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Field Service Bulletin

Vehicle to Vehicle CNG Fuel Transfer with the Fuel Transfer Hose

ENP-425

Rev. A: July 26, 2017

1. Introduction

In some instances, CNG fuel must be transferred from one vehicle to another to re-fuel a stranded vehicle, for convenience or to conserve fuel. A special transfer hose, made with approved, CNG-compatible conductive hose and couplings is available from Agility Fuel Solutions, see Figure 1.

Figure 1 Left: Agility Fuel Solutions transfer hose, part number 20100021.

The transfer process is passive, and some fuel loss is normal. Furthermore, the passive transfer process will equalize the amount of fuel between vehicles. The vehicle supplying fuel must contain a higher pressure than the vehicle to be fueled. See Section 6 for more details.

Warning Messages Used in this Bulletin

⚠ WARNING

Personal injury or death may occur if procedures are not followed.

⚠ CAUTION

Damage to equipment, fuel system or vehicle is possible if instructions are not followed.

⚠ WARNING **⚠ CAUTION**

A. Only CNG qualified personnel should perform this procedure.
B. Before transferring fuel, ground the vehicles with a minimum 3 gauge wire to an approved electrical ground system.
C. Use a slow flow when transferring fuel to reduce static electricity/electrostatic discharge and to avoid freezing.

2. Affected Service Centers

These suggestions may be applied to any CNG fueled vehicle.

3. Corrective Action

None, this bulletin is for information only.

4. Parts, Materials and Tools

- De-fueling/transfer hose: Agility Fuel Solutions Part number 20100021
- Common hand tools

5. Procedure

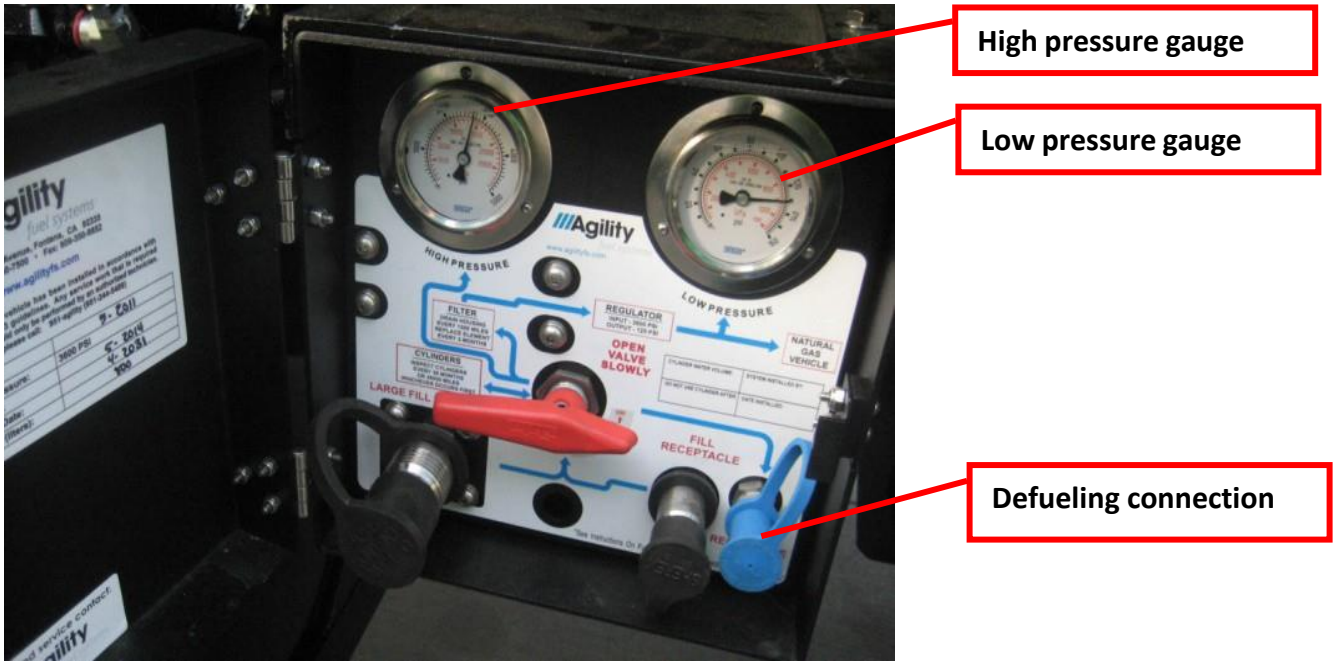

Figure 2 Typical FMM and connections for fuel transfer. Your configuration may differ from this example.

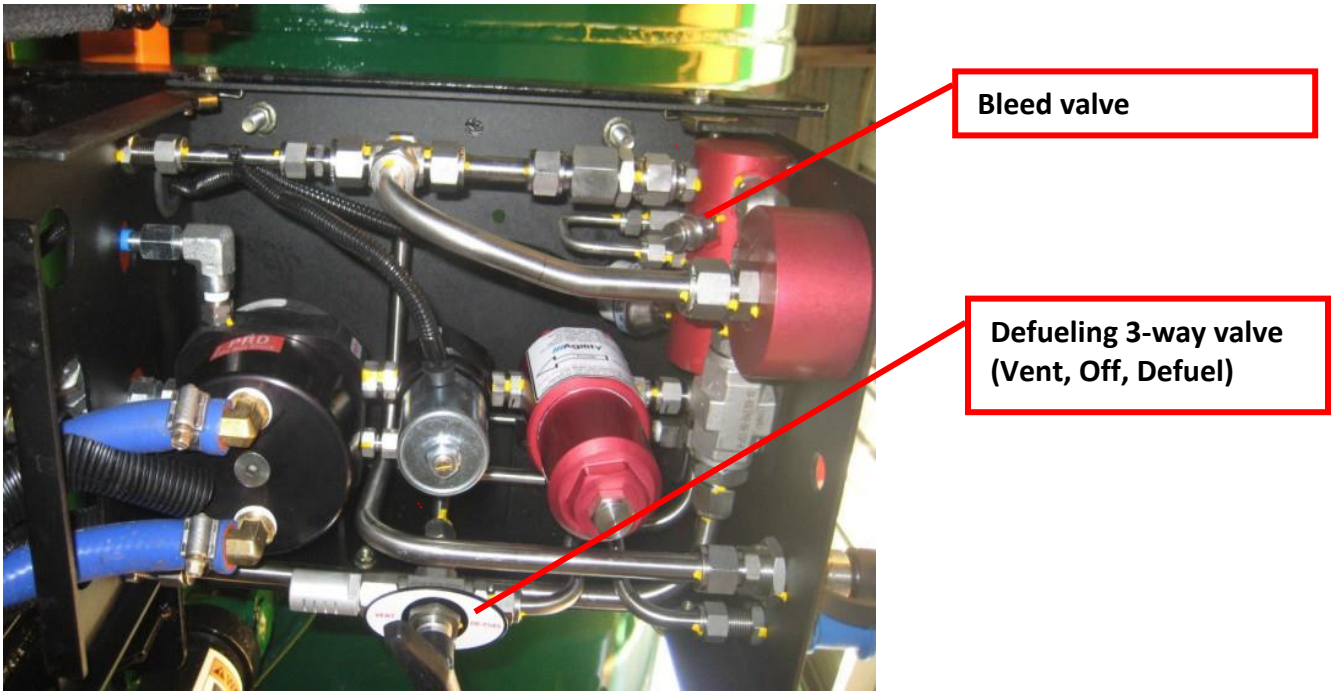

Figure 3 FMM unit, cover removed to show bleed and 3-way valves. Your configuration may differ from this example.

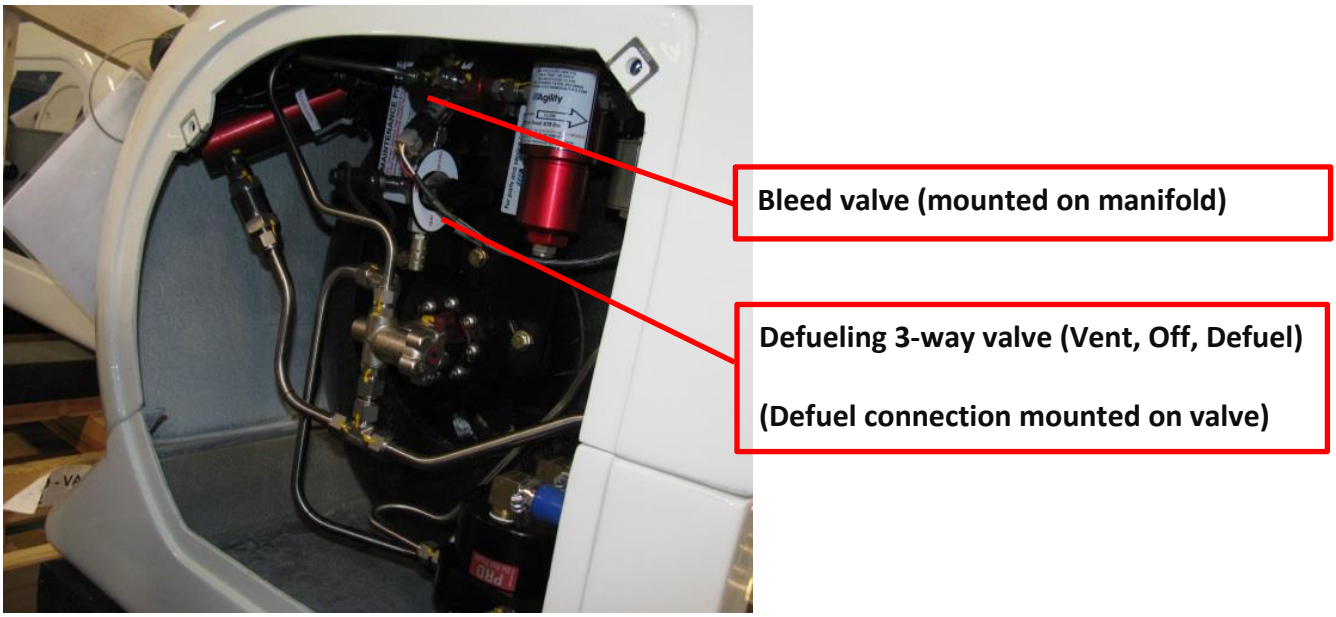

Figure 4 Side mount system connections for fuel transfer. Your configuration may differ from this example.

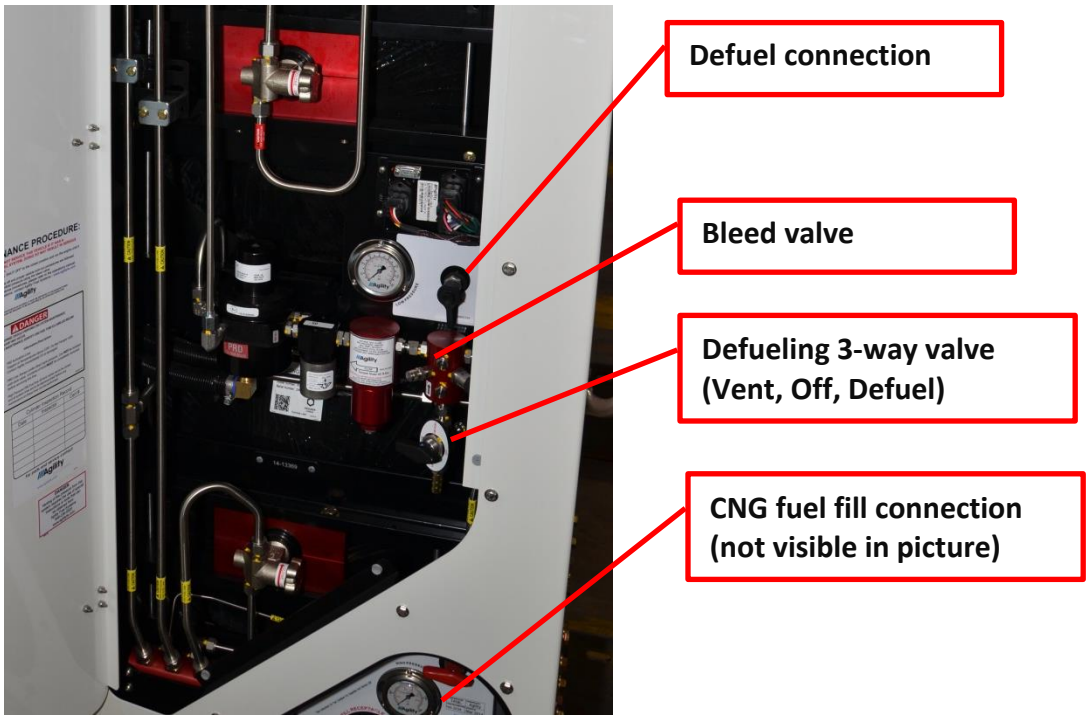

Figure 5 Back of cab system connections for fuel transfer. The bleed valve is mounted on the manifold. Your configuration may differ from this example.

Vehicle A is the vehicle with fuel that is to be transferred/defueled.
Vehicle B is the vehicle with lower pressure that the fuel is transferred to.

1. Prepare vehicles for fuel transfer.
   a. Block the wheels on both vehicles.
   b. Shut off engines on both vehicles.
   c. Turn off battery disconnect switches on both vehicles.
   d. Open access doors on the fuel management box on both vehicles.
   e. Note fuel pressure on high pressure gauge. (CNG tank pressure)
2. Remove maintenance cover from the bottom of the fuel management box on Vehicle A.
3. Turn the 3-way defueling valve handle to the “Vent” position.
4. Connect the CNG fuel transfer hose to Vehicle A, by pulling back on the connect collar on the hose and then pushing it onto the vehicle coupler.
5. Carefully attach the transfer hose to one of the fuel fill connections on Vehicle B and open fuel valve on nozzle (if equipped).
6. Slowly turn the 3-way valve from the “Vent” position to “Defuel” position on Vehicle A.
7. Adjust this flow to a steady flow rate. A fast flow rate will cause the system to freeze.
8. When gas stops flowing, the high pressure gauges of both vehicles should equalize.
9. Turn the 3-way valve on Vehicle A from the “Defuel” position to the “Vent” position and disconnect the hose from the fuel connection on Vehicle B.

⚠ WARNING

Fuel pressure in the hose will vent through the defuel valve on vehicle A

10. Turn the 3-way valve on Vehicle A from “Vent” position to the “OFF” position.
11. Disconnect fuel hose from Vehicle A by pulling back on the quick connect collar on the hose and pulling away from the vehicle coupler.
12. Install maintenance cover on the bottom of the fuel management box of Vehicle A.

6. Things to Know About CNG Fuel Transfer

The fuel transfer process is passive. There are no pumps in the temporary storage system that will extract all fuel from the vehicle or pump it back into the vehicle. Fuel is transferred by moving fuel from a higher pressure system to a lower pressure system.

Under normal conditions, only 25% to 50% of the fuel will move into the temporary storage vessel. The rest must be vented to the atmosphere through a defueling post.

When vehicle service is complete, fuel in the temporary storage system can be transferred back to the vehicle at the same transfer rate and loss.

7. Warranty Statement

Does not apply.

If you have any questions, contact Agility Fuel Solutions Customer Care: 949-267-7745, toll free: 855-500-2445 or support@agilityfs.com.

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Proprietary Statement

Trademark Notice

Revision	Description	Author	Approved By	Date
--	Initial Release	W. Yoshida	A. Bhakta	9/28/15
A	Revised company name and address, added ANSI Z535 signal words, simplified transfer section	W. Yoshida	M. Meyer	7/26/17