



Field Service Bulletin
237 Series (Gen 3) Side Mount
CNG System Isolator Repair
ENP-536
Rev. C: October 4, 2017

1. Introduction



Figure 1. Side mounted CNG fuel system (237 series, Gen 3) affected by this procedure.



Figure 2. Worn and displaced rubber isolators under the J-bracket in a 237-series side mount system.



Figure 3. Isolator rib splitting away from the isolator channel.

It may be necessary to replace worn rubber isolators in 237 series side mount systems. These systems use rubber isolators that are integrated (“wound-in”) with the cylinder. Most common wear points are immediately under the J-bracket as shown in Figure 2. In this case, the isolator is modified and portions removed and replaced with new isolator material following the steps below.

In some cases, the isolator rib or ribs may split and move away from the main channel, as shown in Figure 3. In this case, the damaged portion of the ear where it is delaminated can be removed and replaced (patched) with a section of isolator material (part number 201000149). More details in Section 7.

2. Affected Units

Some third generation CNG side-mounted Agility Fuel Solutions systems with composite covers and integrated (“wound-in”) cylinder isolators (237 series). Inspect the system mounting brackets, straps and isolators to determine whether or not replacement is necessary. This is a “repair as needed” procedure and not a service campaign or recall.

3. Corrective Action

Remove and replace worn cylinder isolator section or sections with an isolator “patch” as needed. See procedure section below.

4. Tools and Materials

- Personal protective equipment (PPE), including eye and hearing protection as needed.
- Jack or lift to hold and maneuver the cylinder.
- Utility knife to trim the rubber isolator.
- J-roller to apply adhesive tape.
- Scraper or pry bar to help remove worn isolator (optional or as needed).
- 3M adhesive as specified below, or equivalent to seal the repaired edges.
- Isopropyl alcohol to prepare and clean mounting surfaces.

The materials list is for one pair of side mount systems (one for each side of the vehicle).

Qty.	Unit Of Measure	Agility Part Number	Description
2	Each	21000148	Rubber isolator, 45.5-in. length.
As needed	Inches	20100149	Rubber isolator material to replace rib sections.
1	Pkg	10802114	3M™ Scotch-Weld™ Urethane Adhesive DP620NS Black, 50 mL.
1	Tube	10801302	2.7 oz. tube, black silicone Loctite® Superflex RTV adhesive sealant, number 59330. Similar silicone adhesive sealants are acceptable to prevent water, moisture and dirt from entering the space between the wound-in isolator and cylinder.

⚠ WARNING ⚠ CAUTION

- A. Use proper lifting techniques for safety. System removal requires two people to lift and pull it away from the vehicle chassis.
- B. This procedure requires cylinder removal - depressurize and defuel the system before performing work.
 - 1) Refer to “Safely Working on CNG Fuel Systems,” ENP-391 and “Service Facility Fuel Handling Equipment,” ENP-380, for more information on defueling, fuel transfer and temporary fuel supplies.

5. Procedure: Remove the System from the Chassis

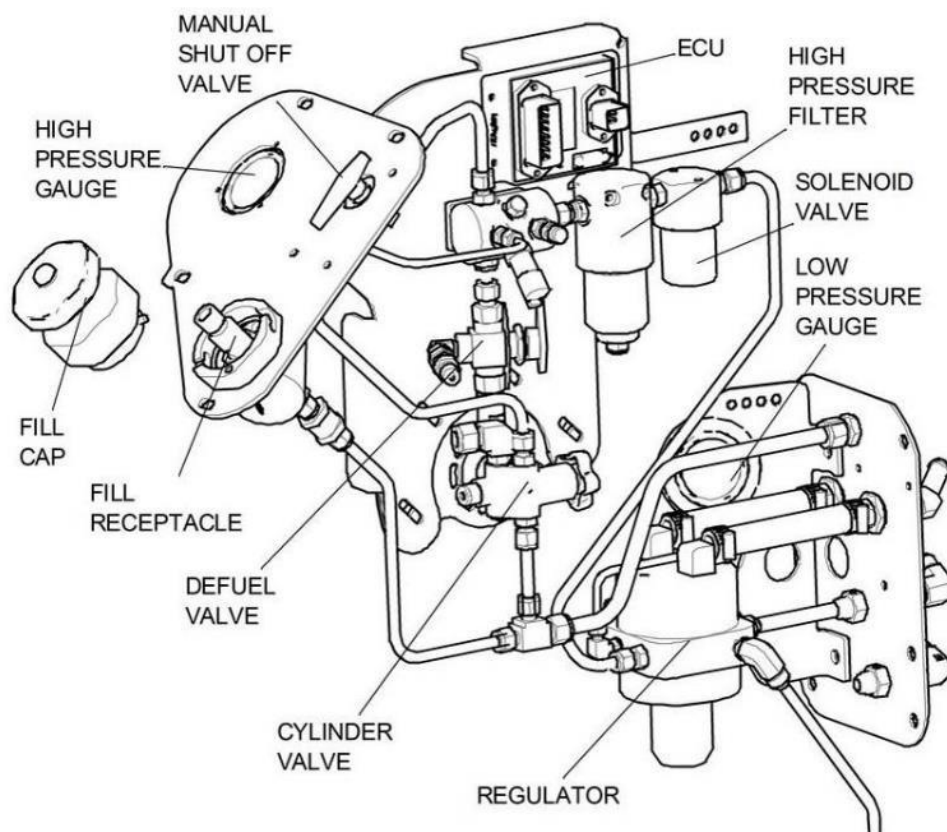


Figure 4. Typical 237 series fuel management module, showing defuel valve location.

5.1 Depressurize

- 1. Make sure all cylinder valves are fully closed.
- 2. Turn the red-handle main shutoff valve to the ON/OPEN position.
- 3. Close the FMM door (if equipped), and start and run the engine until it stalls.

4. Check the low pressure gauge to make sure it reads zero psi.
5. Turn the ignition off, and remove the key. Follow any other vehicle lock-out procedures.
6. Access the bleed valve (usually inside the FMM housing) and open it slowly using an open end wrench to relieve remaining pressure in the system.

5.2 Defuel

1. Refer to Figure 3.
2. Connect a ground wire from the vehicle to the vent stack system.
3. Attach the defuel hose to the vent stack system.
4. Attach the defuel nozzle to the defuel receptacle on the FMM.
5. Ensure the manual shutoff valve is ON/OPEN.
6. Slowly open the defuel valve, and adjust for a slow and steady flow to avoid freeze-up.
7. Close the bleed valve. The system is now ready for service.

5.3 Remove the System from the Chassis

1. Refer to Figure 4.
2. Remove the top covers from the system.
3. Remove the system chassis to vehicle chassis bolts.
 - a. The system is now “hanging” from the Drop-N-Go™ bracket.
4. Support the system from below with a suitable lift or jack.
5. Lift the system and remove it from the vehicle chassis.
 - a. The system must be tilted away from the vehicle and lifted at the same time to come off of the bracket.
6. Disconnect plumbing lines and components from the FMM.



Figure 5. Remove the outer cover bolts and remove the top and side covers.



Figure 6. Use a jack or forklift to lift and pull the system from the mounting brackets.

6. Mark, Remove and Replace Rubber Isolator and Seal with Silicone Adhesive

⚠ CAUTION

When cutting or trimming the rubber isolator, do NOT cut or damage the fuel cylinder.

1. Mark the isolator to show the J-bracket location. If the cylinder is already removed from the system, look for wear (flat) marks on the isolator.

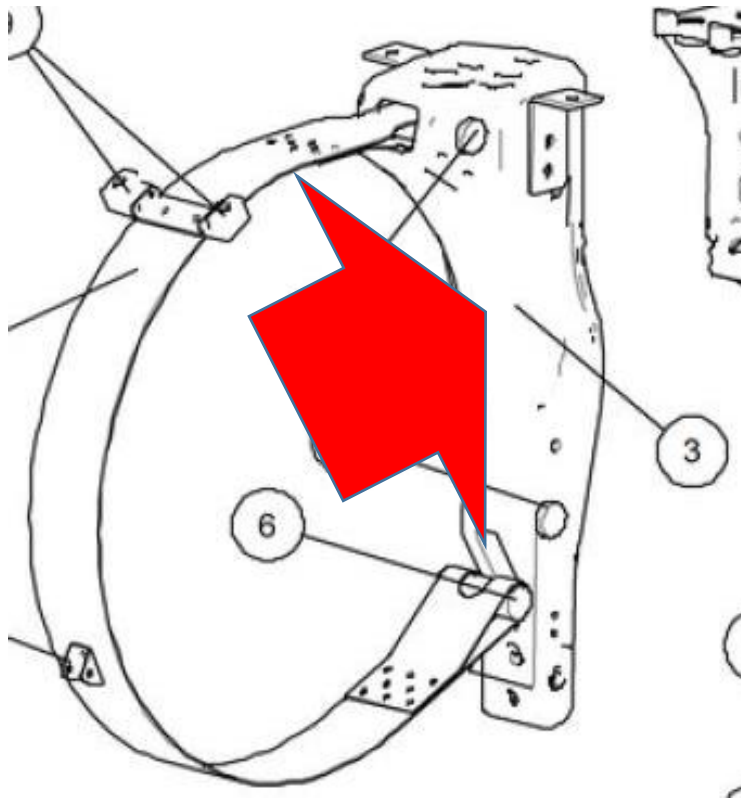


Figure 7. Strap wear area is indicated in red. (40 DGE 23710011 system shown.)

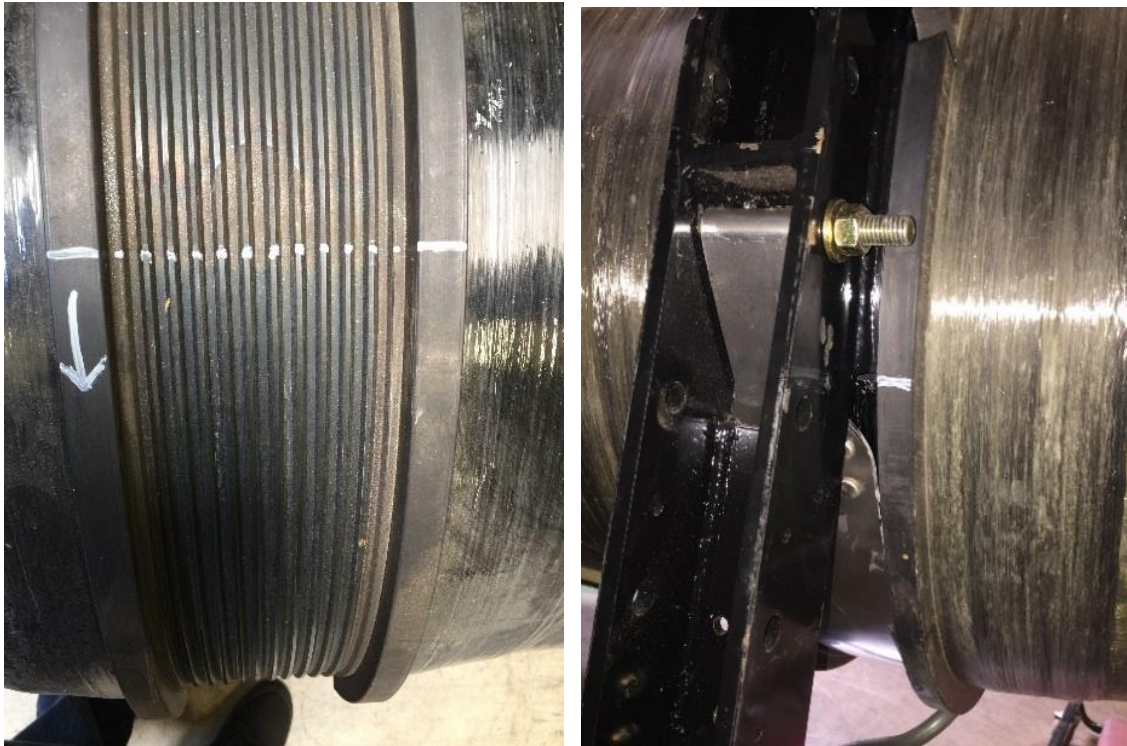


Figure 8. Mark the damaged location of the J-section of the bracket on the isolator. This area will be cut out from the cylinder. Cut out only the center section, do NOT cut the ribs on the left and right.

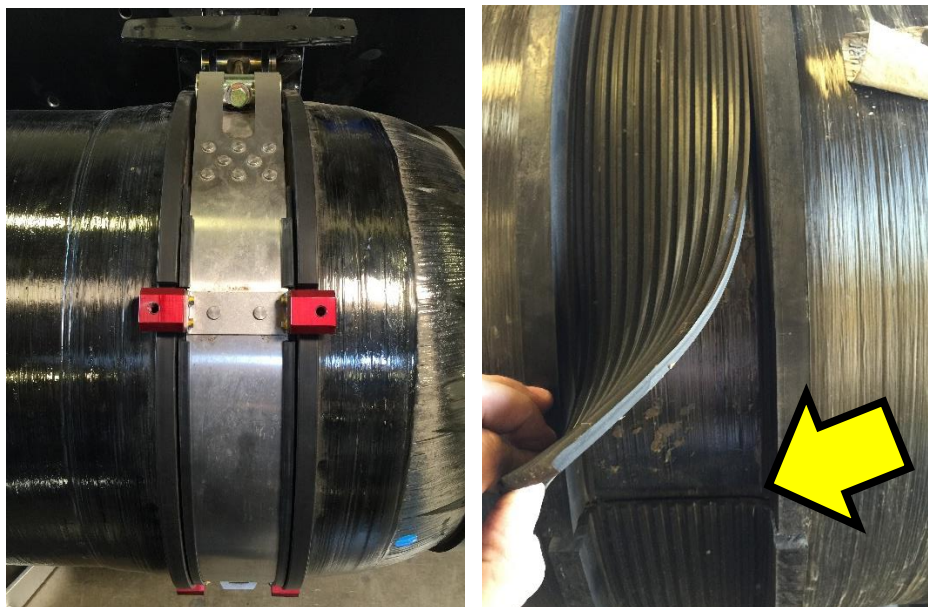


Figure 9. Left: Remove the cylinder strap. Right: Cut away the worn isolator material, leaving the side ribs intact. DO NOT cut into the cylinder housing. Apply a bead of silicone adhesive to the rubber isolator seam where the two ends meet as shown.

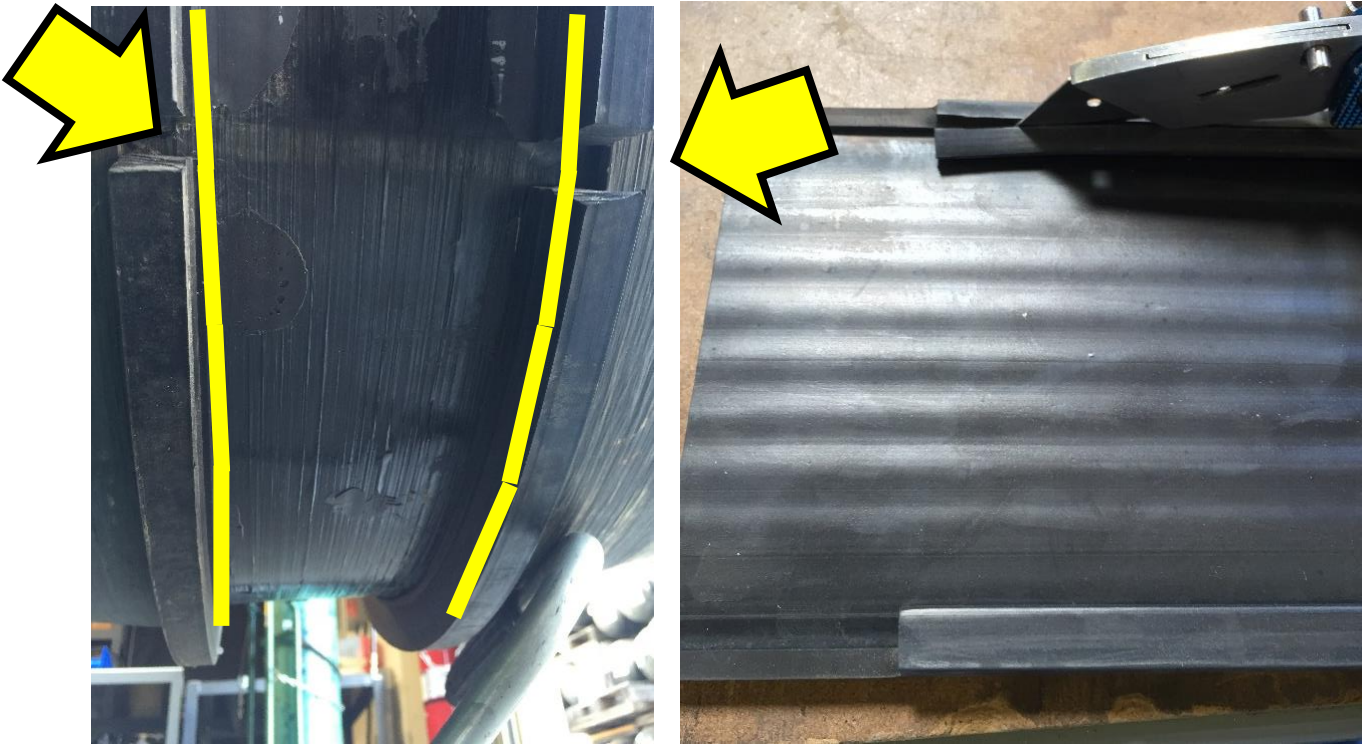


Figure 10. Left: Center section of the worn isolator is cut out, leaving the ribs on the left and right intact. Apply a bead of silicone adhesive along the inside rim as shown. Fill in any gaps with silicone (indicated by arrows on the left and right).

Right: Trim the new isolator with a sharp utility knife as needed to fit in-between the ribs on the old isolator.

2. Using a sharp utility knife, cut out and remove the **center portion** of the isolator, leaving the ribs on the left and right as shown in Figure 10.
 - a. Carefully peel away the inner section of the isolator as shown in Figures 10 and 11. A small pry bar may be needed.
 - b. Make sure to keep the side ribs intact.
 - c. If the side ribs are worn, missing or split – see section 7.
3. Cut out all damaged or worn areas.
 - a. Prevent damage to the cylinder by setting the knife's depth of cut.
4. Cut a piece of new isolator material to fit the space.
5. Clean the bracket surface and the rubber isolator patch with isopropyl alcohol.
6. Apply 3M DP620NS adhesive to the bracket with a putty knife, see Figure 10.
7. Line up the new isolator patch with top of the bracket and press it on the bracket.
8. Use a small J-roller to apply pressure along the isolator to ensure a good bond.

9. Re-install the cylinder into the system.

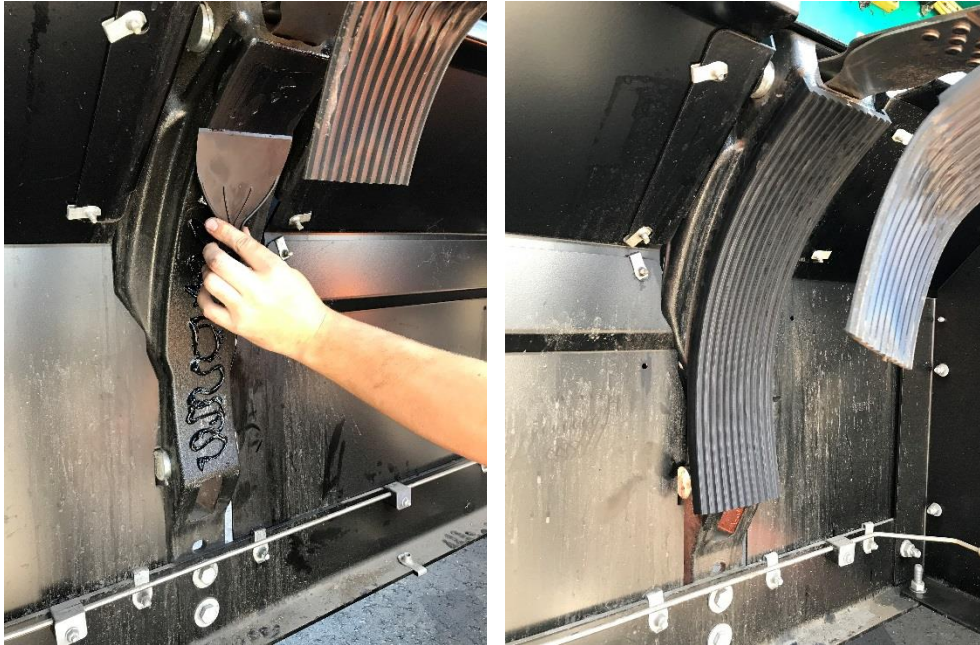


Figure 11. Apply adhesive to the bracket and spread onto the entire surface with a flexible putty knife. Right: Press the new rubber isolator for the J-bracket in place. Note: The bracket shown is mounted on a production fixture. Your exact configuration and access will be slightly different on the vehicle.

7. Worn or Split Isolator Ribs



Figure 12. Isolator ribs that are damaged or de-laminated can be patched with a section of isolator material, part number 20100149.

If the isolator ribs are split or worn, perform the following.

1. Cut off the damaged rib where it is delaminated, leaving the intact areas in place.
2. Replace the damaged portions with a piece of isolator material part number 201000149.
 - a. The large 1-in. edges are only required where the red blocks key into them to prevent cylinder rotation. See Figure 14.
 - b. Some damage can be tolerated in that piece adjacent to the mounting bracket as seen in the photos.
3. Clean surfaces and seal the repaired areas with silicone sealant as mentioned in the previous section.
4. If damage is found in the isolator at the red block attachment points, contact Customer Care and include pictures of the damage for evaluation and instructions.

Note that some amount of damage in these areas is acceptable, but must be evaluated on a case-by-case basis.

5. Have a certified or qualified cylinder inspector make a note of the repair on the inspection sheet and reference this bulletin which signifies our approval.

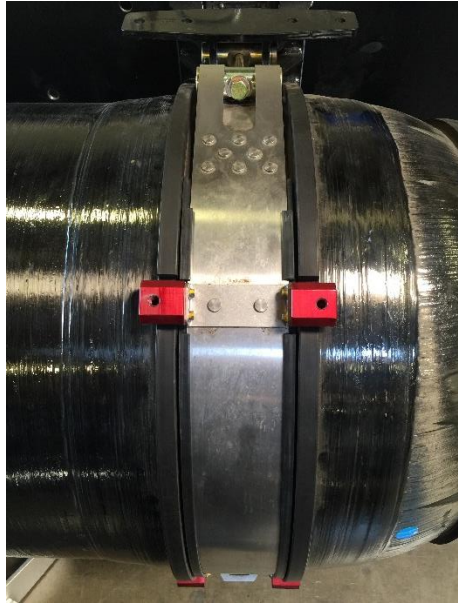


Figure 13. The isolator ribs and the red blocks are used to help prevent cylinder rotation.

8. Re-Fueling/Pressurizing and Testing/Repairing Leaks

WARNING

CAUTION

When re-fueling the empty cylinder, observe the following precautions and procedures to prevent permanent cylinder damage, personal injury or death.

- A. Under normal operating conditions, the cylinder retains a residual pressure of 300 psi to 350 psi (20.7 bar to 24.1 bar), and may be filled normally following all applicable state, local and fire codes, to a temperature compensated (70°F/21°C) service pressure.
 - B. If pressure in the cylinder falls below 300 psi (20.7 bar), the cylinder can be filled normally if the ambient temperature is above 0°F/-18°C.
 - C. If cylinder pressure falls below 300 psi (20.7 bar) and the ambient temperature is below 0°F/-18°C, the cylinder/vehicle must be warmed to 60°F/15.5°C or above, and must be filled within one-half hour.
1. Make sure the bleed valve in the FMM is closed.
 2. Open all cylinder valves.
 3. Refuel the system, observing the precautions and conditions above.

4. Turn the quarter-turn (main shut-off) valve to the OPEN position, and turn the vehicle ignition key ON. This will allow fuel to flow throughout the system.
5. Pressurize the system and perform a leak test on all components serviced.
6. Fix any leaks.

9. Re-install the Covers and System on the Chassis

1. Re-install the cover assembly parts.
2. The vehicle can be returned to service.

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.

10. Warranty Information

1. This procedure is not covered under warranty.
2. Standard repair time (SRT) is 6 hours per system (one side).

If you have any questions, contact Agility Fuel Solutions Customer Care: +1 949 267 7745, toll free: +1 855 500 2445 or support@agilityfs.com.

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