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Other Languages: NONE **Author:** Aaron Mimbs
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Coding Information

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Title: PSI 8.8L LPG Tank Venting Procedure During Fuel Fill Process

Applies To: PSI 8.8L LPG

CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

07/18/2016 - Initial Article Release

DESCRIPTION

This document will guide the user through properly venting a LPG Fuel Tank during fuel fill process for hard to fill conditions due to increased tank pressures or improper purging and filling post repair.

This document replaces/retires: None

SYMPTOMS

Diagnostic Trouble Code(s) & Dashboard Indicator Light(s):

DTC/Light	Description
None	

Customer Observations or Concerns:

- Fuel tank does not fill
- Fuel tank excessive time to fill
- Fuel tank intermittently hard or slow to fill

SPECIAL TOOLS / SOFTWARE

Tool Description	Tool Number	Comments	Instructions
PSI PowerLink			

[Tools Resource Center](#)

SERVICE PARTS INFORMATION

Parts Catalog – [Click Here](#)

Kit Description	Part Number	Quantity Required	Notes
None			

DIAGNOSTIC STEPS

Fuel Fill Tips

LPG fuel tank pressure will increase if exposed to high ambient temperatures, sunlight, hot asphalt, extensive operation, and other heat related conditions. Fuel fill station pumps must overcome fuel tank pressure to add propane to the LPG tank. Fill stations with lower pressure rated or "aging" pumps will have more difficulty filling LPG tanks with increased pressure. Scheduling fuel fill times for cooler ambient temperatures (pre-route or early mornings) when the fuel tank temperature is cooler will increase tank fill success, capacity, and decrease fill duration.

Post Repair Hard to Fill Tips

Fuel tanks that require evacuation and purging to open for replacement of internal components must be fully filled and vented prior to being returned to service. Most buses may not arrive at the dealer with the fuel tank FULL. This means the unit must be driven to a LPG fill station and filled while venting the remaining Nitrogen from the tank. Failure to do so may result in an occurrence of hard to fill concerns post repair.

Fuel Tank Venting Tips

Perform fuel venting and fill procedure DURING hard to fill conditions. For example, if hard to fill occurs on hot days (90F+) or after daily operation plan accordingly to perform venting and fill procedure during or immediately after these conditions. Performing venting and filling during cooler ambient temperatures or early morning when tank temperatures are cooler, may result in a recurrence of hard to fill conditions.

Possible Causes (For article purpose):

1. Temperature related fuel tank pressure increase
2. Incomplete tank fill/purge after repair
3. Weak or inadequate fuel fill station pump (Can not overcome tank pressure easily)

Step	Action	Decision
1	DIAGNOSTIC: Are fuel fill concerns related to tank temperature or occurring post evacuation and purging of the fuel tank?	Yes. See Repair Steps below
	Tank Temperature Examples: Intermittent hard/slow to fill, hard to fill after operation, hard to fill afternoon-evenings (not mornings), hard to fill above specific ambient temperatures, etc.	No. Perform section 2.7.4 Fuel Tank Does Not Fill or Takes Excessive Time in the Symptom Based Diagnostic section of PSI 8.8L LPG Diagnostic Manual .

REPAIR STEPS

WARNING:

To prevent property damage, personal injury, and / or death, read all safety instructions in the "Safety Information" section of the *Engine / Vehicle Service Manual* or *Engine Diagnostic Manual*.

WARNING:

To prevent property damage, personal injury, and / or death, **ALWAYS** wear appropriate Personal Protective Equipment (PPE) when interacting with the propane system. Escaping propane can cause severe frostbite and freeze burn.

**WARNING:**

To prevent property damage, personal injury, and / or death, **ALWAYS** visually inspect the unit prior to using. **NEVER** operate the unit if you suspect the condition of the unit or the service environment to be unsafe.

**WARNING:**

To prevent property damage, personal injury, and / or death, **NEVER** smoke, use open flame, operate portable electric / power tools, and / or operate electronic equipment (capable of igniting LPG) within a 25-foot radius of service area.

**WARNING:**

To prevent property damage, personal injury, and / or death, **NEVER ATTEMPT** to operate the compressor in excess of the American Society of Mechanical Engineers (ASME) pressure vessel rating or the service rating on the compressor, whichever is lower.

**WARNING:**

To prevent property damage, personal injury, and / or death, **NEVER** perform metal cutting, grinding, brazing, soldering, or welding within a 35-foot radius of service area.

**WARNING:**

To prevent property damage, personal injury, and / or death, park vehicle on a hard, flat surface, turn engine off, set parking brake, and install wheel chocks to prevent vehicle from moving in either direction.

**WARNING:**

To prevent property damage, personal injury, and / or death, **NEVER ATTEMPT** to operate the unit if its safety guards, shields, or screens are removed.

**WARNING:**

To prevent property damage, personal injury, and / or death, **NEVER ATTEMPT** to service any part of the unit while in operation.

**WARNING:**

WARNING: To prevent property damage, personal injury, and / or death, an operator **MUST ALWAYS** be present for the entire duration of the fill and venting operation.

 **WARNING:**

To prevent property damage, personal injury, and / or death, **ALWAYS** use hoses and fittings approved for use with Liquid Petroleum Gas (LPG). Ensure they meet the approved pressure and temperature ratings.

 **WARNING:**

To prevent property damage, personal injury, and / or death, **DO NOT** vent or release propane indoors or near sewers, pits, or low lying areas. Propane can accumulate in low spots, creating a fire hazard. Propane can also displace oxygen, creating a suffocation hazard. Propane systems should be serviced in a properly ventilated area.

 **WARNING:**

To prevent property damage, personal injury, and / or death, keep all sources of ignition away from propane vehicles while the fuel system is being serviced. Even if the tank and fuel lines are empty, flammable vapors could be present near the vehicle.

 **WARNING:**

To prevent personal injury and / or death, **NEVER** let the vehicle fuel tank and / or evacuation unit tank exceed a Maximum Acceptable Working Pressure (MAWP) of 250 psi during service.

 **WARNING:**

To prevent property damage, personal injury, and / or death, **NEVER** release trapped propane towards any person.

 **WARNING:**

To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

PROCEDURE:

1. Obtain Service Tool(s) and Personal Protective Equipment (PPE)
2. Park Bus at appropriate LPG fuel fill station
3. Install Wheel Chocks



Figure 1: Liquid Level and Liquid Service Valves Shield Bolts

Item 1: Shield Bolts

4. Remove Cover Assembly from Vehicle Fuel Tank to Access Liquid Service & 80% Liquid Level (Spit) Valves (Figure 1, Item 1)

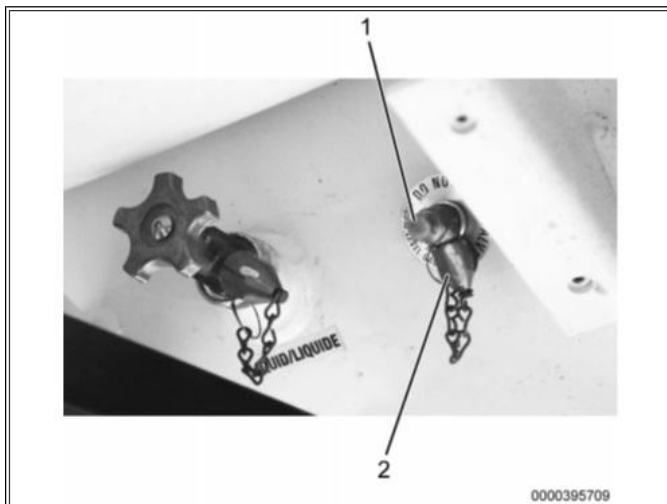


Figure 2: Liquid Level / Spit Valve and Cap

Item 1: 80% liquid level / spit valve

Item 2: 80% liquid level / spit valve cap

5. Remove Valve Assembly Cap from 80% Liquid Level (Spit) Valve (Figure 2, Item 2)
6. Open Vehicle Fill Port Access Door Assembly
7. Remove Protective Fill Cap from Vehicle Fill Port
8. Ensure Vehicle Fill Port O-ring is present and undamaged
9. Connect Hose Assembly Dispenser Nozzle to Vehicle Fill Port
10. SLOWLY Open Valve Assembly 80% Liquid Level (Spit) Valve on Vehicle Fuel Tank (Figure 2, Item 1)
11. Squeeze Handle on Dispenser Nozzle
12. Fill Tank to FULL then Release Dispenser Nozzle Handle to Stop
13. CAREFULLY Close 80% Liquid Level (Spit) Valve on Vehicle Fuel Tank (Figure 2, Item 1)
14. Install Cap 80% Liquid Level (Spit) Valve (Figure 2, Item 2)
15. Torque Cap 80% Liquid Level (Spit) valve to Spec (Figure 2, Item 2)
16. Disconnect Hose Assembly Dispenser Nozzle from Vehicle Fill Port
17. Ensure Vehicle Fill Port O-ring remains present and undamaged
18. Install Protective Cap at Vehicle Fill port
19. Close Vehicle Fill Port Door Assembly
20. Install Vehicle Fuel Tank Cover Assembly (Figure 1, Item 1)

- 21. Torque Protective Cover Bolts to Spec (Figure 1, Item 1)
- 22. Remove Wheel Chocks
- 23. Return Service Tool(s) and Personal Protective Equipment (PPE)

WARRANTY INFORMATION

Warranty Claim Coding:

Group:	15100 - Propane Fuel System
Noun:	132 - Tank, Propane

- Link to the Coding Manual: [Click Here](#)

Standard Repair Time(s):


SRT Table:

Step	Repair	Model	Engine	SRT
Repair Steps	LPG Tank Venting While Filling	CE / BE	PSI 8.8L LPG	T-Time 0.5 hours

- Link to the Standard Repair Time Manual: [Click Here](#)

OTHER RESOURCES

[Master Service Information Site](#)

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