



SERVICE BULLETIN

Classification:

FE18-001a

Reference:

NTB18-024a

Date:

September 10, 2018

2016-2019 TITAN XD; STAGE 1 AND STAGE 2 FUEL FILTER ELEMENT REPLACEMENT

This bulletin has been amended. Changes were made on page 4, 6, and 12.
Please discard previous versions of this bulletin.

APPLIED VEHICLES: 2016-2019 Titan XD (A61)
APPLIED ENGINE: Cummins 5.0L Diesel

SERVICE INFORMATION

When replacing the Stage 1 or Stage 2 fuel filter elements, it is important not to damage the new fuel filter elements, inner seals, or O-rings. Refer to the Service Procedure section of this bulletin or the Electronic Service Manual (ESM), section **ENGINE> FUEL SYSTEM> CUMMINS 5.0L> REMOVAL AND INSTALLATION** to ensure the fuel filter elements are being replaced correctly.

P008A (LOW FUEL PRESSURE CONTROL SYSTEM) and/or a no start condition may occur if the procedure is not followed properly.

Nissan Bulletins are intended for use by qualified technicians, not 'do-it-yourselfers'. Qualified technicians are properly trained individuals who have the equipment, tools, safety instruction, and know-how to do a job properly and safely. NOTE: If you believe that a described condition may apply to a particular vehicle, DO NOT assume that it does. See your Nissan dealer to determine if this applies to your vehicle.

SERVICE PROCEDURE

IMPORTANT: Follow all warnings and cautions in the ESM when working with diesel fuel and high-pressure diesel fuel lines.

NOTE: If replacing only the Stage 2 fuel filter element, go to page 7.

Stage 1 Fuel Filter Element Replacement

NOTE: Exploded view of Stage 1 filter assembly for reference.

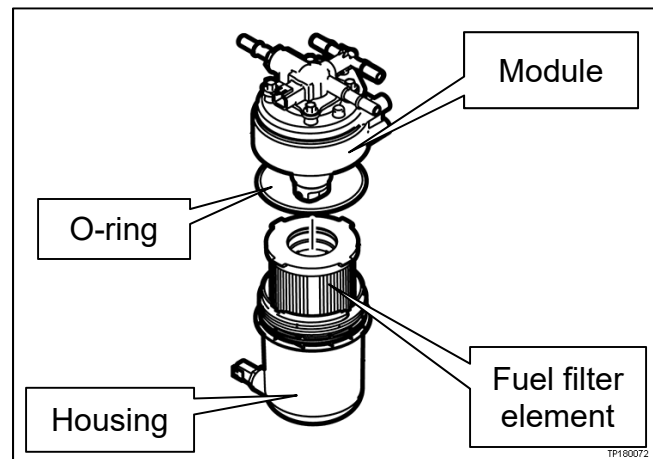


Figure 1

1. Disconnect the left and right side batteries.
 - Disconnect the negative terminal first, then the positive terminal.
2. Clean the area around the fuel filter (Stage 1) to prevent dirt or debris from entering the fuel filter housing (Stage 1).

3. Drain the fuel filter housing (Stage 1).
 - a. Place a catch container under the filter.
 - b. Turn the water-in-fuel drain valve counterclockwise $\frac{1}{4}$ turn.
 - c. Drain the filter housing until fuel is reduced to a trickle.



Figure 2

4. Close the water-in-fuel drain by turning the water-in-fuel drain valve clockwise $\frac{1}{4}$ turn.

5. Disconnect the harness connector from the water-in-fuel sensor.

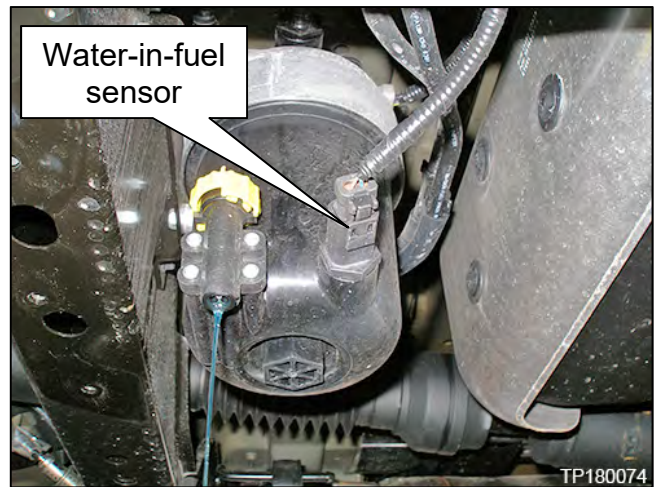


Figure 3

6. Remove fuel filter housing (Stage 1) protector.
 - Fuel filter housing (Stage 1) protector is held on with 3 bolts, circled in Figure 4.
7. Turn/twist the fuel filter housing (Stage 1) counter-clockwise to remove it from the module.
 - A socket can be used on the hex on the bottom of the fuel filter housing (Stage 1) to assist in removal.

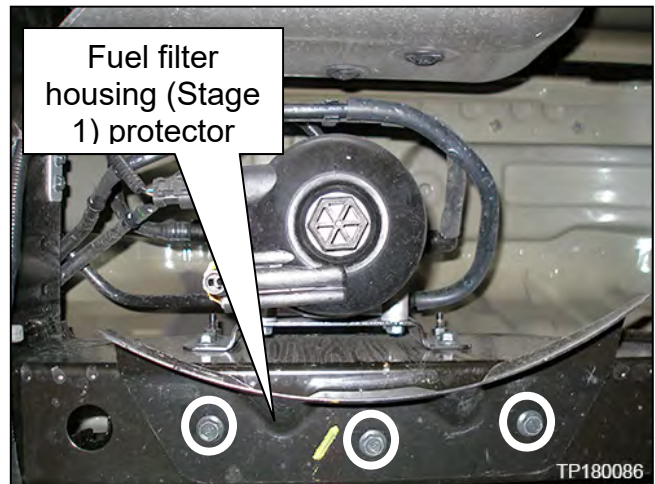


Figure 4

IMPORTANT: If the fuel filter element stays attached to the module (Figure 6), do not bend or exert a side force on the filter element when removing. This may damage the module and result in a no-start.

- Only remove the filter element by twisting and pulling directly away from the module simultaneously.

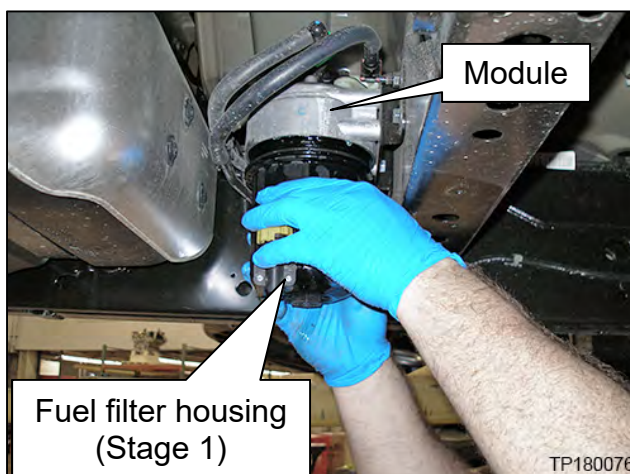


Figure 5

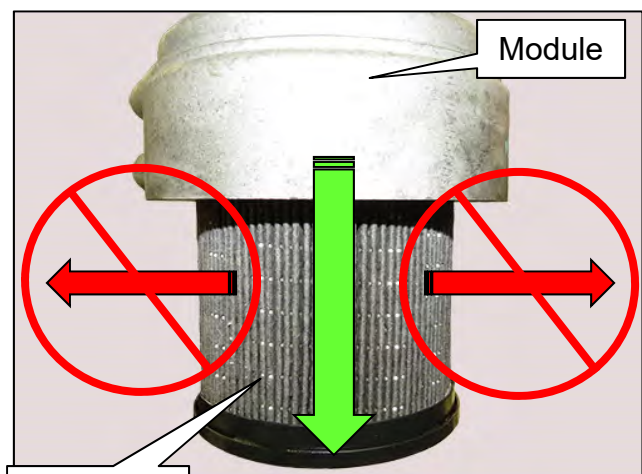
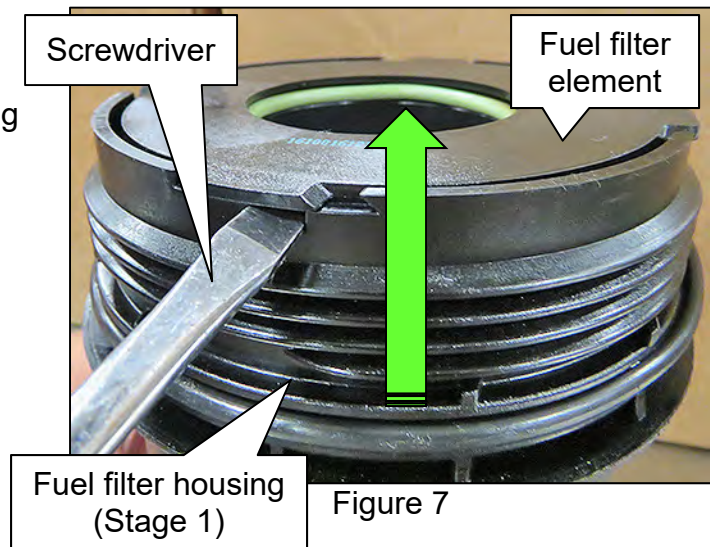


Figure 6

8. Remove the fuel filter element by lifting it straight out of the fuel filter housing.

NOTE:

- It may be necessary to use a flathead screwdriver in the slots provided to remove the fuel filter element from the housing.



9. Remove and discard the O-ring on the fuel filter housing (Stage1).

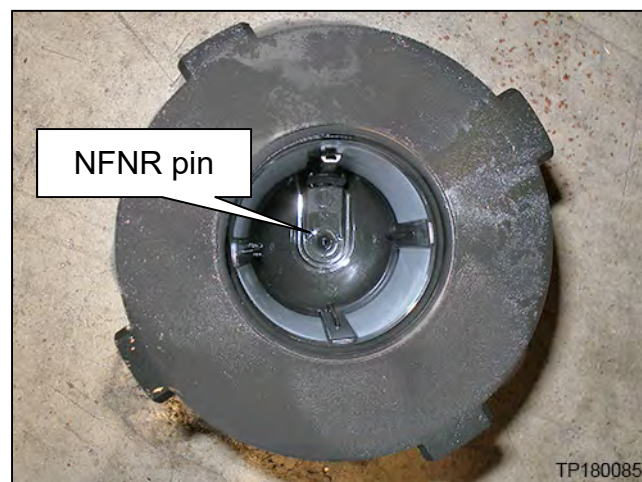


Inspection

10. Inspect the fuel filter housing (Stage 1) and module for cracks or passage blockages. Replace if damage is found.

11. Inspect the new fuel filter element (Stage1) for the No Filter No Run (NFNR) pin. Replace the filter element if the pin is damaged or missing.

NOTE: A broken/sheared NFNR pin can cause the pump to operate without supplying fuel pressure.



Installation

12. Lubricate the inner seal with clean petroleum jelly or white lithium grease.
13. Install new O-ring on fuel filter housing (Stage1).
14. Lubricate new O-ring with clean petroleum jelly or white lithium grease.

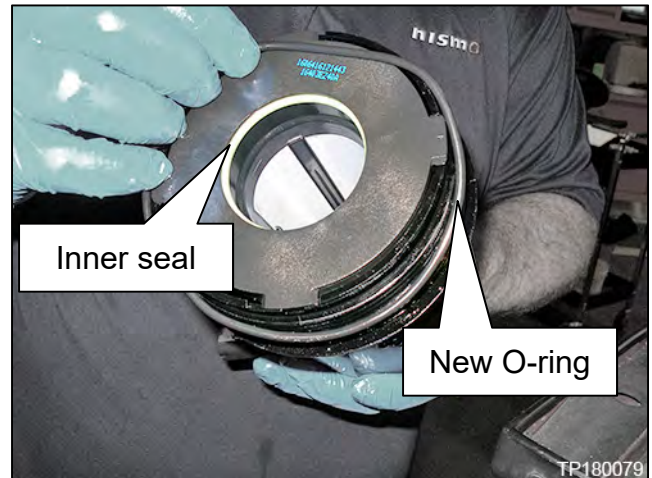


Figure 10

15. Install the fuel filter element into the fuel filter housing (Stage 1) and make sure the four tabs are properly seated into the four slots.



Figure 11

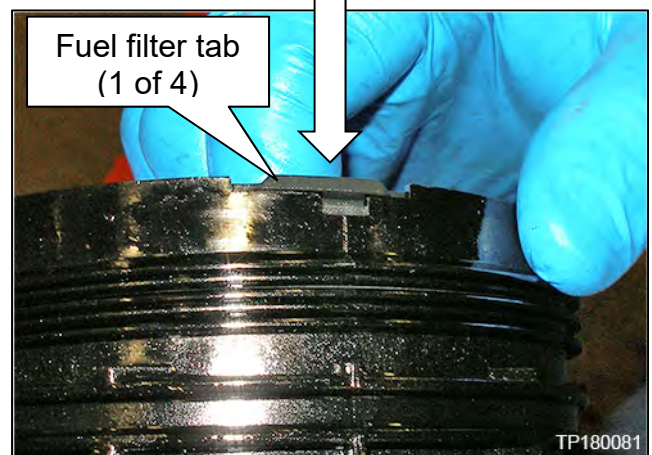


Figure 12

16. Install the fuel filter housing (Stage 1) onto the module and torque to: 25 N·m (2.6 kg-m, **18 ft-lb**)

- A socket must be used on the hex on the bottom of the fuel filter housing (Stage 1) to assist in proper installation.



Figure 13

17. Reinstall the fuel filter housing (Stage 1) protector.

NOTE: If the stage 2 fuel filter element will also be replaced, skip to the next page, otherwise, continue to step 18.

18. Connect the left and right side batteries.

19. Reset customer settings that were lost when the batteries were disconnected.

- For a listing of systems that may lose settings or memory when disconnecting the 12V battery, refer to the ESM section **ELECTRICAL POWER CONTROL > POWER SUPPLY, GROUND CIRCUIT ELEMENTS > BASIC INSPECTION > INSPECTION AND ADJUSTMENT > ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL > Special Repair Requirements.**
 - This list often includes items such as audio, HVAC, power windows, clock, etc.

20. Prime the fuel system.

- a. Turn the ignition ON for 90 seconds to prime the fuel system.
- b. After 90 seconds, crank the engine for NO MORE than 30 seconds to start the engine.
 - If the engine does not start, verify the following:
 - Confirm fuel level is not empty.
 - Water-in-fuel drain valve is closed.
 - Stage 1 filter housing shell is fully seated on the module.
 - Stage 1 shell O-ring is properly installed and not damaged.
 - Stage 1 fuel filter element “No Filter/No Run” pin is not damaged (see Figure 9 on page 4).
 - Repeat step 20a and 20b.
- c. Once engine does start, it may operate erratically and with increased noise for a few minutes. This is a normal condition as air is being removed from the fuel system.

CAUTION: Repeated dry priming may damage the filter assembly and result in no-start.

21. Operate the engine and check for leaks.

Stage 2 Fuel Filter Element Replacement

NOTE: Exploded view of Stage 2 filter assembly for reference.

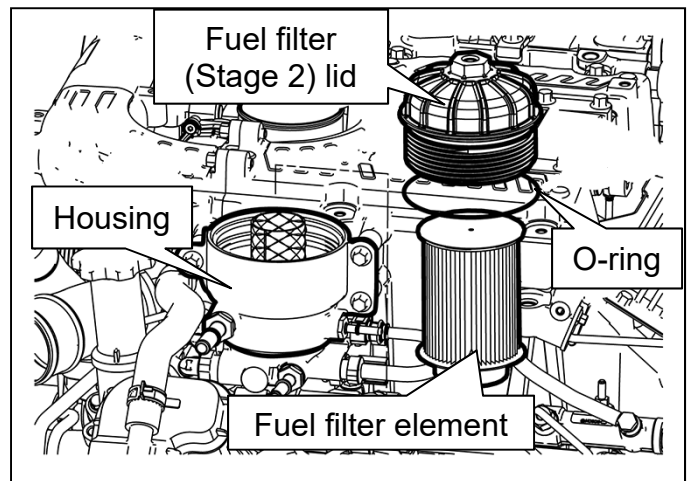


Figure 14

1. Disconnect the left and right side batteries if not already completed.
 - Disconnect the negative terminal first, then the positive terminal.

2. Disconnect MAF sensor connector.

3. Disconnect the “turbocharger compressor intake pressure/temperature sensor” (pressure/temperature sensor).

4. Clean the area around the fuel filter (Stage 2).

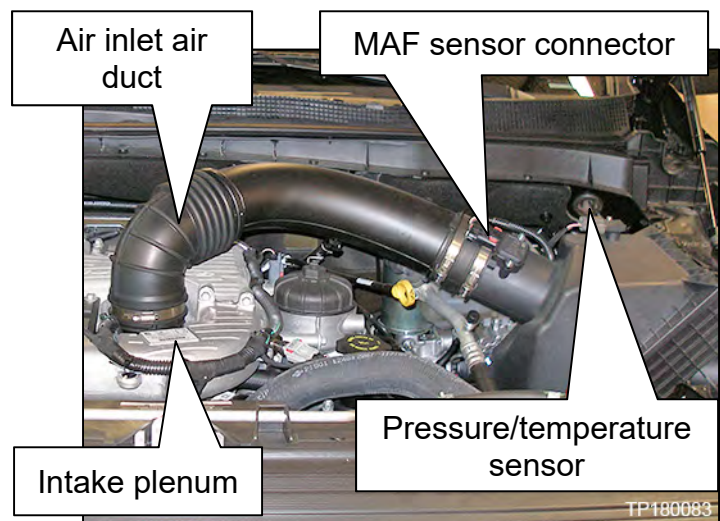


Figure 15

5. Remove the air cleaner lid and the air inlet air ducts from intake plenum.

CAUTION: If step 5 is not performed, the fuel filter cannot be installed correctly and will likely damage the fuel filter inner seal and can cause DTCs to set and/or a no-start condition.

6. Cap or wrap the air inlet ducts with suitable material to avoid dirt or contaminants from entering the air inlet system or engine.

NOTE: Remove the lid slowly to avoid fuel spillage.

7. Remove the fuel filter (Stage 2) lid from the fuel filter housing (Stage 2).
 - a. Twist/screw counterclockwise to remove.
 - A socket can be used on the hex on the top of the fuel filter (Stage 2) lid to assist in removal.
 - b. Lift straight up and then out of the fuel filter housing.

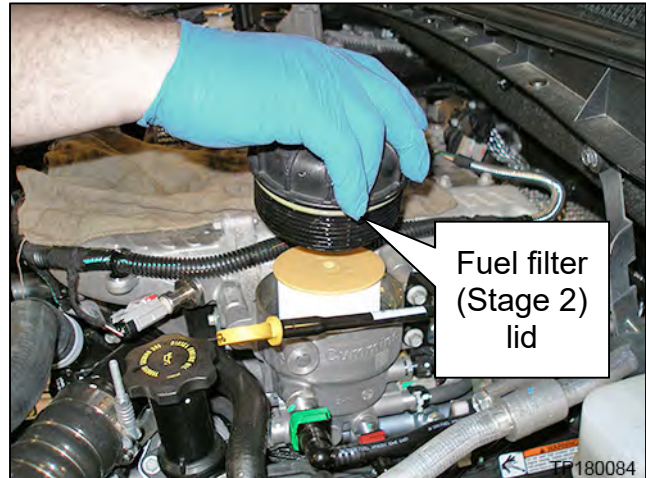


Figure 16

CAUTION: The fuel filter element will come out with the lid. Do not reinstall the new stage 2 fuel filter element into the lid.



Figure 17

8. Inspect old fuel filter element to verify the inner seal is present. Remove inner seal from inside of the fuel filter housing (Stage 2) (Figure 21) if inner seal is missing as shown in Figure 19.

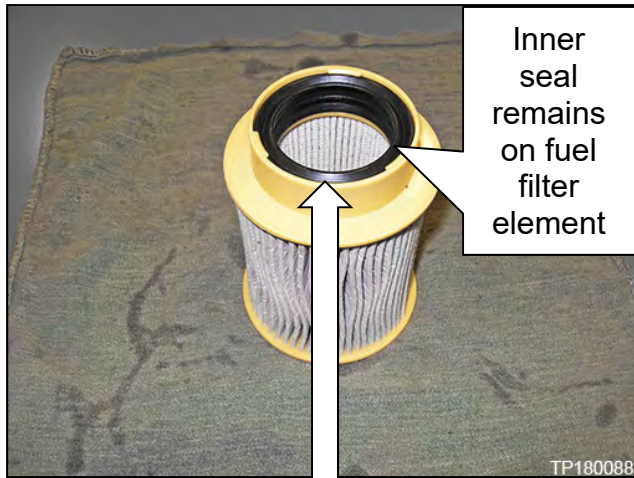


Figure 18

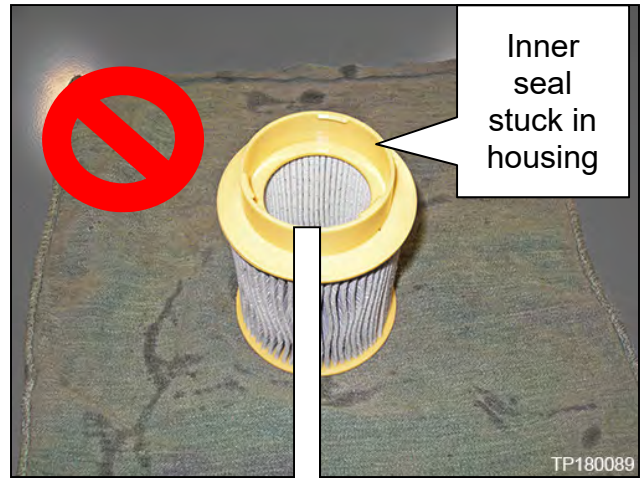


Figure 19

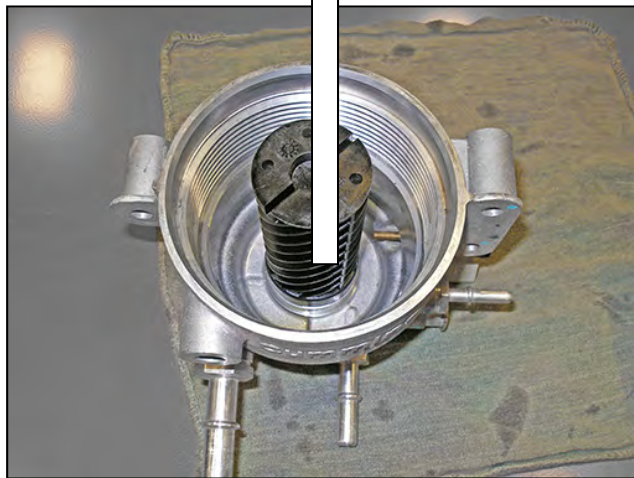


Figure 20

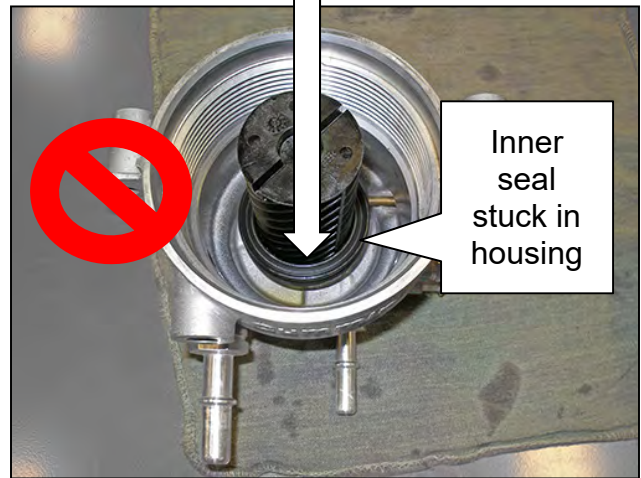


Figure 21

9. Remove and discard the sealing O-ring from the fuel filter (Stage 2) lid.



Figure 22

Inspection

10. Inspect the (Stage 2) fuel filter housing and cover for cracks, passage blockages, or other damage. Replace if damage is found.

Installation

11. Install a new O-ring on the fuel filter (Stage 2) lid.
12. Lubricate the O-ring with clean petroleum jelly or white lithium grease.



Figure 23

13. Lubricate the inner seal on the fuel filter element (Stage 2) with clean petroleum jelly or white lithium grease.



Figure 24

14. Install the fuel filter element (Stage 2) onto the standpipe in the fuel filter housing (Stage 2).

IMPORTANT:

- Do NOT install the fuel filter element into the lid first (Figure 26).
- Be sure the filter element is seated in the housing by pushing downward on the top of the element. If the fuel filter element (Stage 2) is not fully seated in the housing after installation, the engine can set a P008A, and/or experience a crank / no start.



Figure 25



Figure 26

15. Install the fuel filter (Stage 2) lid and torque to:

25 N·m (2.6 kg-m, **18 ft-lb**).

- A socket must be used on the hex on the top of the fuel filter (Stage 2) lid for proper installation.

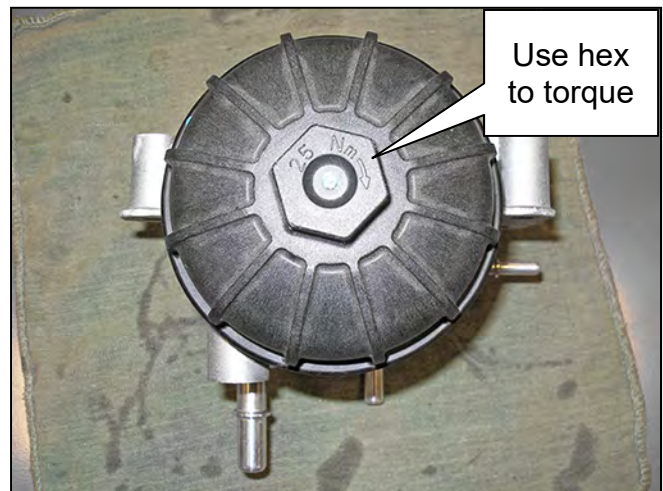


Figure 27

16. Connect the left and right side batteries.

17. Reset customer settings that were lost when the batteries were disconnected.

- For a listing of systems that may lose settings or memory when disconnecting the 12V battery, refer to the ESM section **ELECTRICAL POWER CONTROL > POWER SUPPLY, GROUND CIRCUIT ELEMENTS > BASIC INSPECTION > INSPECTION AND ADJUSTMENT > ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL > Special Repair Requirements**.
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18. Prime the fuel system.

- a. Turn the ignition ON for 90 seconds to prime the fuel system.
- b. After 90 seconds, crank the engine for NO MORE than 30 seconds to start the engine.
 - If the engine does not start, verify the following:
 - Confirm fuel level is not empty.
 - Water-in-fuel drain valve is closed.
 - Stage 1 filter housing shell is fully seated on the module and Stage 2 cap is properly seated on the module.
 - Stage 1 shell O-ring and Stage 2 cap O-ring are properly installed and not damaged.
 - Stage 1 fuel filter element “No Filter/No Run” pin is not damaged (see Figure 9 on page 4).
 - Stage 2 fuel filter element seal (at bottom of element) is not damaged (seal can be damaged if element is installed incorrectly). (See Figure 18 on page 9).
 - Repeat step 18a and 18b.
- c. Once engine does start, it may operate erratically and with increased noise for a few minutes. This is a normal condition as air is being removed from the fuel system.

CAUTION: Repeated dry priming may damage the filter assembly and result in no-start.

19. Operate the engine and check for leaks.

IMPORTANT: It is possible DTCs may be stored after fuel filter element replacement due to air introduced in the system. Make sure to run the engine until air is purged and use CONSULT-III plus (C-III plus) to clear any stored codes.

