



Field Service Bulletin
CNG Side Mount System 21005000
Rail Reinforcement
ENP-476
Rev. B: December 10, 2018

1. Introduction

Some 21005000 side mount CNG systems are showing signs of fatigue in the outer corner of the frame. A reinforcement plate is used to repair the frame. This is not a service campaign or a recall. This repair is not covered under warranty.

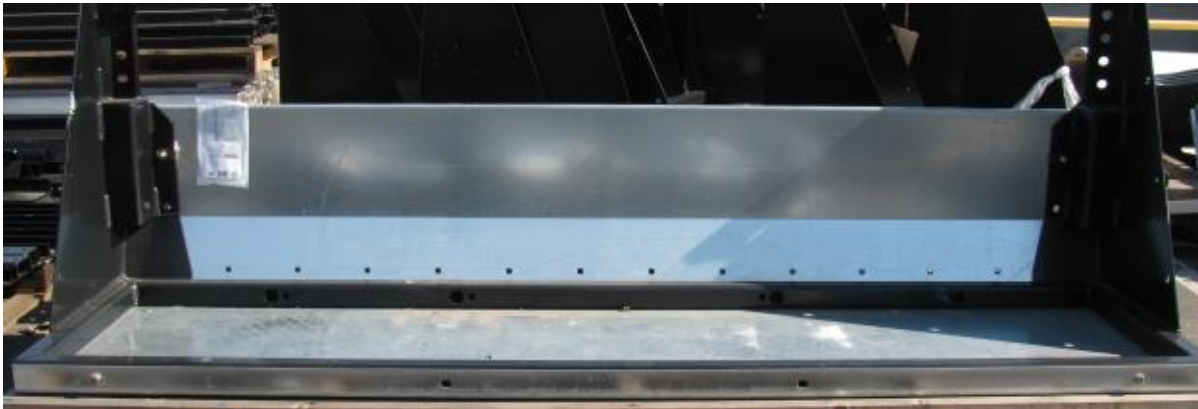


Figure 1. Side mount system 21005000 with cover removed.

Warning Messages Used in this Bulletin



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



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



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

2. Affected Units

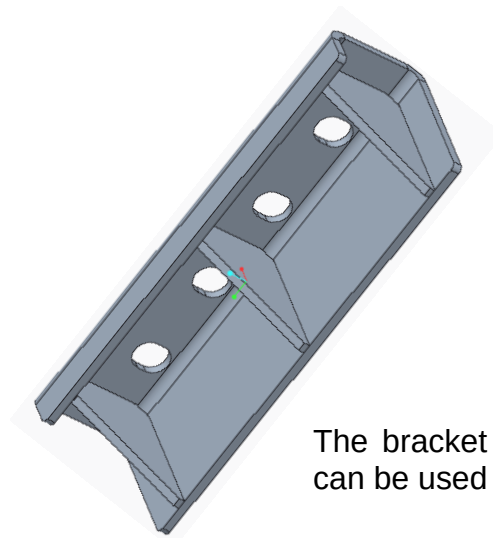
Some side-mounted Agility Fuel Systems CNG system number 21005000 only.

3. Corrective Action

Weld a new bracket to repair the broken frame member.

4. Tools and Materials

- Angle grinder
- Welder
- Jack or lift to hold and maneuver the cylinder
- High pressure nitrogen for pressure testing
- Personal protective equipment (PPE), including eye and hearing protection



The bracket is symmetrical so it can be used in any position.

Qty.	Part Number	Description
2	21005020	Reinforcement bracket

WARNING

Use proper lifting techniques for safety. Cover removal requires two people to lift and pull away the cover from the vehicle chassis.

5. Procedure

DANGER

This procedure requires cylinder removal - depressurize and defuel the system before performing work.

1. Remove the system covers. Clean and save the fasteners since they will be re-used if in good condition.

2. Lift and pull the covers away from the vehicle chassis as shown in Figure 2.



Figure 2. Lift and pull the cover and steps away from the fuel system and vehicle chassis. Use proper lifting techniques to avoid injury.

5.1 Depressurize

1. Ensure the vehicle is turned off.
2. Locate and close all cylinder shutoff valves (turn handle fully clockwise).
3. Make sure the manual shut off-valve on the FMM panel is in the “ON/OPEN” position.
4. Start and run the engine until it stops.
5. Ensure the vehicle is off and that the proper vehicle lock-out procedures are followed. (Remove the ignition key).
6. Check the gauges on the fill panel to ensure that all the pressure is relieved.
7. Slowly open the bleed valve inside the FMM.

5.2 Defuel

Since these systems do not have a defueling port and valve, you must defuel the system by adding a section of tubing to the cylinder valve to safely vent gas from the cylinder. Perform the following as shown in Figures 3 and 4.



Figure 3. Two views of the plug to be removed from the cylinder valve.



Figure 4. Left: Straight fitting mounted on cylinder valve. Right: Temporary L-shaped vent tube in place to vent gas up and out.

1. Make sure the cylinder valve is closed. Leave all tubing in place. DO NOT loosen any fittings.
2. Remove the 1/2-in. plug from the valve.
3. Install a 1/2-in. tube to 1/2-in. male straight thread fitting into the valve. Torque to 18 ft-lbs
4. Make sure the vent tube points up and away from the vehicle.
 - a. **NOTE:** If an approved natural gas vent post is available, run a high pressure line from the valve to the vent post.
5. Wear hearing protection. Slowly open the cylinder valve to vent the CNG. Control the flow to prevent excessive frost and ice buildup.
6. When defueling is completed, remove all tubing from the cylinder valve and keep it in a safe place since it will be re-used.

5.3 Remove the Cylinder

1. Remove the 5/8-in. nuts from the cylinder straps.
 - a. **NOTE:** When the bolts are removed, the fuel cylinder will rest on the straps and the bottom cover attached to the frame rail.
2. Remove, clean and save the Belleville washers. Keep them in a safe place since the hardware will be re-used. Make sure to observe the washer orientation and order, this is important to ensure proper tension on the straps.



Figure 5. Belleville washer stack on the cylinder strap mounting bolts.

3. Carefully remove the cylinder from the chassis.



Figure 6. Cylinder being removed from the chassis.

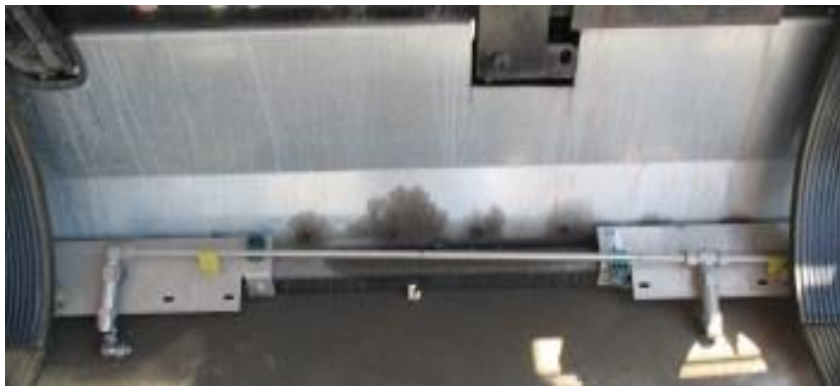


Figure 7. The PRD and its plumbing lines can remain on the fuel system structure.

4. Prepare the frame for welding.

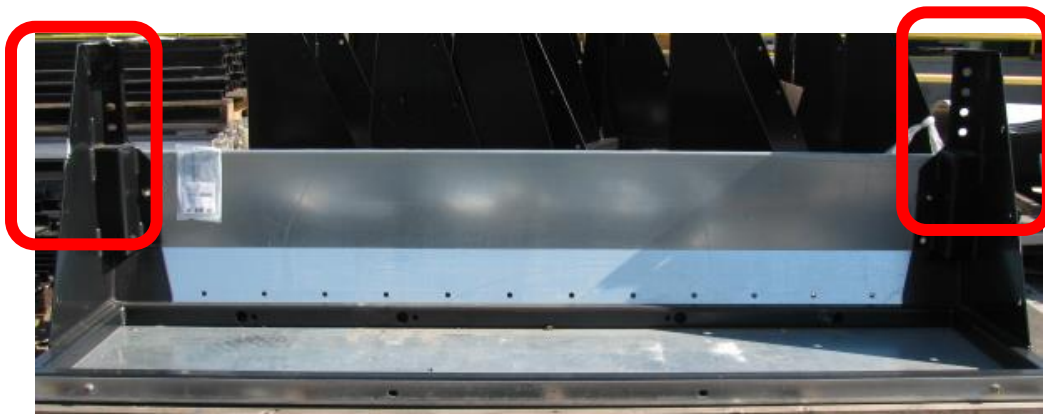


Figure 8. The work area is boxed in red. Grind away paint, powder coat and rust on the frame to make room for the new reinforcing plate and welds.

5. Tack and weld the reinforcement bracket in place, then prep and paint the frame to prevent corrosion as shown below.



Figure 9. Tack the reinforcement plate into place. Hammer to fit as needed.

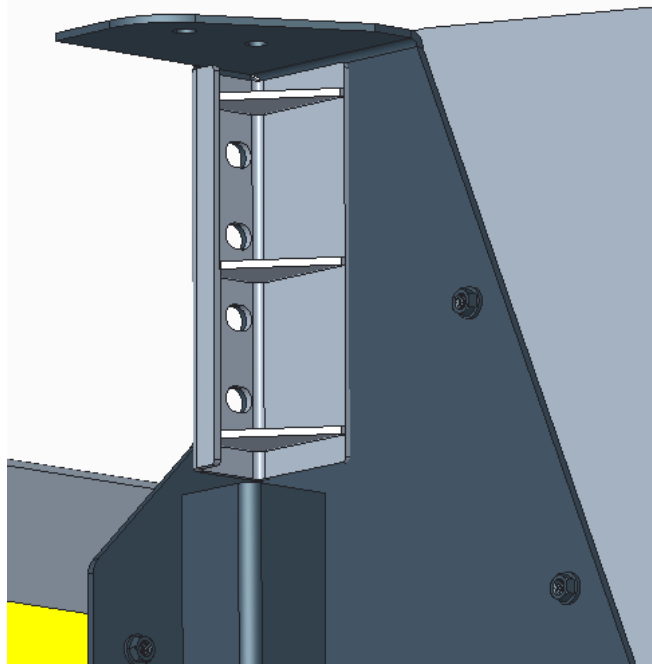


Figure 10. New bracket welded in place.



Figure 11. The bracket welded in place and painted.

5.4 Re-Install the Cylinder and Plumbing Lines

1. When the frame work is complete, re-install the cylinder by reversing the removal procedure.
2. Note the position of the valve and make sure the handle is at the 12 o'clock position before attaching the mounting straps.
3. Make sure the Belleville washer stack is assembled as shown in Figure 13.



Figure 12. Left: Make sure the valve is vertical, with the handle at the 12 o'clock position. Right: A long extension bar is needed to tighten the strap bolts. Torque to 60 Ft-Lbs.



CAUTION

Orientation of each Belleville washer is critical.

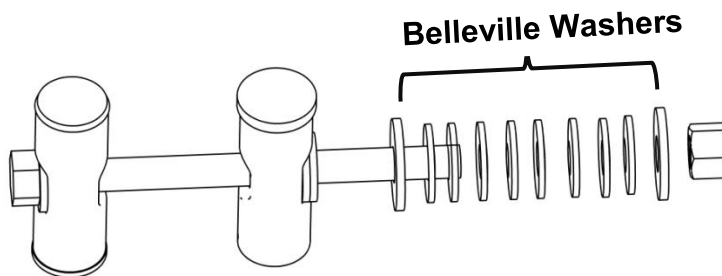


Figure 13. The concave and convex sides of the Belleville washers must alternate as shown to ensure proper cylinder tension. Flat washers are used on each end.

4. Torque the strap bolt to 65 Ft-lbs. Repeat the torque cycle two times at 4 hour intervals.
5. Replace the fuel tube going to the valve. Remove the fitting used for the venting process and re-install the plug.

5.5 Pressure Test the System and Repair Any Leaks

1. Pressurize the system and perform a leak test on all components serviced.
2. Fix any leaks.
3. Re-assemble covers.
4. The vehicle can be returned to service.

6. Warranty Information

1. This procedure is **not** covered under warranty.
2. Standard repair time (SRT) is 10 hours per vehicle (both side mounted systems).

For parts, support or other questions, contact Agility Fuel Solutions Customer Care:

+1 949 267 7745, toll free: +1 855 500 2445 or parts@agilityfs.com.

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