



Ford F-59 CNG HP Fuel Filter Bowl & Bleed Valve Retrofit

Affected Vehicles	<p>QTY: 800 MY2019 Ford F-59 CNG package vans</p> <ul style="list-style-type: none"> ▪ UPS Job # 20-26 P80 / UPS Job # 20-27 P100 / UPS Job # 20-28 P120 ▪ UPS Package Car Ranges: 170855 – 170984 199419 – 199768 834055 – 834162 834579 – 834790
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Introduction

Agility Fuel Solutions LLC, a subsidiary of Hexagon Agility Inc. (Hexagon Agility®), has redesigned the CNG high-pressure (HP) fuel filter bowl to incorporate a bleed valve to facilitate fuel system depressurization.

RECOMMENDED: Install this retrofit kit at the regular HP fuel filter element replacement interval.

Hexagon Agility® has created this informational and instructional document for retrofit kit installation.

Warning Statements Used in this Bulletin

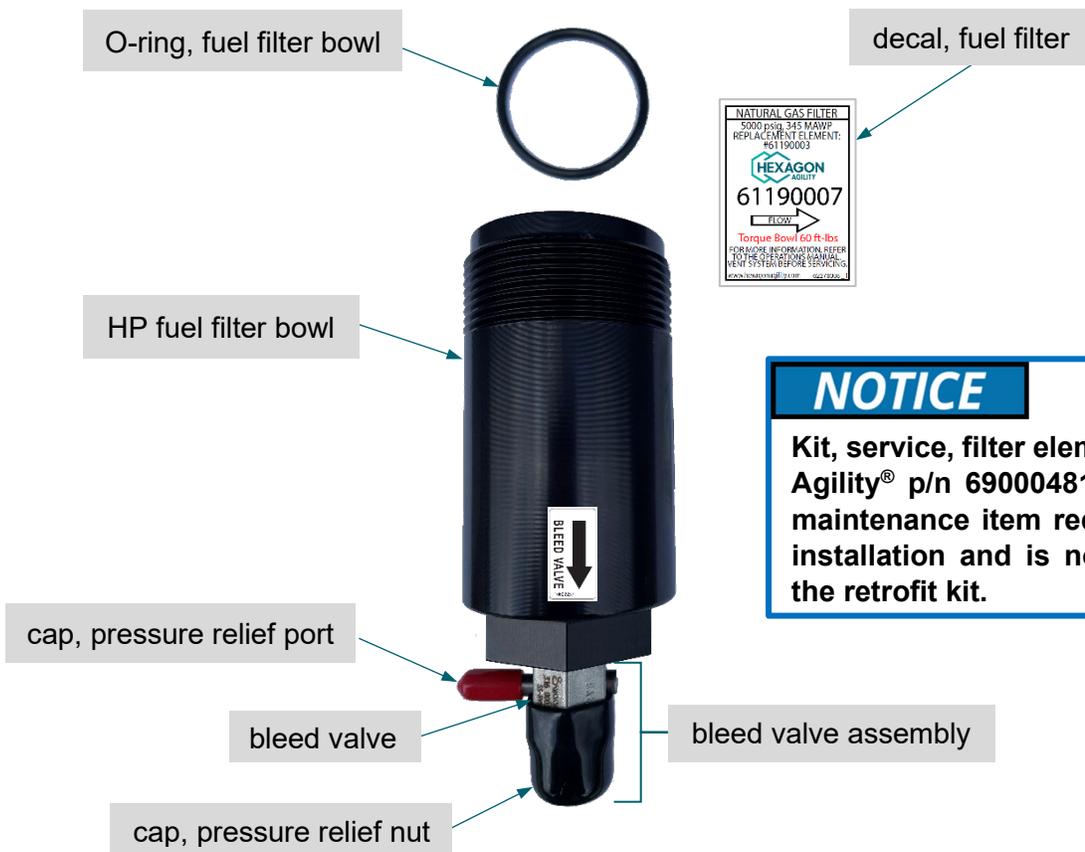
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WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- 
NOTICE is used to address practices not related to physical injury, such as best practices or tips to help an operation or procedure go smoothly and prevent equipment damage.
- 
CRITICAL CHARACTERISTIC – Product feature directly affects:
 - Safety of vehicle users, people nearby and maintenance personnel, or
 - Regulatory compliance.
- 
MANUFACTURING CHARACTERISTIC –
 - A product feature solely used to improve manufacturability or maintain process control.
 - A process parameter or step that has a significant effect on achieving a Critical Characteristic or Significant Characteristic, or maintaining material identification/traceability.

Required Tools and Materials

Item	Purpose
safety glasses	eye protection
7/16-in wrench	tighten bleed valve pressure relief nut
11/16-in wrenches (QTY: 2)	remove and install fuel system fasteners and fittings
11/16-in crowfoot wrench	torque bleed valve
55 mm crowfoot wrench	remove and install HP fuel filter bowl
torque wrench	accurately tighten fuel system fittings, fasteners, and components
11/16-in crowfoot wrench	use with torque wrench to tighten bleed valve
leak detection fluid – Swagelok® Snoop® or UPS equivalent Cantesco® Formula 365	perform leak test
shop rags	clean fuel system components before and after repair
O-ring lubricant	lubricate O-ring for proper seating, seal, and protection
1/4-in allen wrench	remove high-pressure filter drain plug

Supplied Components and Required Parts

Part Number	Description	QTY
69000538	Kit, filter, bowl, CNG, HP fuel, bleed valve	1



NOTICE

Kit, service, filter element (Hexagon Agility® p/n 69000481) is a regular maintenance item required for this installation and is not included in the retrofit kit.

NOTICE

If any parts are missing or unusable, contact Hexagon Agility® Customer Care and Technical Services (CTS) for replacement.

Warranty Information

This procedure is covered under the provisions of the fuel system warranty.

1. Vehicle Preparation

⚠ WARNING Set emergency brake and place wheel chocks in front of and behind tires.

⚠ WARNING Wear approved personal protective equipment (PPE) including safety glasses.

2. Depressurization Procedure

⚠ WARNING Fuel lines must be depressurized before servicing fuel system components.

NOTICE Vehicle will be immobile after depressurization; plan accordingly.

1. Close driver side (DS) cylinder manual valve (1). **FIGURE 2-1**

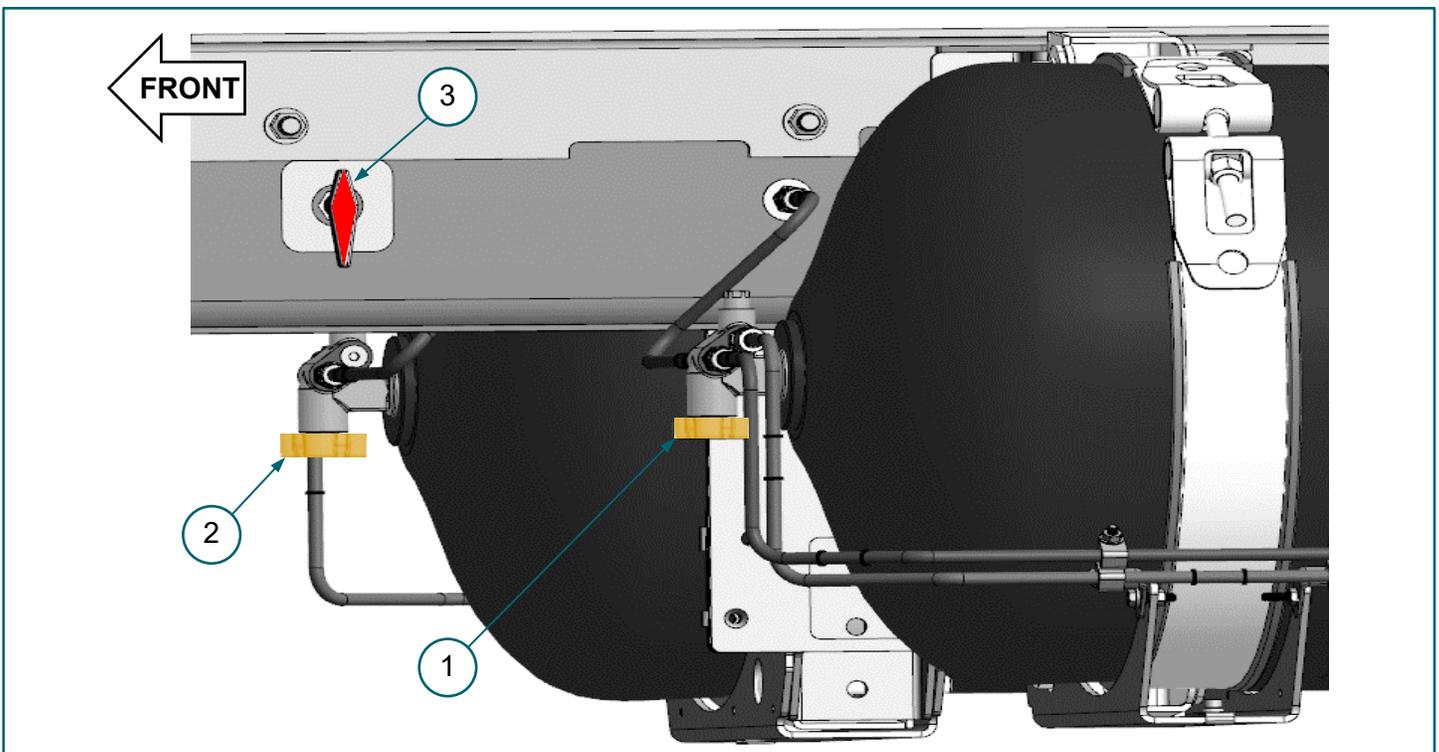


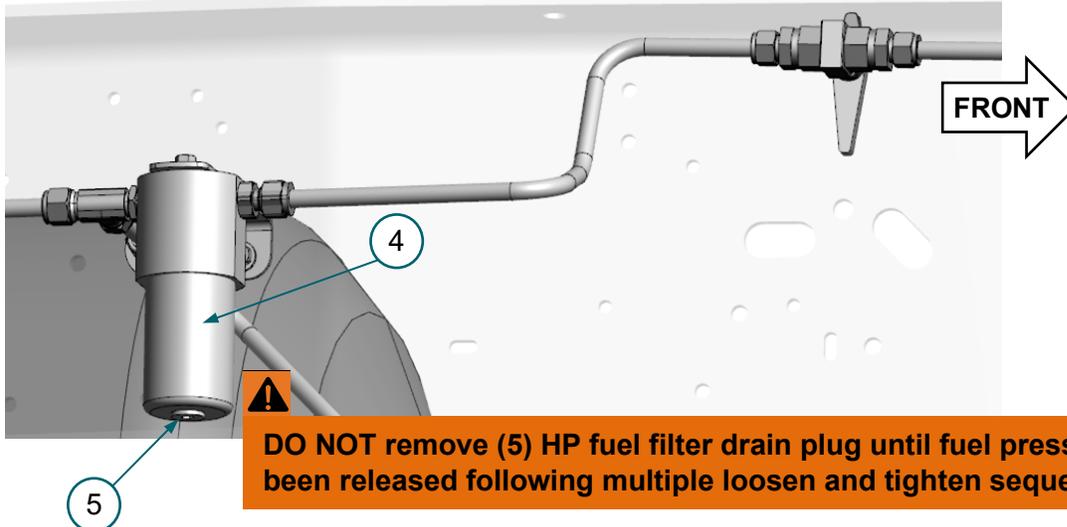
FIGURE 2-1. (1) DS manual cylinder valve, (2) PS manual cylinder valve, (3) 1/4-turn manual shutoff valve

2. Close passenger side manual valve (2). **FIGURE 2-1**
3. Close 1/4-turn manual shutoff valve (3). **FIGURE 2-1**
4. Start engine and idle until engine stalls.
5. Attempt to start engine again.
 - a. If engine starts, allow engine to idle until it stalls.
 - b. Repeat Step 5 until engine fails to start.

⚠ WARNING

Step 6 must be performed slowly and incrementally to abrade the HP fuel filter drain plug O-ring to allow a safe and gradual release of fuel pressure. Do not completely remove drain plug at this time; retighten and loosen plug as directed until the sound of escaping fuel is audible.

6. Purge remaining fuel pressure by using a 1/4-in Allen wrench to slowly loosen (4) high-pressure (HP) fuel filter (5) drain plug 1/2-turn to 3/4-turn and retighten drain plug. Repeat loosen-tighten sequence until sound of escaping fuel is heard. FIGURE 2-2

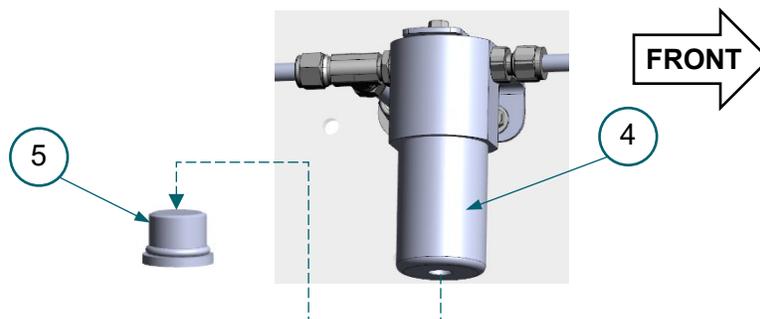


⚠ CAUTION

HP fuel filter bowl may contain fluid. Collect fluid in a container and dispose of fluid in compliance with authority having jurisdiction (AHJ) or organizational guidelines.

FIGURE 2-2. (4) HP fuel filter assembly, (5) drain plug

7. Remove (5) HP fuel filter drain plug and allow any remaining fuel pressure to escape from (4) HP fuel filter assembly before proceeding to retrofit kit installation. FIGURE 2-3



⚠ WARNING

Once removed, drain plug has no sealing ability and cannot be safely reused.

NOTICE

Recycle or discard (5) drain plug in compliance with AHJ or organizational guidelines.

FIGURE 2-3. (4) HP fuel filter assembly, (5) drain plug (removed)

3. Installation Procedure

WARNING NEVER put a wrench on a fuel system fitting without first confirming the system has been depressurized.

1. *If present:* remove existing (d) decal from (3) HP fuel filter head. **FIGURE 3-1**

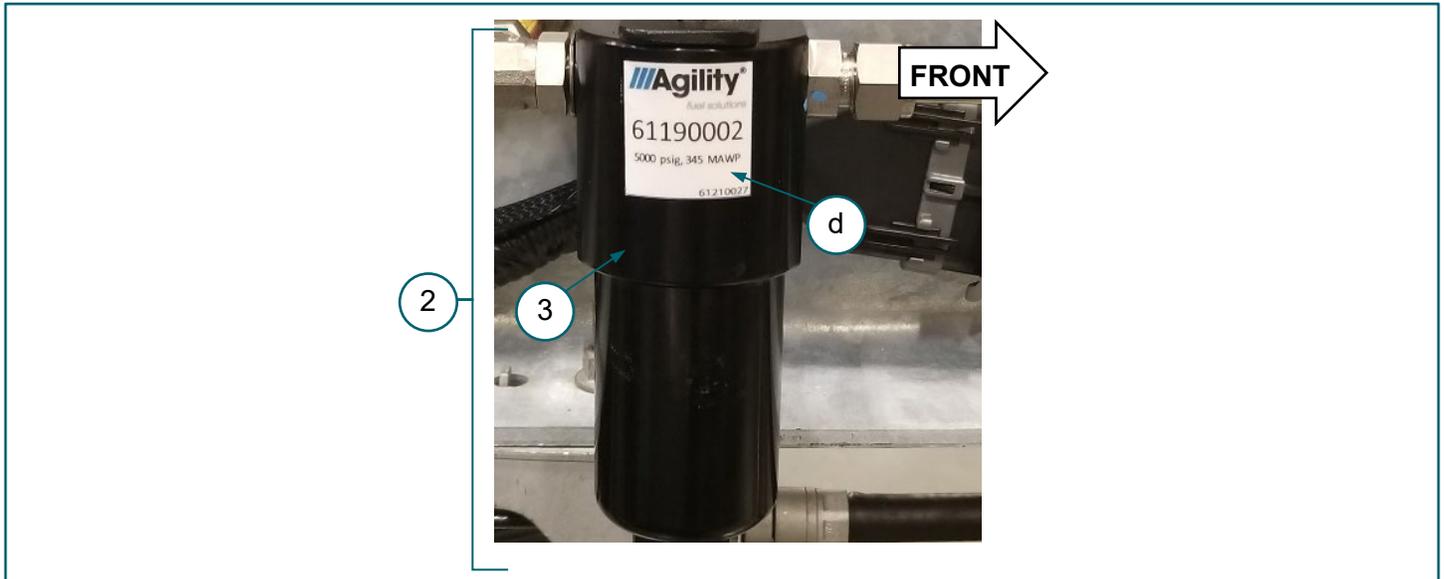
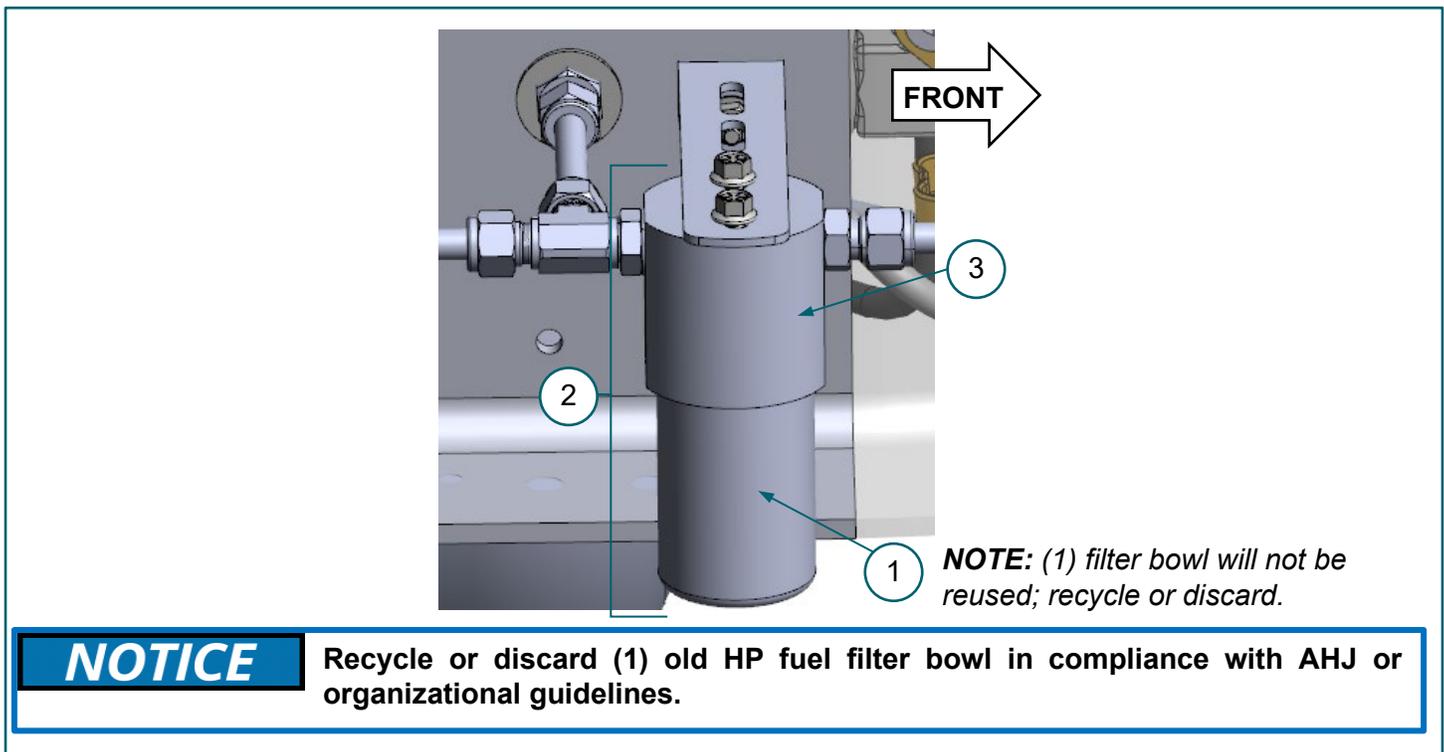


FIGURE 3-1. (2) high-pressure (HP) fuel filter assembly, (3) HP fuel filter head, (d) decal

2. Clean (2) HP fuel filter assembly thoroughly and use a 55 mm wrench to remove (1) filter bowl from (3) HP fuel filter head. **FIGURE 3-2**

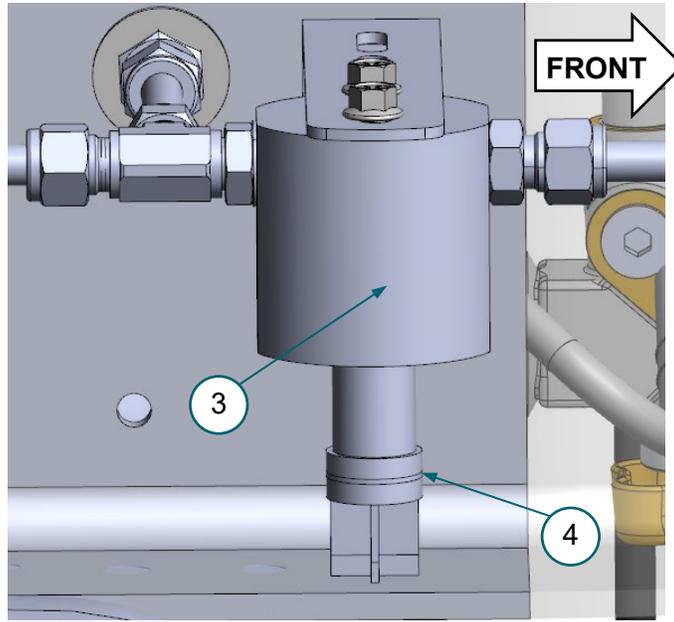


NOTICE

Recycle or discard (1) old HP fuel filter bowl in compliance with AHJ or organizational guidelines.

FIGURE 3-2. (2) HP fuel filter assembly, (3) HP fuel filter head, (1) filter bowl

3. Remove (4) filter element from (3) HP fuel filter head. **FIGURE 3-3**



NOTICE Discard used filter element in compliance with AHJ or organizational guidelines.

FIGURE 3-3. (3) HP fuel filter head, (4) filter element

4. Inspect (s) filter element stem inside (3) HP fuel filter head. **FIGURE 3-4**

NOTICE (s) filter element stem is an integral part of the (3) HP fuel filter head. *If (s) stem is damaged or missing, obtain new HP fuel filter assembly, from Hexagon Agility® CCTS.* **FIGURE 3-4**

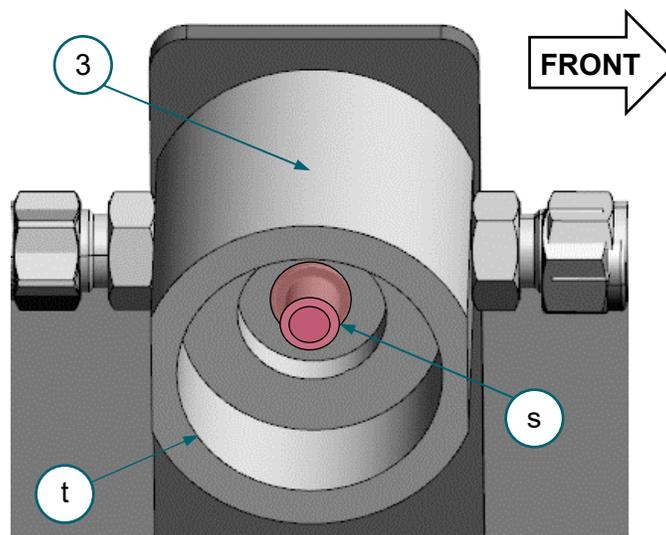


FIGURE 3-4. (3) HP fuel filter head, (s) filter element stem, (t) thread location

5. Clean and inspect (3) HP fuel filter head threads (*not visible*) at location (t) for debris, cross-threading, burrs, etc. *If HP fuel filter head threads are damaged, obtain replacement HP fuel filter assembly from Hexagon Agility® CCTS.*

6. Install retrofit kit (o) O-ring, in (5) retrofit kit HP fuel filter bowl (g) groove. **FIGURE 3-5**

⚠ Apply a light coat of O-ring lube to (o) O-ring before installing.

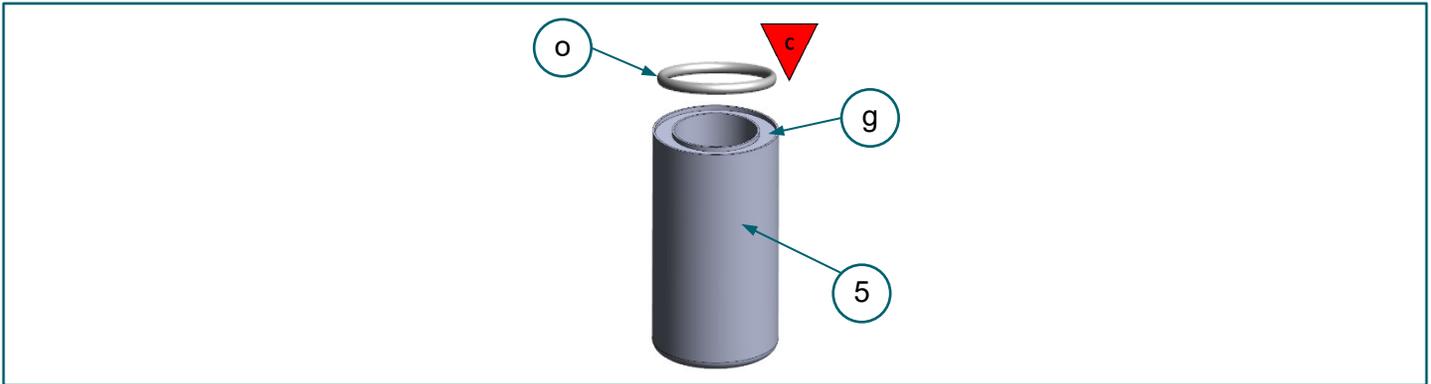


FIGURE 3-5. (5) HP fuel filter bowl, (o) O-ring, (g) groove

7. Install new (4) filter element (Hexagon Agility® p/n 69000481—*kit available separately*) in (3) HP fuel filter head. **FIGURE 3-6**

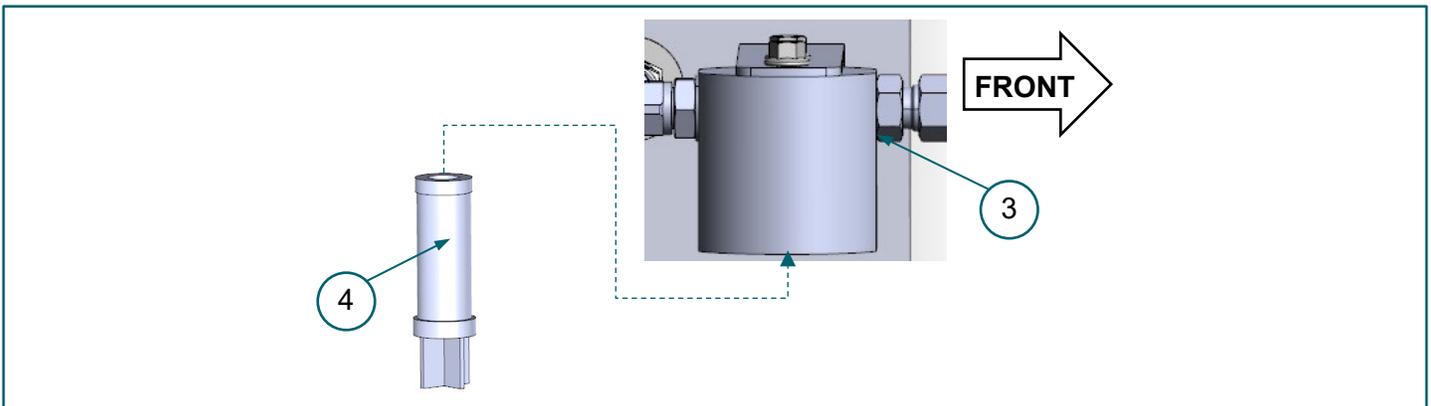


FIGURE 3-6. (3) HP fuel filter head, (4) filter element

8. Use a 55 mm wrench to install (5) retrofit HP fuel filter bowl on (3) HP fuel filter head. **FIGURE 3-7**

⚠ Torque (5) filter bowl to 60 ft-lbs (81.3 Nm).

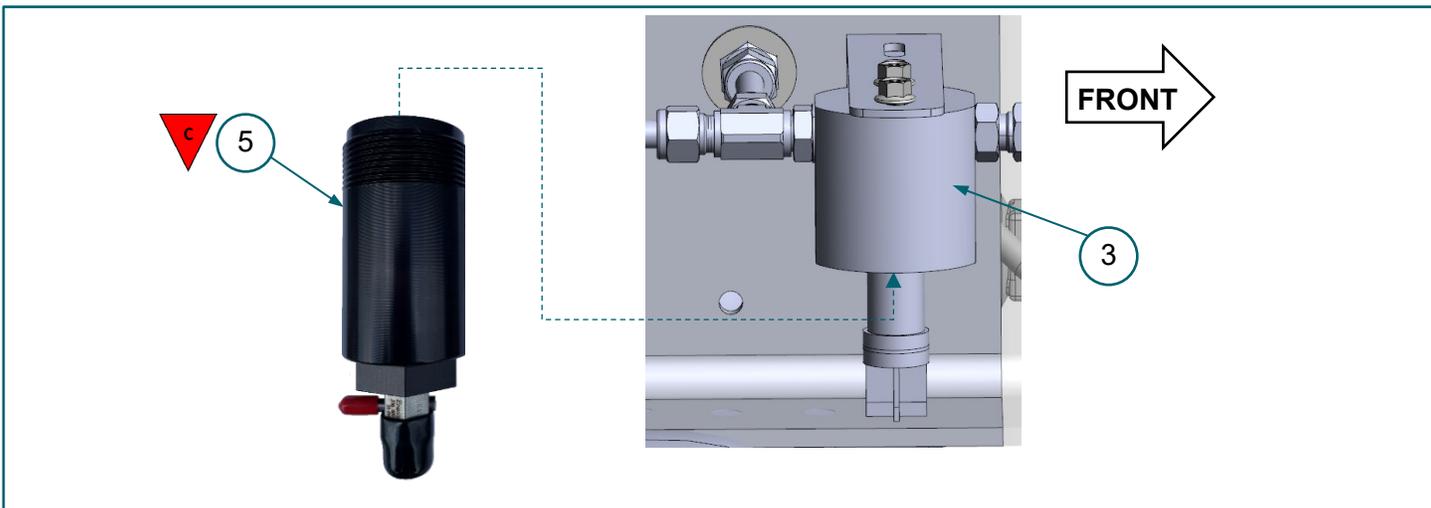


FIGURE 3-7. (5) retrofit HP fuel filter bowl, (3) HP fuel filter head

9. Clean (3) HP fuel filter head and (5) fuel filter bowl for decal installation. **FIGURE 3–8**

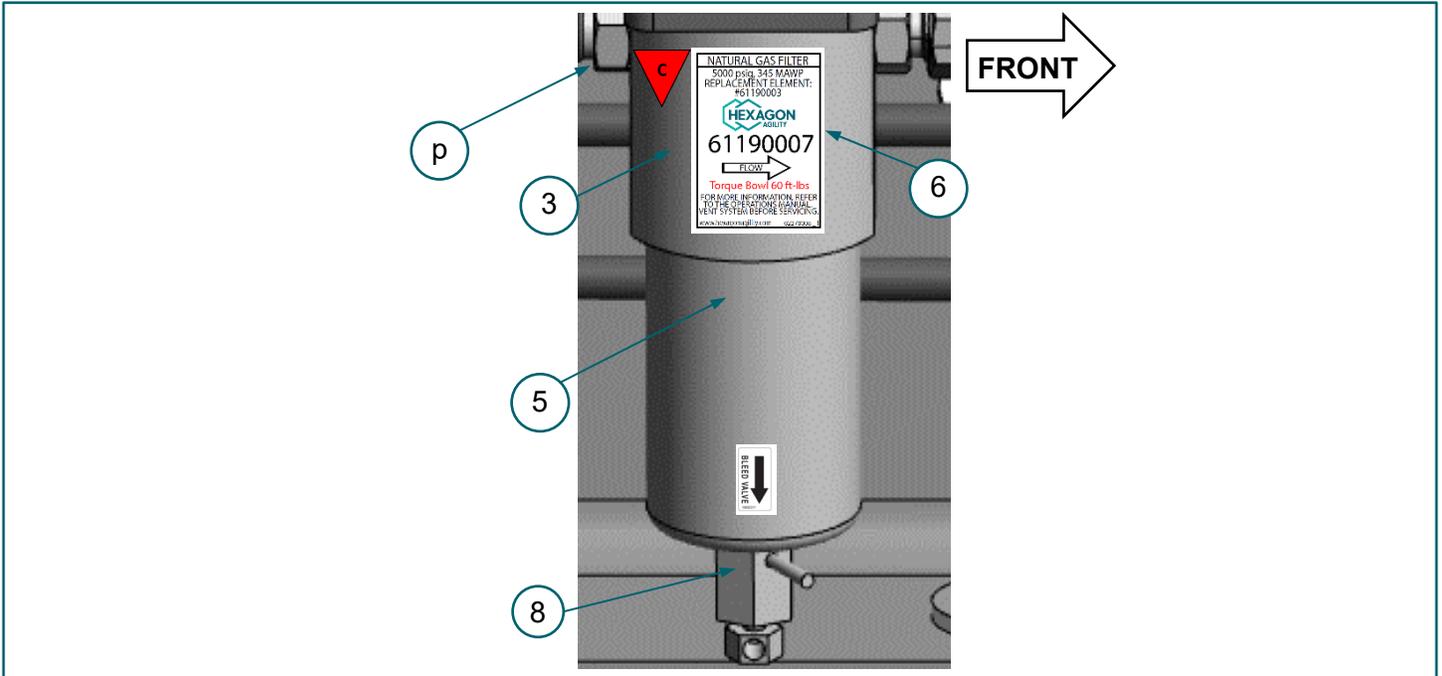


FIGURE 3–8. (3) HP fuel filter head, (5) retrofit HP fuel filter bowl, (8) bleed valve, (6) filter decal, (p) outlet port

10.  Install (6) fuel filter decal on (1) HP fuel filter head with flow arrow pointing towards the fuel filter head (p) outlet port. **FIGURE 3–8**

11. Remove pressure relief port cap and pressure relief nut cap from (8) bleed valve. **FIGURE 3–9**

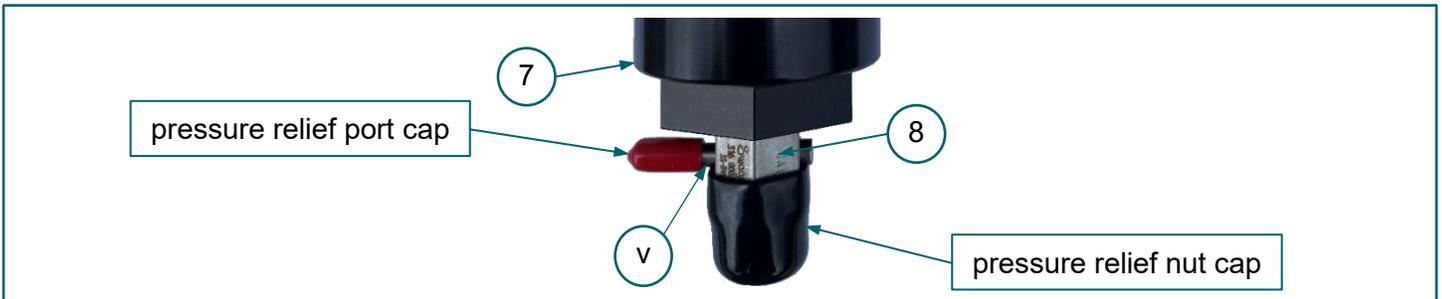


FIGURE 3–9. (5) retrofit HP fuel filter bowl, (8) bleed valve, (v) pressure relief port, pressure relief port cap, pressure relief nut cap

12. Verify pressure relief nut is fully closed using a 7/16-in wrench. **FIGURE 3–10**

 **To increase service life, ensure proper valve performance, and prevent leakage, apply only enough torque to pressure relief nut as required to achieve positive shutoff per Swagelok® instructions.**

FIGURE 3–10. (8) bleed valve, pressure relief nut

4. Leak Test Procedure

1. With an assistant, open DS cylinder manual valve while observing HP gauge on fuel fill panel until it reads 500 psi (3.45 MPa) and close the manual cylinder valve. **FIGURE 4-1**

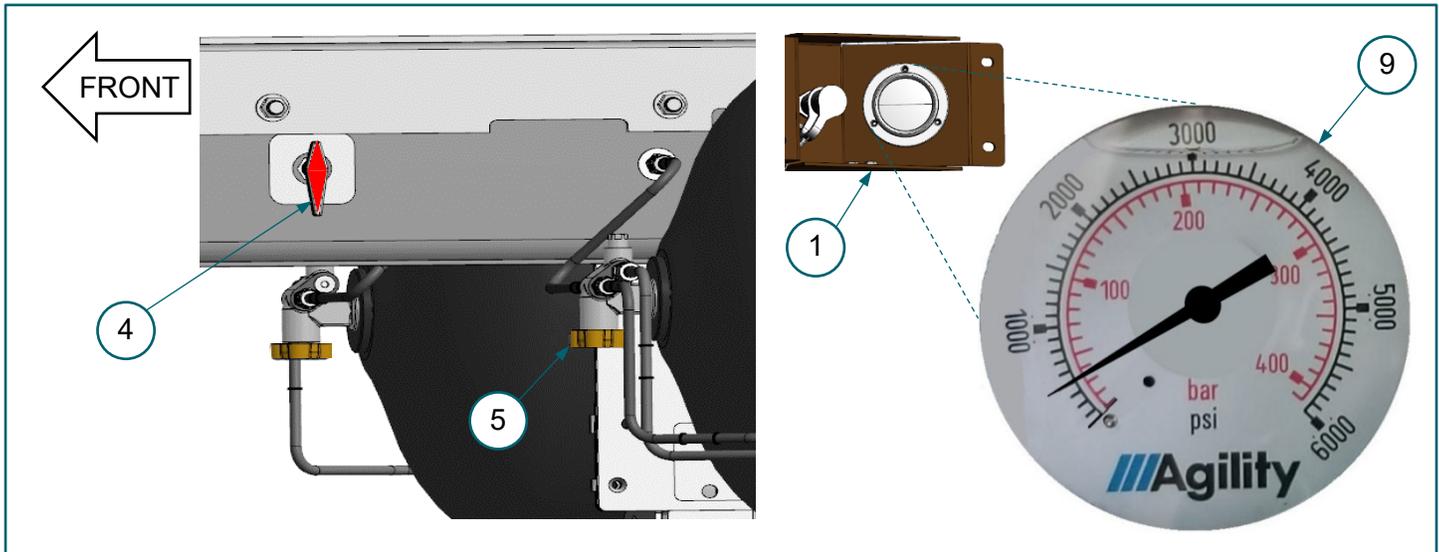


FIGURE 4-1. fuel fill panel, (9) HP gauge reading 500 psi, (4) 1/4-turn manual shutoff valve, (5) DS cylinder manual valve

2. Open 1/4-turn manual shutoff valve. **FIGURE 4-1**
3. Listen for hissing as a sign of a system leak.

⚠ WARNING STOP fuel flow immediately if loud hissing indicative of a fuel leak is audible.

4. Apply leak detection fluid to HP fuel filter bowl-filter head junction, all HP fuel filter fittings, the HP fuel filter bowl to bleed valve interface, and pressure relief ports and wait 3 minutes. **FIGURE 4-2**

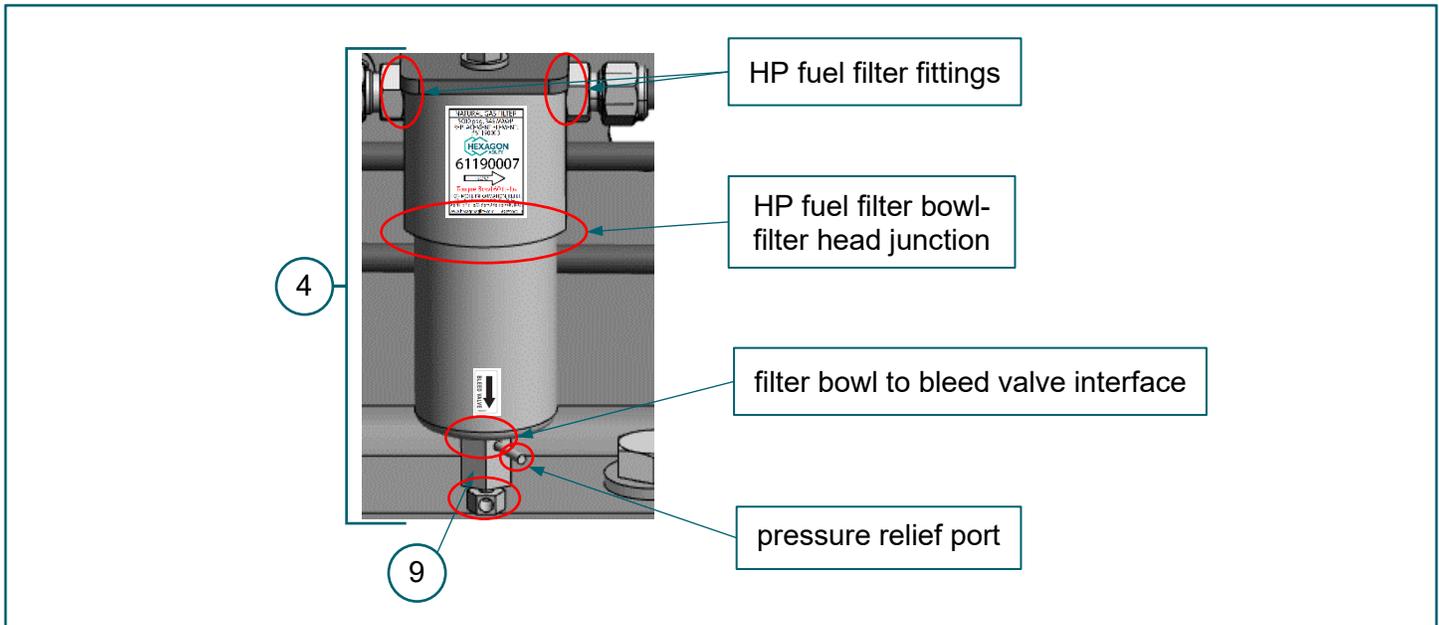


FIGURE 4-2. Apply leak detection fluid to (4) HP fuel filter assembly and (8) bleed valve at locations circled

Inspect all HP fuel filter fitting and component junctions for bubbles as an indicator of a leak. **FIGURE 4–3**



FIGURE 4–3. bubbles forming in leak detection fluid applied to a fitting junction

- a. If no leaks are found, proceed to next step.
- b. If leaks are found, purge fuel from the vehicle using the procedure described above in **Section 1, Steps 1 through 5**.
- c. Use a 7/16-in wrench to slowly loosen the pressure relief nut. **FIGURE 4–4**

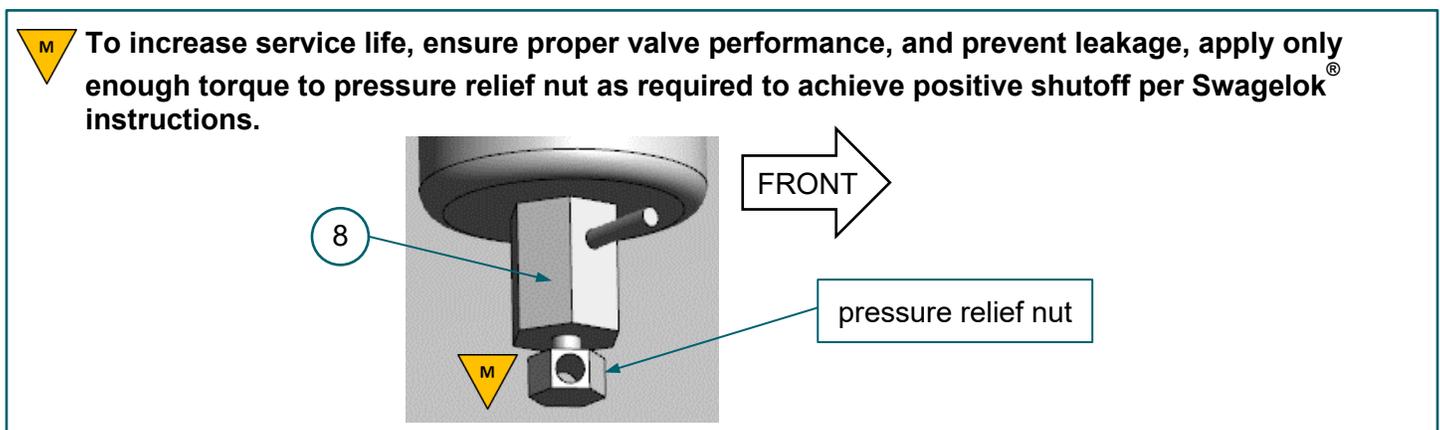


FIGURE 4–4. (8) bleed valve, pressure relief nut

- d. Tighten the pressure relief nut to finger tight then use a 7/16-in wrench to apply just enough pressure to stop the flow of fuel. **FIGURE 4–4**

⚠ WARNING NEVER attempt to tighten fittings while system is pressurized.

- e. Repair leak(s) before repeating **Leak Test Procedure**. Refer to *ENP-516, Truck and Tractor CNG Fuel System Operation, Maintenance & Inspection Manual*, “Leak Repair” section.

- With an assistant, open DS cylinder manual valve while observing HP gauge on fuel fill panel until it reads 2000 psi (13.8 MPa) and close the manual cylinder valve. **FIGURE 4–5**

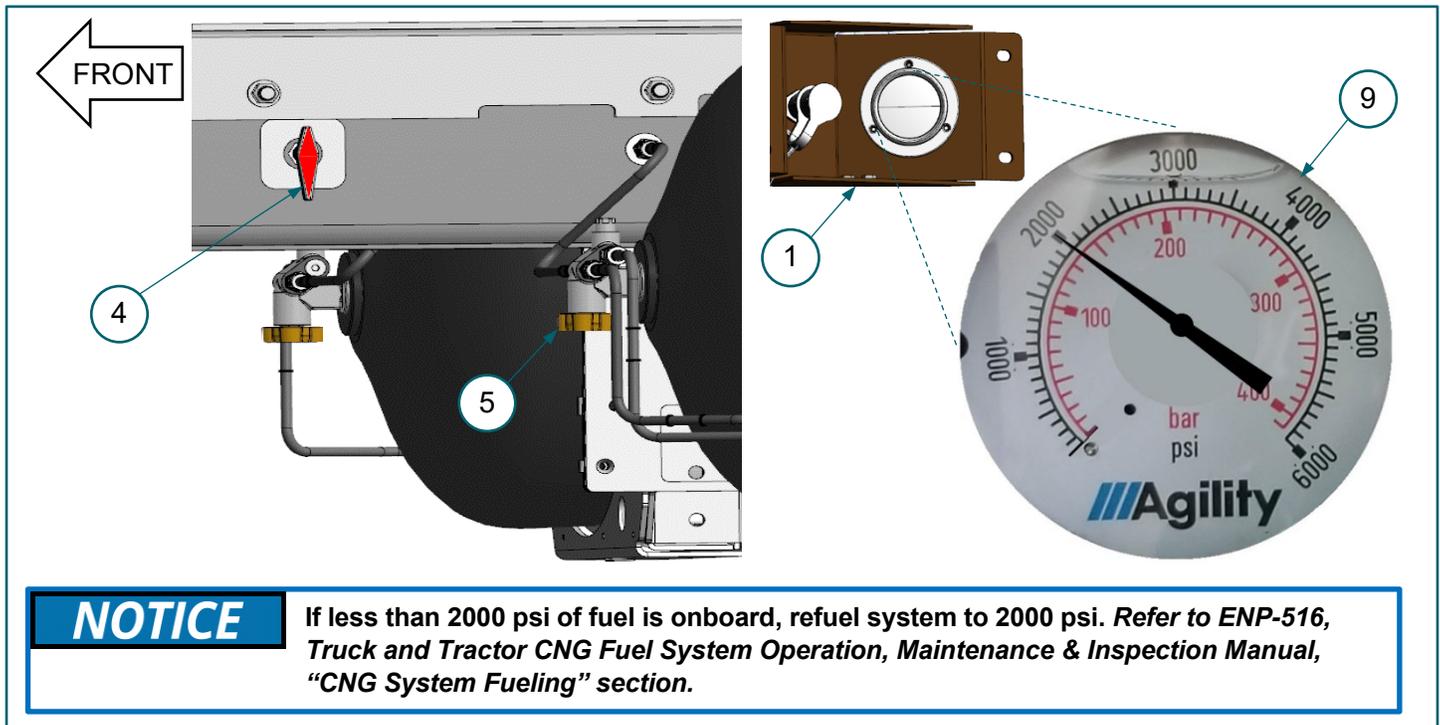


FIGURE 4–5. Fuel fill panel, (9) HP gauge reading 2000 psi, (4) 1/4-turn manual shutoff valve, (5) DS cylinder manual valve

- Repeat Steps 4 through 5 until no leaks are present, then proceed to Step 8.
- With an assistant, open DS cylinder manual valve while observing HP gauge on fuel fill panel until it reads 3600 psi (24.6 MPa) and close the manual cylinder valve. **FIGURE 4–6**

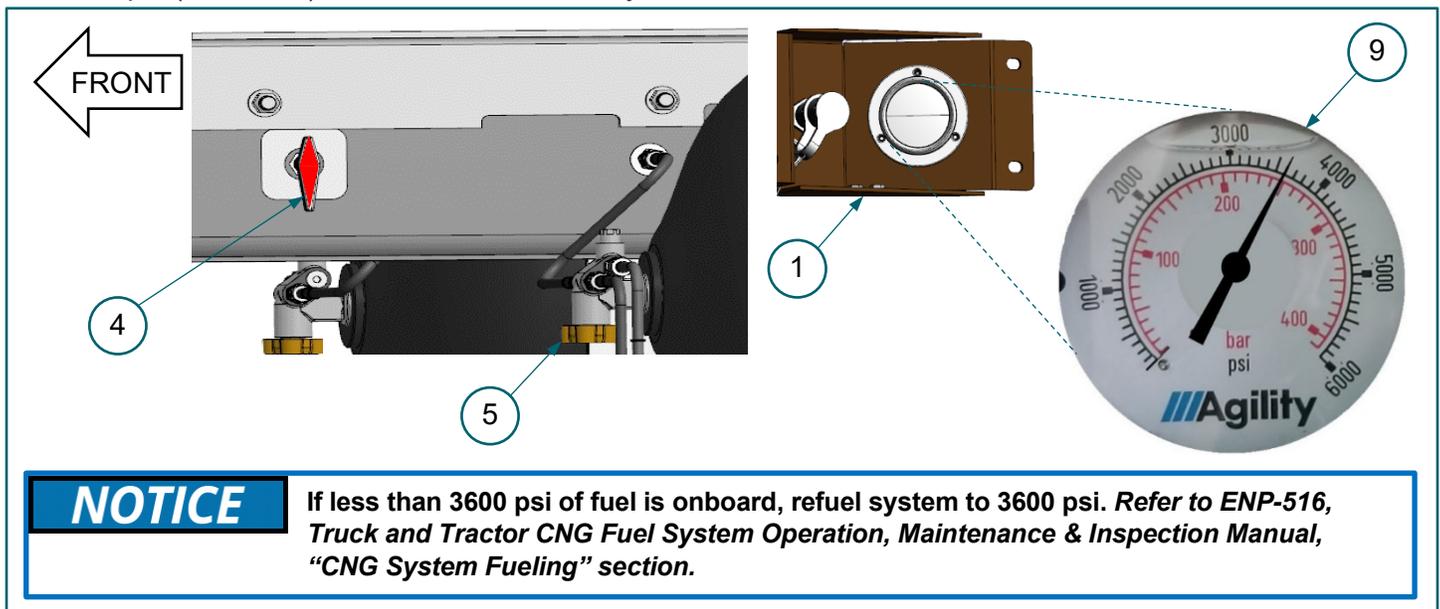
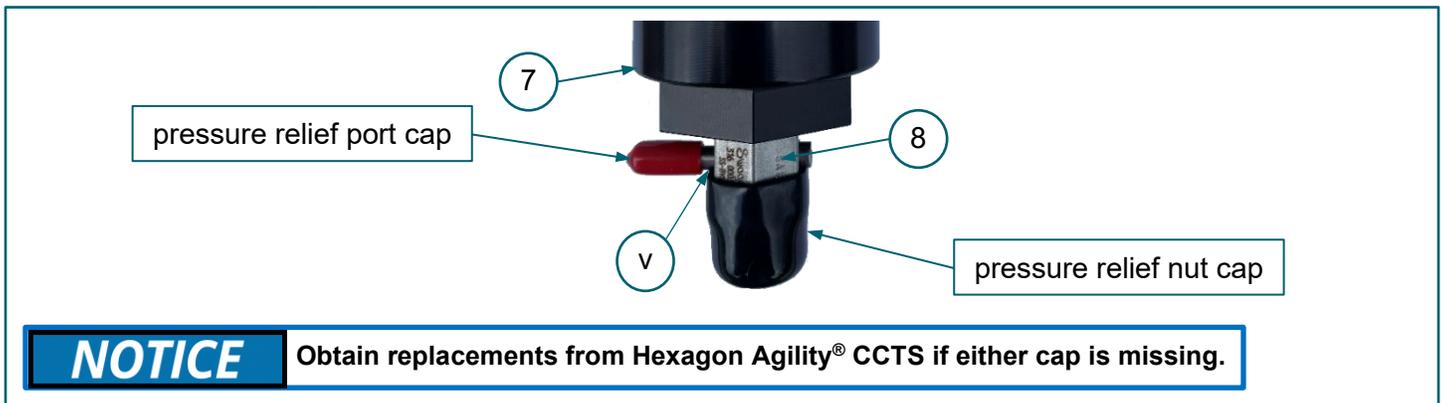


FIGURE 4–6. Fuel fill panel, (9) HP gauge reading 3600 psi, (4) 1/4-turn manual shutoff valve, (5) DS cylinder manual valve

- Repeat Steps 4 through 5 until no leaks are present, then proceed to Step 10.
- When the system passes the 3600 psi (24.6 MPa) leak test, use shop rags to clean all leak detection fluid from fuel system components.

10. Install pressure relief port cap, p/n 61090128, and bleed valve cap, p/n 61090129, on (v) pressure relief port and (8) bleed valve pressure relief nut. **FIGURE 4-7**



NOTICE

Obtain replacements from Hexagon Agility® CCTS if either cap is missing.

FIGURE 4-7. (5) retrofit HP fuel filter bowl, (8) bleed valve, (v) pressure relief port, pressure relief port cap, pressure relief nut cap

11. Road test vehicle using the procedure described below.

5. Road Test Procedure

1. Verify 1/4-turn manual shutoff valve, DS manual cylinder valve, and PS manual cylinder valve, are open.
2. Remove wheel chocks from front and rear of tires.
3. Start engine and verify proper fuel system operation.
4. Road test the vehicle until it reaches operating temperature.
5. **If a system fault appears**, contact Hexagon Agility® CCTS.
6. If system is operating properly, release vehicle into service.
7. Update vehicle maintenance and repair records.

Appendix A. WI.0199 – Removal and Retightening of Tube Fittings



Removal and Retightening of Tube Fittings

Scope: Swagelok fittings

Standard Work Instruction

WHAT	1	Remove any torque seal using a non-marking scraper (such as a fingernail).		WHAT	2	Remove any torque seal and the blue paint pen marks from fitting and nut using a mild solvent (such as Isopropyl alcohol) on a cloth. Do NOT remove the DMT mark! BE CAREFUL WHEN HANDLING SOLVENTS.	
	WHY	New torque seal is needed when the fitting is retightened.			WHY	New blue marks are needed when the fitting is retightened.	
WHAT	3	Put a "backing wrench" on the body of the adjacent fitting. Note: some products require holding a different component - this is noted in the product-specific work instructions.		WHAT	4	Loosen nut and completely remove tube from fitting.	
					WHY	The backing wrench prevents the fitting from rotating. This ensures that no other fittings are accidentally loosened.	
WHAT	5	Inspect the front ferrule to verify that the tube can be reused. The front ferrule must not be rounded as the example highlighted in red. 		WHAT	6	To reinstall, follow the tightening sequence in WI.0198 . Note that there will likely be a gap between the DMT mark and the top of the nut when hand-tight.	
					WHY	When the front ferrule cannot spin freely, the back ferrule is pressed against it too much. This is caused by over-tightening.	



Removal and Retightening of Tube Fittings
Scope: Swagelok fittings

Standard Work Instruction

Equipment List:

Description	Manufacturer	Manufacturer's Part Number
70% Isopropyl alcohol wipes	Any	---
Open-ended wrenches	Any	---
Vise	Any	---

Job Breakdown:

Important Steps	Key Points	Reasons Why
1. Remove torque seal	1. Completely removed	Must be replaced.
2. Remove paint marks	1. Completely removed	Need new visual aid to start tightening.
	2. Be safe	Solvents must be handled carefully.
	3. Don't remove DMT line	Provides reference for tightening.
3. Loosen nut	1. Use backing wrench	Holds everything in place to prevent leaks.
4. Check ferrule	1. Spins freely	A tight-fitting ferrule could leak.
5. Re-install nut	1. Per work instruction	Provides correct process

Hexagon Agility® Customer Care and Technical Services

Fuel system warranty or non-warranty product support may be obtained by calling or emailing Hexagon Agility® Customer Care and Technical Services (CCTS).

Please provide **your name, phone number, email address, and complete vehicle information: VIN, year, make, model, mileage, unit number vehicle owner, and current vehicle location.** A service advisor will contact you to arrange vehicle repair or ship a part.

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UPS Direct Access Prompt: 6

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