



**AI 3840006K001**

# **ASSEMBLY INSTRUCTION**

March, 2022

## **ATTENTION:**

Service Managers / Parts Managers.

## **REQUIRED PARTS:**

- (1) S3840006K001 Service Kit
  - (1) GZ290004-002 O-Ring
  - (1) GZ200393-001 Barb fitting
  - (2) GM042010AX14 Bolts
  - (1) A3840015-14 Power steering pump
  - (1) 8161532 Gasket

## **SAFETY NOTICES:**



### **WARNING**

To prevent eye injury, always wear eye protection when performing vehicle maintenance, service or inspection.



### **WARNING**

Before working on a vehicle, set the parking brake, place the transmission in neutral and block the wheels. Failure to do so can result in unexpected vehicle movement and can cause serious personal injury or death.



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## Working on CNG/LNG Trucks

### SAFETY INSTRUCTIONS

If you store or dispense Compressed Natural Gas (CNG) or Liquefied Natural Gas (LNG), or if you work on CNG or LNG trucks, your location must be fully compliant with applicable codes, regulations and standards, including National Fire Protection Associate (NFPA) codes, Society of Automotive Engineers (SAE) standards, American National Standards Institute (ANSI) Natural Gas Vehicle (NGV) standards, the United States Code of Federal Regulations (CFR) and your state and local fire and other applicable codes (including, for example, the California Code of Regulations and the Texas Administrative Code).

Contact your local fire department for guidance and additional compliance information.

Technicians working on Autocar trucks with CNG or LNG engines must be trained in the proper repair of CNG and LNG trucks and engines and the safe storage and dispensing of CNG and LNG.

## Working on CNG Fuel Systems



### WARNING

CNG fuel systems include a high pressure (3600 psi) system for fuel storage and a low pressure system (125 psi) for consumption by the engine. Understanding the characteristics of CNG and how the fuel system works will prevent injury and damage to persons and property.

Attempting to operate or maintain any CNG fuel system without proper training is dangerous. Complete training and consult instructional bulletins from the CNG system suppliers, such as Agility Fuel Systems' Field Service Bulletin, *Safely Working on CNG Fuel Systems*.

## Welding and Hot Work Near CNG and LNG Trucks



### WARNING

Welding, grinding, and other "hot work" can be safely performed on or near a CNG or LNG vehicle, but certain precautions must be followed. Understand and perform the necessary precautions provided by the CNG system suppliers, such as Agility Fuel Systems' Field Service Bulletin, *Welding and Hot Work Precautions Near CNG and LNG Vehicles*.



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## CNG Cylinders



### WARNING

CNG fuel containers must meet Federal Motor Vehicle Safety Standard (FMVSS) 304 (Compressed Natural Gas Fuel Container Integrity) and/or ANSI/CSA NGV2 (Basic Requirements for Compressed Natural Gas Vehicle Fuel Containers). Both standards specify a detailed visual examination every three years.

Truck owners are required to complete all necessary inspections, in accordance with the applicable standards and other resources, such as the Clean Vehicle Education Foundation and NGV America's Compressed Natural Gas (CNG) Container Visual Inspection Advisory.

FMVSS 304 also requires that cylinders not be used after the end of life (EOL) date provided on the tank label. The EOL date is also displayed in the engine compartment and at the fueling connection of each truck. If there are any question as to proper decommissioning of a cylinder, contact the manufacturer, whose name and address is also required to be on the label.

## CNG Fuel Container Pressure Relief Devices (PRDs)



### WARNING

PRDs must be properly maintained and positioned for safe operation of a CNG fuel system. Missing vent caps can allow moisture into PRDs and vent lines, which can freeze and damage these safety components. Debris which clogs the PRDs and/or vent lines can prevent proper function.

PRDs must be positioned to vent upward, not outward, from a vehicle.

Ensure that every truck owner completes periodic inspections of the PRDs and vent lines and systems, in accordance with guidance provided by the system component suppliers.

## Alert First Responders to CNG and LNG



### DANGER

In the event of a fire or other emergency, alert first responders to the presence and location of CNG fuel systems, tanks and dispensers. Ensure that emergency personnel are aware of proper precautions, such as those provided in Agility's *First Responder Guide: CNG and LNG Vehicle Fuel Systems*.



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## LOCKOUT/TAGOUT PROCEDURES:



## CAUTION

Before entering the vehicle or vehicle body, read and follow OSHA regulations concerning entry and working in “CONFINED SPACE” OSHA 1910.146 and “LOCKOUT/TAGOUT” OSHA 1910.147. Follow OSHA regulations while performing any work on the vehicle. The vehicle must be disabled by the following steps before performing any work on the vehicle:

1. Place the transmission in NEUTRAL.
2. Set the parking brake.
3. Shut the engine OFF.
4. Lock cab doors, keep the key in your pocket. Block the wheels before entering the body or performing any work on the vehicle.
5. Turn the battery disconnect switch OFF, if equipped.
6. Completely drain the air from the primary/A system and secondary/B system by opening the drain valves on the air tanks themselves or by using the drain manifold if supplied. When draining the air tanks, do not look into the area where air is draining. Dirt or sludge particles may be expelled in the air stream and can cause eye injury.
7. Place magnetic “DANGER” signs on both cab doors before entering the body or performing any work on the vehicle.
8. Take proper precautions before working under the vehicle. Use ramps approved for the weight of your vehicle, or use floor jacks and stands. Never work under a vehicle supported by jacks alone. Always use jack stands to support the vehicle.



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## **REMOVE THE POWER STEERING PUMP**

1. Follow all lockout/tagout procedures and verify the battery disconnect switch is in the “OFF” position. If the unit is not equipped with a battery disconnect switch, disconnect the battery cables beginning with the negative cables, followed by the positive cables.
2. Raise the cab in accordance with the following safety precautions and procedures.



### **WARNING**

Due to the danger of sustaining personal injury and/or damage to the vehicle, never attempt to raise the cab outdoors under extremely windy conditions. The strong wind conditions could force the cab beyond the normal limits of its travel.



### **WARNING**

Remove or secure all loose articles and close all doors before raising the cab. The area above and ahead of the cab must be clear from obstructions. Place front wheels in a straight ahead position.

Remove the pump handle from its storage on the inside of the cab near the driver or passenger seat.

Place the selector lever on the hydraulic pump in the RAISE position. Insert the pump handle into the pump and operate the handle in an up and down motion. The hydraulic cab latches will open, then the hydraulic cylinders will lift the cab until the midpoint (top) is reached.

Once the cab has reached its midpoint the cab will move forward to the fully open position. The safety pin in the cab tilt lock device must be installed when the holes line up in the sliding bar.

Remove the pump handle when not in use. It may stick out and could cause injury to passersby.



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3. Raise the front of the vehicle and place it on jack stands of adequate rating.
4. Place a drain pan under the power steering pump.



## WARNING

Allow the vehicle's engine and cooling system to cool to ambient temperature before performing the repair procedure. A hot engine or cooling assembly may cause burns or other personal injury.

5. Disconnect the two hydraulic hoses from the pump.
6. Drain the steering fluid.

***Note: Dispose of used fluid in accordance with state and local regulations.***

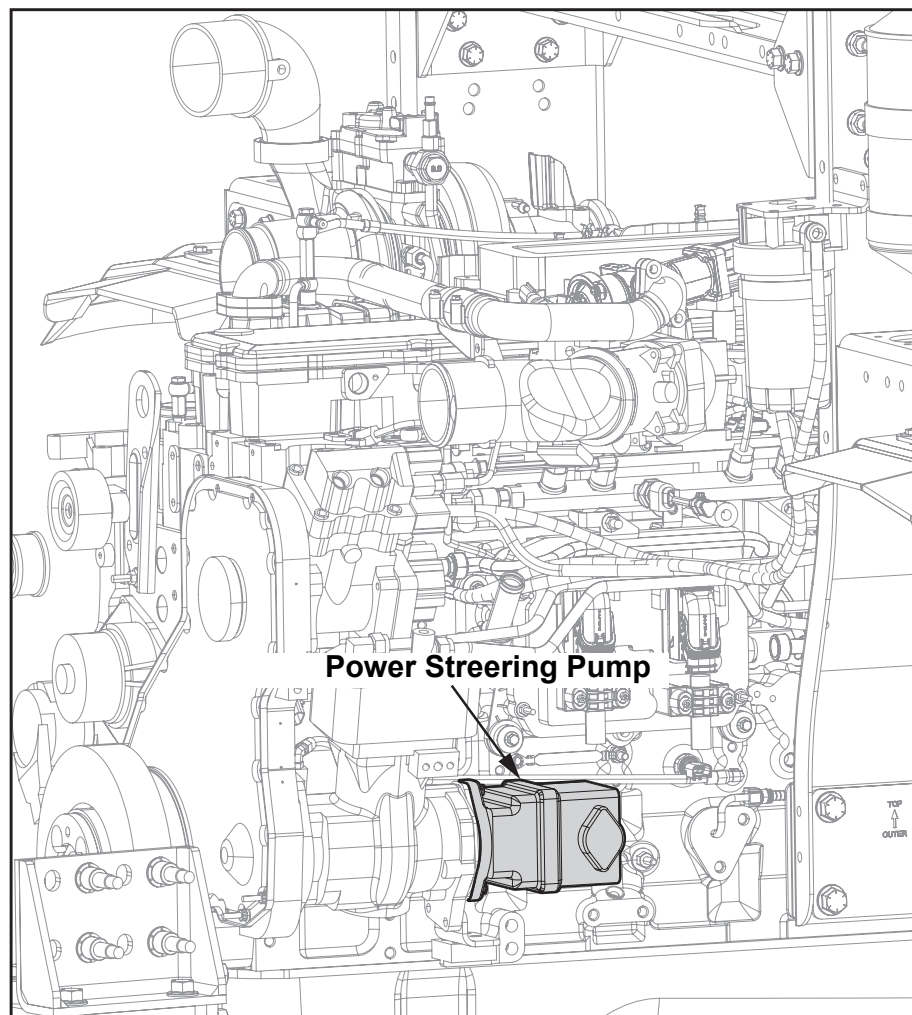
7. Plug or cap all openings on the pump to prevent spillage.

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8. Remove the two mounting bolts and washers from the power steering pump and discard. Remove the hose fittings from the power steering pump, discard the barb fitting and set the JIC fitting aside for reinstallation (see *Figure 1*).
9. Remove the power steering pump and gasket from the engine and discard the gasket. **Record the power steering pump serial number on your repair order and retain the power steering pump until your warranty claim has been paid** (see *Figure 1*).



**Figure 1**

10. Using a clean shop towel, clear away any debris from the gasket surfaces on the engine.

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## INSTALL THE NEW POWER STEERING PUMP

11. Remove and discard the original O-ring and install the GZ290004-002 O-Ring onto the JIC fitting (set aside in step 8), install the JIC fitting and the GZ2002393-001 Barb fitting into the A3840015-14 power steering pump. Verify the fittings are properly oriented.
12. Install the new 8161532 gasket onto the power steering pump.
13. Using (2) GM042010AX14 bolts (apply blue thread locking compound obtained locally), install the power steering pump on the engine and tighten to 45 Lb.-ft. of torque (see Figure 2).

**Note:** The A3840015-14 Power Steering Pump may not have the same port locations as the pump removed. This is an intentional change along with the Barb fitting to increase routing, clipping and installation clearances.

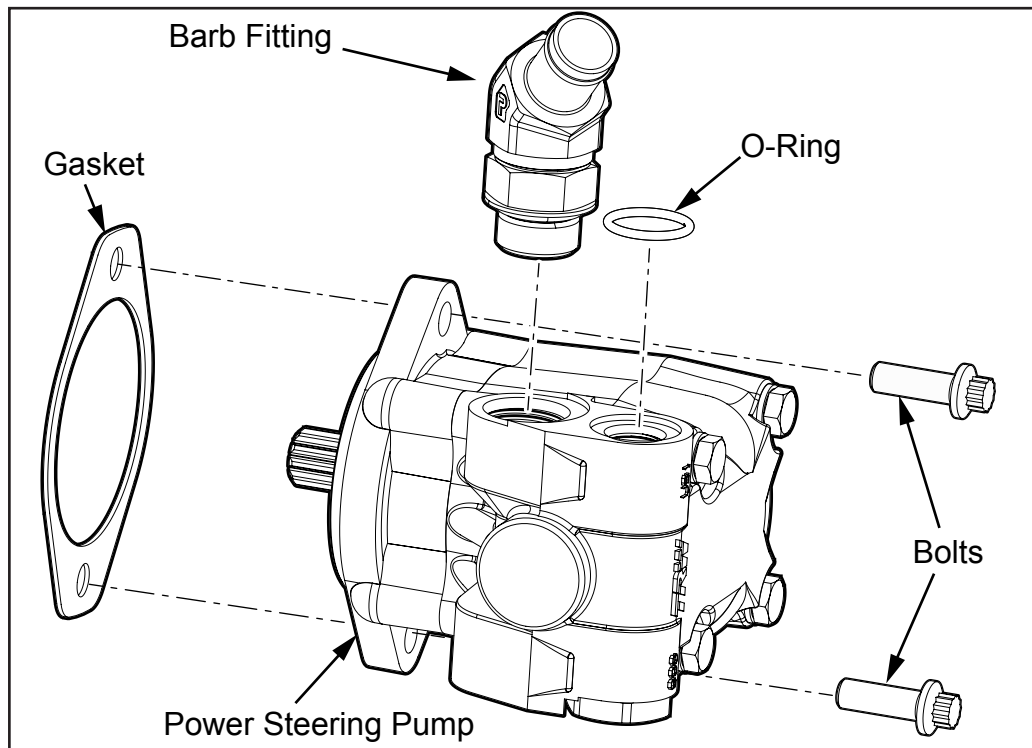


Figure 2

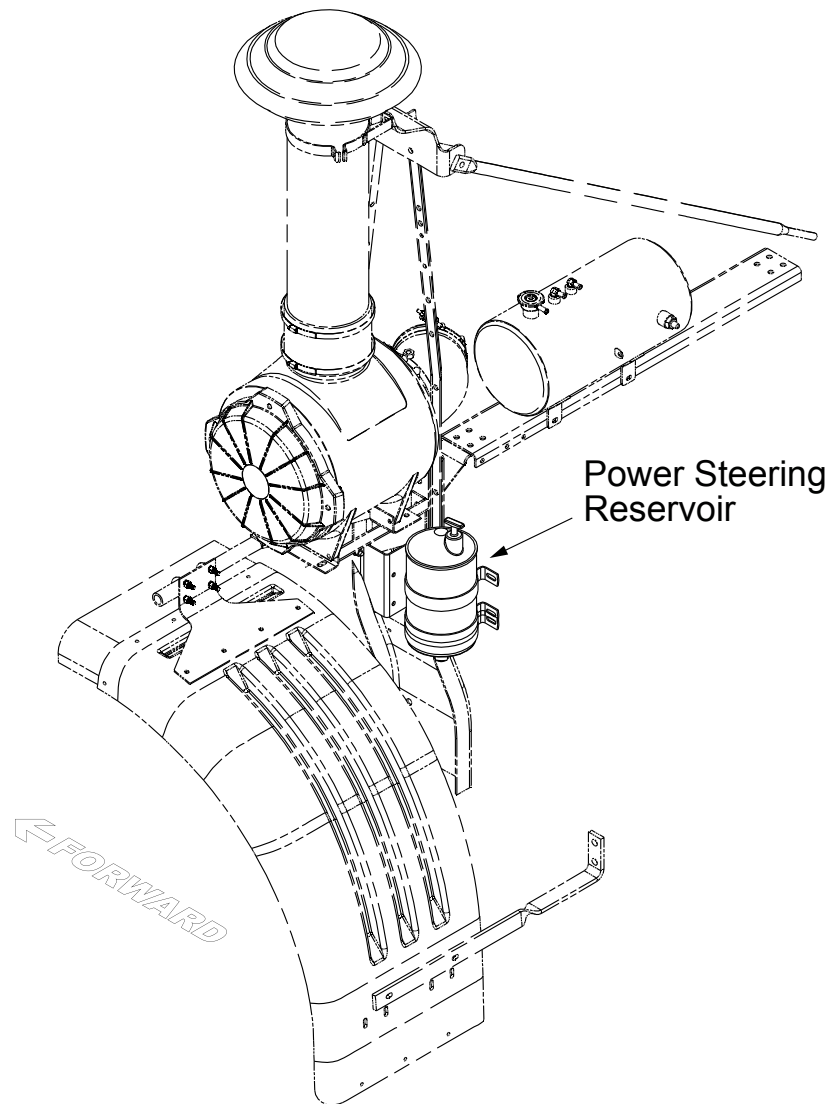


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14. Connect the two hydraulic hoses that were removed in step 5 and verify the hydraulic hoses are routed to prevent rubbing and chafing.
15. Turn on the battery disconnect switch or re-connect the battery cables beginning with the positives cables followed by the negative cables.
16. Locate the power steering reservoir, mounted either on the left or right side of the vehicle's upright support (see *Figure 3*).



**Figure 3**

***Due to product variations the illustration may vary from your specific configuration***



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17. Log in to the Autocar Warranty Management System at [www.autocartruck.com](http://www.autocartruck.com). From the main menu, select “View Recalls/Service Programs” and locate SB 6-383-002 Power Steering Air Bleed Procedure. Complete the instructions as required.
18. Verify there is no leakage in the system.
19. Lower the vehicle and lower the cab.
20. Perform a functional test of the power steering system. With the engine at idle turn the steering to full left and full right wheel cut to verify function.
21. Repairs are complete.

***Note: If the functional test fails or you have questions or concerns regarding this assembly instruction, please contact Autocar Technical Support at 888-218-3611.***