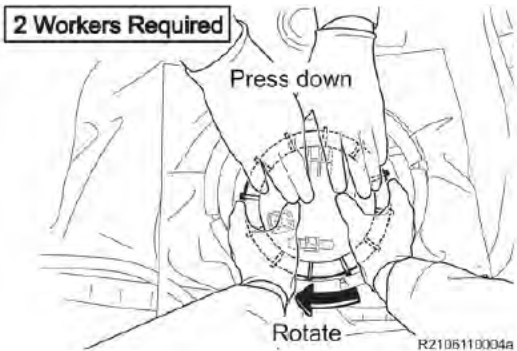
Set the “Δ” mark of the NEW fuel pump gauge retainer to the position shown in the illustration.

INSTALLATION TIP: FUEL SUCTION TUBE ASSEMBLY ALIGNMENT



To avoid the retainer from turning together with the fuel suction tube assembly, one person pushes down the fuel suction tube assembly that will be coming up, and the other person slowly tightens the fuel pump gauge retainer with hands to make about one full turn of the retainer.

REASSEMBLY TIP: FUEL PUMP INSTALLATION



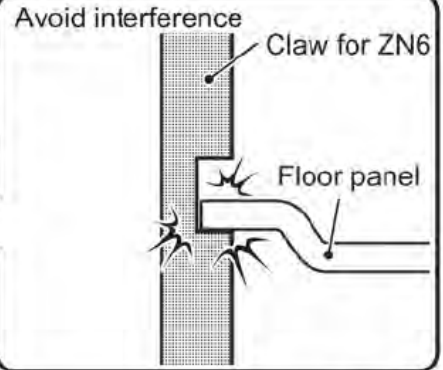
To avoid the retainer from turning together with the fuel suction tube assembly, one person pushes down the fuel suction tube assembly that will be coming up, and the other person slowly tightens the fuel pump gauge retainer with hands as tight as possible.

INSTALLATION TIP: FUEL SUCTION TUBE ASSEMBLY ALIGNMENT

One person pushes down the fuel suction tube assembly that will be coming up, and the other person slowly turns the fuel pump gauge retainer to tighten it avoiding the Claw Set for ZN6 from interfering with the floor panel.

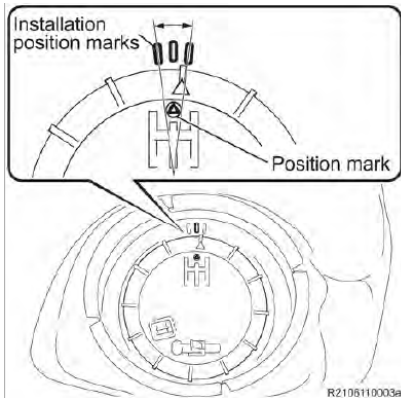
2 Workers Required

85 N*m
(867 kgf*cm, 63 ft.*lbf)



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INSTALLATION TIP: POSITION MARK CHECK



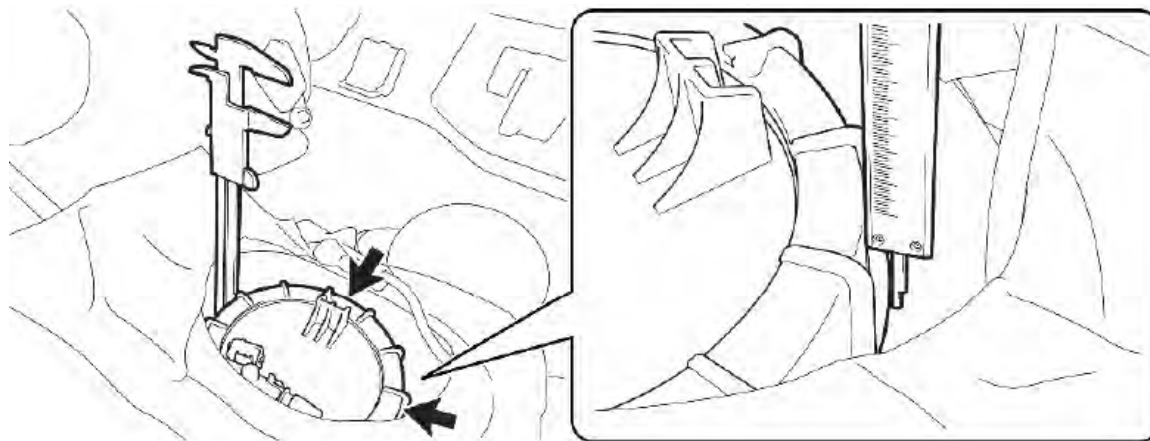
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Check that the position mark of the fuel suction plate is within the 3 installation position marks of the fuel tank assembly as shown in the illustration.

Note: If the position mark of the fuel suction plate is not within the 3 installation position marks, reassemble the parts.

INSTALLATION TIP: ENGAGEMENT CHECK

Using a Vernier caliper, measure the distance from the top surface of the fuel tank assembly to the flange surface of the fuel pump gage retainer at the 3 positions shown in the illustration, and make sure that the difference is within about 3mm.



R2106070028

10. INSTALL FUEL SUCTION ASSEMBLY TUBE

- a. Refer to repair manual instruction to reassemble the fuel suction tube assembly.

[Engine / Hybrid System: FA20 FUEL: FUEL PUMP: INSTALLATION; 2020 MY 86](#)

11. INSTALL REAR SEAT ASSEMBLY

Refer to repair manual instruction on [SEAT: REAR SEAT ASSEMBLY: INSTALLATION; 2017 – 2020 MY 86 \[06/2016 -\]](#)

12. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

13. INSTALL REMOVED FUEL

- a. If fuel was removed from the tank prior to disassembly, reinstall the originally recovered fuel into the tank.



14. CHECK FOR DTC'S

- a. Using a Techstream, perform a Health Check to check for Diagnostic Trouble Codes.

Note: *This Safety Recall covers only the replacement of the fuel pump and associated parts. It does not cover the diagnosis or replacement of any other parts on the vehicle.*

◀ VERIFY REPAIR QUALITY ▶

- Confirm no fuel leaks from vehicle
- Confirm any fuel drained from the vehicle has been reinstalled
- Test drive to confirm normal operation while under load
- Confirm no DTC's are present
- Confirm that all parts listed in the Components Diagrams have been properly installed on the vehicle

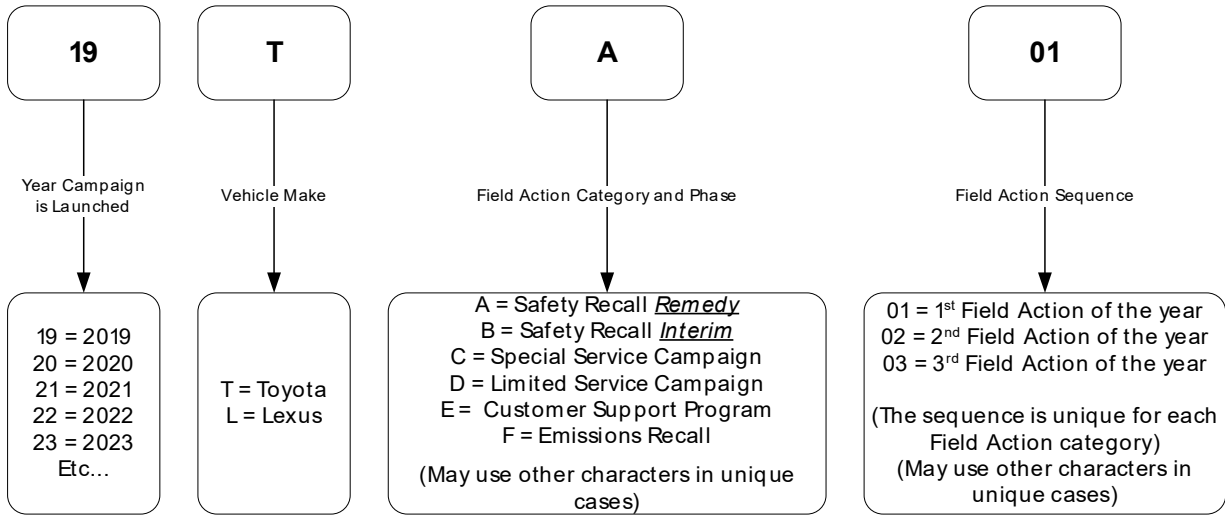
VIII. APPENDIX

A. PARTS DISPOSAL

In accordance with Federal law, please make sure all recalled parts (original parts) removed from the vehicle are disposed of in a manner in which they will not be reused, **unless requested for parts recovery return.**

B. CAMPAIGN DESIGNATION DECORDER

19TA01



Examples:

19TA01 = Launched in 2019, Toyota, Safety Recall Remedy Phase, 1st Safety Recall Launched in 2019

20TC02 = Launched in 2020, Special Service Campaign, 2nd Special Service Campaign Launched in 2020

21TE05 = Launched in 2021, Customer Support Program, 5th Customer Support Program Launched in 2021