

WARNING: Do not attempt this procedure unless you have been fully trained by an accredited training organization.

PREPARATION

- Review vehicle's records for previous history.
- Collect the following required tools in order to conduct a detailed visual inspection:
 - Telescoping inspection mirror or GoPro type camera w/telescoping pole
 - Flashlight
 - Ruler or tape measure
 - Liquid leak check solution
 - Portable methane detector
 - Depth gauge
 - Two open-end wrenches and other tools required to remove cylinder shields
 - Camera (for visual documentation)
 - "Failed" inspection sticker
 - "Passed" inspection sticker
 - Inspection form and pen
- Prepare the vehicle for inspection:
 - To ensure maximum access to the cylinder area, remove all cylinder shields.
 - If unable to remove shields, you must be able to clearly visualize 360° around each cylinder using a GoPro-type camera or other device.
 - Clean all cylinders using a rag to remove any dust, dirt or loose material (if needed, use mild soap and water).



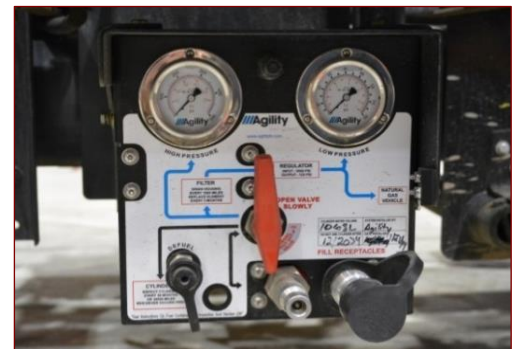
STEP 1: Fill Receptacle

- Ensure that the manufacturer label is present and intact on the fuel door or in fuel receptacle area.
- Verify there is no damage to the fill receptacle, and make sure the O-ring is present and not damaged.
- Using the liquid solution, leak check the fill receptacle and fuel system connection.



STEP 2: Secondary Check Valve, Defueling Valve and Receptacle

- Verify whether the secondary check valve is installed and secure, and then leak check the valve and its connection to the fuel system.
- Confirm that the defueling valve and defuel receptacle are installed and secure (2013 and newer vehicles).
- Leak check the defueling valve, defueling receptacle and their fuel system connections.



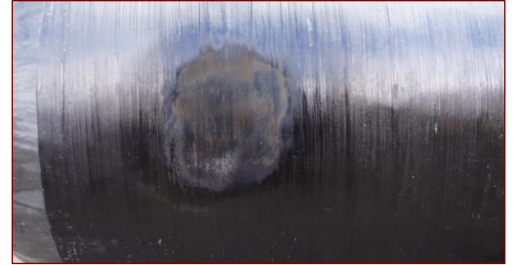
STEP 3: Cylinder Mounting Brackets

- Verify that the cylinder mounting brackets and straps are clean and in good condition, and that they are firmly restraining the cylinder. This verification should also include checking brackets for signs of stress or corrosion, the tightness and presence of the securing bolts, and the condition of the rubber gaskets.



STEP 4: CNG Cylinder(s)

- Ensure that each cylinder has the manufacturer label affixed and intact. If a label cannot be seen, use the inspection mirror or GoPro-type camera to see if the label is located out of plain view.
- Verify whether cylinder service pressure markings are not less than vehicle service pressure, and that the cylinder has not exceeded the marked service life.
- Verify if there is damage to the cylinder and access its type and level.
 - Check for signs of exposure to fire or extreme heat.
 - Check for signs of involvement in an accident or impact damage (surface discoloration, cracked resin, chipping, loose fibers).
 - Make sure Type 1 and Type 2 steel cylinders are free of rust, corrosion or etching of the outer steel surface.
 - Verify that the external paint, composite or metal surface layer are free of bubbles and bulges.
 - Using the ruler or measuring tape and depth gauge, measure the length, width and depth of all damage, including cuts, gouges and abrasions.
- Use cylinder manufacturer guidelines (or CGA 6.4 if manufacturer guidelines are unavailable) to assess cylinder damage.



STEP 5: Pressure Relief Devices (PRDs) and Vent Lines

- Verify a PRD is attached to each cylinder (each CNG cylinder must have at least one PRD).
- Be sure the PRDs are in good condition (with no visible extrusion of eutectic material).
- Make sure the PRDs have a connected vent line.
 - Verify there is no damage to the PRD vent lines and that no debris is blocking the outlet.
 - Also verify and record whether there is a cap on the end of each PRD vent line.
- Inspect and leak check the interface between the valve and cylinder, and between the PRD and cylinder port, as well as the fuel line and PRD connections to the cylinder valve.



STEP 6: Quarter-Turn Valve, High-Pressure Coalescing Filter, Fuel Shutoff Solenoid, and High-Pressure Fuel Gauge

- Verify the quarter-turn valve, high-pressure coalescing filter, fuel shutoff solenoid, and high-pressure fuel gauge are installed and secure.
- Leak check these fuel system components, their connections and fittings.



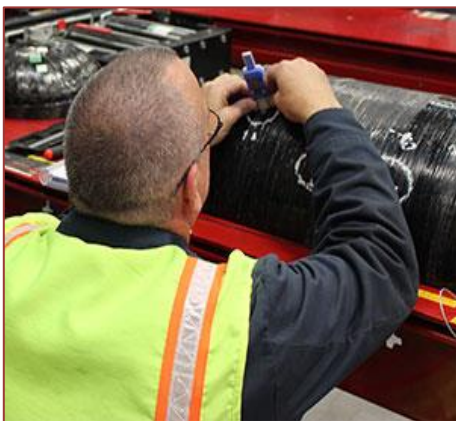
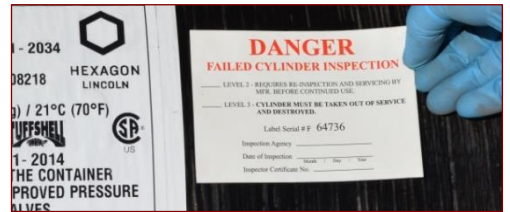
STEP 7: Pressure Regulator

- Make sure the pressure regulator, regulator PRD (or PRRD) and PRRD vent lines are installed and secured.
- Leak check all pressure regulator connections.
- Check whether the coolant lines to the regulator are connected and are not leaking coolant.



FINAL DISPOSITION

- Once the inspection is complete, determine the outcome of the inspection:
 - If cylinder(s) exhibits Level 1 damage, and all high-pressure fuel system components are undamaged and do not leak, apply a "Passed" sticker to each cylinder and return the vehicle to full service.
 - If cylinder(s) exhibit Level 2 damage, or any high-pressure fuel system components need repair or replacement, apply a "Failed" sticker to each cylinder and remove the vehicle from service. CNG cylinders with Level 2 damage may be repaired or condemned (determined by manufacturer's guidelines).
 - If cylinder(s) exhibit Level 3 damage, or any high-pressure fuel system components need repair or replacement, apply a "Failed" sticker to each cylinder, remove the vehicle from service and notify management or the vehicle owner. CNG cylinders with Level 3 damage must be defueled, removed from the vehicle, and condemned.



Level 2: CNG Fuel System Inspector Training

The National Highway Traffic Safety Administration (NHTSA) requires all on-board CNG storage cylinders to be visually inspected every three years or 36,000 miles, whichever comes first, or following any accident or fire.

This two-day session helps ensure that technicians are adequately trained to properly conduct the federally-mandated CNG fuel system inspections. It prepares technicians for the CSA Group CNG Fuel System Inspector Certification exam.

To register for this course,
go to www.ngvi.com/public_registration.html.

Do you have multiple employees who could benefit from NGVi training?

Contact Sabrina Dodd, Customer Solutions Manager by calling 702-254-4180 ext. 21 or emailing sdodd@ngvi.com, to schedule in-house training. We can present any of our featured training courses conveniently at your site.

