



VSR-WI-004-A-Replacement Procedure

NHTSA Campaign Number: 19V-656

Vehicle Safety Recall - Technical Service Bulletin
Replacement Procedure
PROMPT ACTION REQUIRED

Attention: McNeilus Service Technicians

Subject: Pressure Relief Device (PRD) on CNG Tank

Models Affected: McNeilus Refuse Rear Loaders, Front Loaders, Side Loaders, and Aftermarket Parts sold for non-McNeilus vehicles fitted with Emcara PRD valves on the CNG Tanks

Date: November 2019

Purpose:

McNeilus Truck and Manufacturing, Inc. has been alerted by our supplier that a concern affecting safety exists in some Emcara Pressure Relief Device (PRD) valves on CNG tanks (for your information, Emcara’s NHTSA Recall number is 15E059). Some McNeilus Refuse models were shipped with an Emcara CNG PRD which may not vent properly. The purpose of the thermal PRD is to relieve pressure in the CNG system if the CNG tank is reaching an unsafe level of pressure, as might occur with a thermal event that heats up a tank. In the event of a thermal event, the thermal PRD may not vent properly, which increases the likelihood of a CNG tank over-pressurizing and rupturing. A tank rupture creates an increased risk of fire and injury to the truck occupants, firefighters, or bystanders.

Affected Vehicles:

The affected vehicle population is PRD valves fitted on tanks assembled by McNeilus between 2013 and 2018 and are PRD valves with serial numbers as found in the attached list. Use VSR-WI-003-A to inspect the serial numbers on the PRD valves.

As of April 2016, certain PRD valves only need the pin inspected. See Table 1 for a PRD valve serial number list of PRDs that only need the pin inspected (found at the end of this bulletin). Follow the procedure in Appendix A to inspect the pin and repair or replace as needed.

See Table 2 for a PRD valve serial number list of PRDs that require block replacement and pin inspection (found at the end of this bulletin).

Time Completion:

Affected units shall be repaired using McNeilus qualified service technicians - at no cost to the owner. The time of accomplishment may vary due to a number of factors; however, the estimated time for completion of the procedure is 6.0 hours under normal circumstances.

This work instruction is limited to Internal McNeilus Use Only.

Required Action:

Review and verify the ownership of all affected serial numbers of trucks. If McNeilus records indicate the owner of one or more affected units, a Serial Number List is enclosed. Please be reminded that it is a violation of Federal law for companies to sell or lease the CNG systems or vehicles that use CNG systems covered by this notification until this recall has been performed on these vehicles. Substantial civil penalties apply to violations of this law.

Contact:

If you have questions or need further information, please contact a National Service Representative at 888-686-7278.


Special Instructions:

For all PRD valves replaced, be sure to record the old and new PRD valve serial numbers, the VIN of the truck, and body serial number on the JDE Work Order.

Enclosures:

- PRD Valve Replacement Procedure
- CNG PRD Valve Replacement Fuel Release Tracking Sheet
- List of Affected Serial Numbers/Vehicles

SAFETY NOTICE
Perform your company's Lockout/Tagout procedure. If your company does not have a Lockout/Tagout procedure, follow OSHA 1910.147 and 1910.146 Confined Space as appropriate.

 WARNING
Wear proper Personal Protective Equipment (PPE) such as hard hats, safety glasses or goggles, sturdy gloves, hearing protection, steel toed boots, and snug fitting sturdy long-sleeve shirt and long pants when operating, fueling, defueling, or maintaining the truck.
Reflective clothing is recommended for drivers and employees.
Serious personal injury or death can result without proper PPE.

 WARNING
Use proper fall protection equipment and training when inspecting or maintaining the CNG cylinder on the truck.
Failure to use proper fall protection equipment may result in serious personal injury or death.

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PROCEDURE: Emcara PRD Valve Replacement

Read the entire procedure before beginning.

Tools and Equipment Required:

- PRD serial number tracking sheet
- Cleaning supplies
 - warm water
 - mild dish soap
 - large scrub brush or mop with a long handle
 - small, soft bristle scrub brush
- 1/4” manual tube bender
- White lithium grease
- Torque wrenches
- Various hand tools
- 7/8” crows foot wrench
- Leak detection solution
- System Field Inspection Tool Kit (LT100) (Emcara PN A0005)
 - Includes one each of magnetic ball holder, pressure simulator, pin cap tool, pressure simulator shim
- O-ring (2-016, V1476) for retainer nut (Emcara PN C0167) (if needed)

Parts Required Dependent upon CNG System Configuration (order from McNeilus):

Choose the parts required based on the CNG system you are working on.

Item	Part Number	Description	Qty.
1	1489155	PRD, Emcara, 96” 75 DGE Roof Mount System 26x90 Frame Mount System	Varies (determined by inspection procedure)
2	1487827	PRD, Emcara, 72” 60 DGE Front of Body Mount System 60 DGE Back of Cab Mount System 75 DGE Back of Cab Mount System 26x60 and 26x80 Frame Mount System	Varies (determined by inspection procedure)
3	1514220	26” (x120) Frame Mount System	Varies (determined by inspection procedure)
<u>Parts to Purchase if Needed</u>			
4	1462077	20 ft. Defueling Hose	1
5	1464662	50 ft. Defueling Hose	1

Procedure A: Preparation

- IMPORTANT:** The inspection procedure from VSR-WI-003-A-Inspection Procedure bulletin determined which PRDs were in the serial number range and needed to be replaced. Use the information procured from the inspection procedure to determine which PRDs to replace.

IMPORTANT: Read the entire bulletin before starting the procedure so that you can gather all of the necessary parts and equipment.

- Place unit on a flat surface, block truck tires, and observe all conditions of the Safety Notice concerning Lockout/Tagout posted in this bulletin. Contact McNeilus Truck and Manufacturing, Inc. at 888-686-7278 if you have any questions.

- Battery Disconnect Switch**

If your vehicle is equipped with a BATTERY DISCONNECT switch, it is located near the battery box. Use the battery disconnect switch when performing any maintenance so the vehicle cannot accidentally be started.

- Turn the battery disconnect switch (Figure 1, Item 1) counterclockwise so the hole on the switch aligns with the hole in the bracket (Figure 1, Item 2).
- Install the safety lockout device ring (Figure 2, Item 1) through the holes on the battery disconnect switch and the bracket.
- Install a padlock (Figure 2, Item 2) onto the safety lockout device ring, lock it, and put the key in your pocket. If more than one person is working on the vehicle, each person must install his or her own padlock.

Battery Cable Disconnect - No Switch Application

If your vehicle is not equipped with a battery disconnect switch, disconnect the negative (black) battery cable first, then disconnect the positive (red) cable.

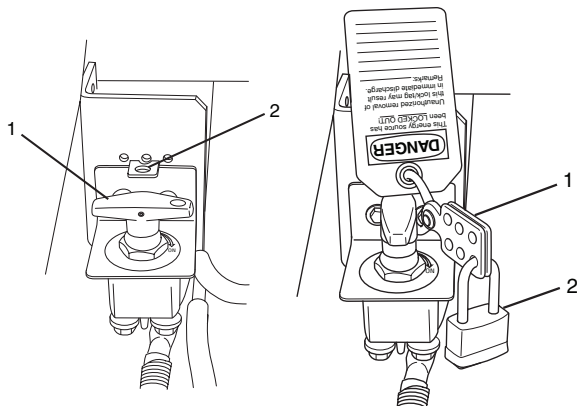


Figure 1

Figure 2

⚠ WARNING
<p>For trucks without a battery disconnect switch, to prevent accidental vehicle start-up, which could cause death or serious injury, disconnect battery cables (negative cable first) before proceeding.</p> <p>Disconnect negative (-) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury.</p>

- You must use the proper fall protection equipment when working on this bulletin. Contact McNeilus Truck and Manufacturing, Inc. at 888-686-7278 if you have any questions.

⚠ WARNING
<p>Use proper fall protection equipment and training when inspecting or maintaining the CNG cylinder on the truck.</p> <p>Failure to use proper fall protection equipment may result in serious personal injury or death.</p>

Procedure B: Defueling the CNG Tanks

All CNG tanks in the CNG system must be depleted of all fuel before replacing the PRD valve(s).

⚠ WARNING

The defueling process must occur outside, away from flammable materials.

Failure to comply could result in an explosion and serious personal injury or death.

There are multiple methods to defuel the CNG tanks in the CNG system. Choose the method that is appropriate for the equipment you have. Read the entire Procedure before beginning.

- **Defueling Requirements**

The most important information with defueling is ensuring the technician's safety which requires training and careful attention to using proper procedures. Defueling is not something technicians should "figure out" when it is time to perform it, but requires significant preparation. Every facility that services CNG vehicles should prepare for defueling ahead of time, especially in case emergency defueling becomes necessary.

⚠ WARNING

Basic Rules for Defueling

- Deplete as much fuel as possible prior to defueling
- Notify appropriate nearby personnel prior to defueling
- Always ground (earth ground) the vehicle and the fuel system being defueled
- Never defuel indoors
- Always defuel in a well-ventilated area (outside)
- Always wear personal protective equipment such as safety glasses, gloves, safety shoes, hard hats
- Be familiar with evacuation routes

Failure to comply could result in serious personal injury or death.

⚠ WARNING

Even if the truck has stalled after running it out of fuel, and you think all fuel has been depleted, check the high pressure gauge to make sure it is at zero.

If the gauge is not at zero, continue to deplete the fuel until the gauge reads zero.

Failure to comply may result in serious personal injury or death.

Step 1: Defueling Options

Choose one of the following options:

Option 1: Run truck as low on fuel as possible. Once the fuel level has been depleted as much as possible, remaining fuel shall be depleted during Step 2: Defueling Options. Continue at Step 2: Defueling Option.

OR

Option 2: Use vehicle to vehicle defueling to reduce pressure as far as possible (see Vehicle to Vehicle Defueling Procedure Set-Up).

Vehicle to Vehicle Defueling Procedure Set-Up

Defueling Hose for Vehicle to Vehicle Defueling

A defueling hose is used to transfer CNG fuel from a supplying (defueling) vehicle to a receiving (fueling) vehicle. There are two different length defueling hoses available from McNeilus Truck and Manufacturing, Inc.

20 foot defueling hose is part number 1462077

50 foot defueling hose is part number 1464662

1. A defueling hose can be used only if one of the vehicles is equipped with a defueling receptacle. The supplying vehicle must have the defueling valve.
2. In order for the CNG fuel to flow, the tank pressure in the supplying vehicle must be higher than the tank pressure in the receiving vehicle.
3. Open access doors on the fuel control module on both vehicles.
4. Before connecting the defueling hose to either vehicle, open the purge valve on the defueling hose to release any pressure that may be in the hose. Close the purge valve after pressure is released.
5. Turn the defueling control valve to the **Normal Operation position** to release pressure in the defueling circuit. This also allows the hose's defueling nozzle to be connected to the defueling receptacle. It is not possible to make the connection if the valve is not in the Normal Operation position.
6. Connect the hose's defueling nozzle to the defueling receptacle of the supplying vehicle (Figure 3) by pulling back on the quick connect collar on the hose and pushing it onto the vehicle's coupler.

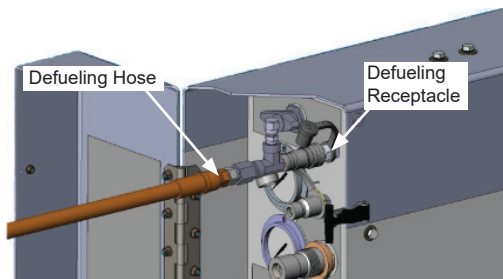


Figure 3: Defueling hose attached to defueling receptacle on supplying vehicle.

7. Connect the hose's fueling nozzle to the fueling (NGV1) receptacle on the receiving vehicle.
8. Slowly turn the defueling control valve on the supplying vehicle to **Defueling Enabled** to initiate the flow of CNG fuel from the supplying vehicle to the receiving vehicle.
9. Adjust this flow to a steady flow rate. Too fast of a flow rate will cause the system to freeze up.
10. When fuel stops flowing, check the gas pressure by reading the high pressure gauges of both vehicles. Both CNG tank pressure gauges should equalize.
11. Stop the flow of CNG fuel by turning the defueling control valve to the **Normal Operation position**.
NOTE: Pressure in the defueling hose is vented so that the hose can be disconnected.
12. Disconnect the fuel hose from the supplying vehicle by pulling back on the quick connect collar on the hose and pulling the hose away from the vehicle's coupler.
13. Continue at Step 2: Defueling Options.

Step 2: Defueling Options

Once the vehicle is equipped with the defueling receptacle, there must be an approved place to put the natural gas fuel removed from the vehicle. The following are the three most common defueling options.

- Option 1: Defueling with a Defueling Panel (Atmospheric Venting)

The first thing to check when using this method is your local air quality regulations. There may be local air quality regulations regarding the release of methane into the atmosphere. If atmospheric venting is acceptable in the area, then a vent stack apparatus that meets the requirements established in either the Uniform Building Code or the International Building Code must be followed. The local authority having jurisdiction—typically the Fire Marshal—should be consulted. Both the vehicle and the fuel system must be grounded (see 2.1 Grounding Information below). If you use this method, you must fill out the *CNG Fuel Release Tracking Sheet* attached to this bulletin and return it to the e-mail address listed on it.

If you have a MA10 Fuel Box system, remove the defueling 3-way valve.

- Option 2: Defueling with a Defueling Panel (Compressor Inlet Method)

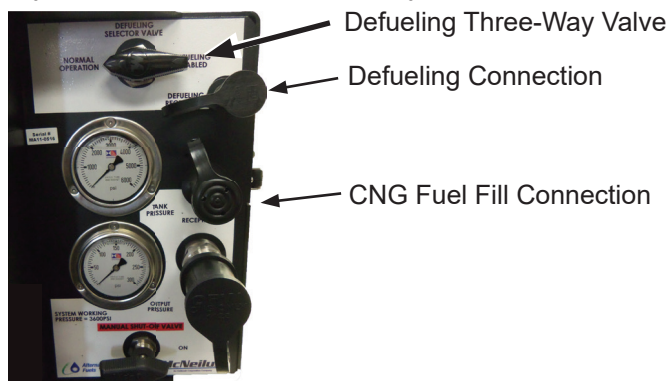
By far the easiest method, this procedure requires pre-planning and special equipment installed at the CNG fueling station. If there is not a fueling station at the site where the technician is working on the vehicle, it is required to tow the vehicle to the facility to repair after defueling. In this method, the vehicle is connected through the defueling nozzle to the defueling panel and the compressor at the fueling station extracts the gas from the vehicle. The vehicle and its fuel system must be grounded.

If you have a MA10 Fuel Box system, remove the defueling 3-way valve.

- Option 3: Defueling with a Defueling Panel (Vent Back to Gas Main Method)

The least common method, venting back to gas main, requires pre-planning and specialized equipment. The local gas utility would install special valving, regulation, and piping that allows the gas to be put back into the distribution system. This process works on the basis of pressure equalization between the vehicle and the utility system, so it is possible that there will still be pressure in the vehicle's onboard fuel system. As in the other defueling methods, both the vehicle and the fuel system must be grounded during the process.

If you have a MA10 Fuel Box system, remove the defueling 3-way valve.



Step 2.1: Grounding Information

⚠ WARNING

The tank must be grounded before venting. The venting orifice must be grounded with a 3-gauge wire minimum to an appropriate ground source at least eight (8) feet (2.44 meters) in the ground.

Failure to comply may result in serious personal injury or death.



Illustration of a grounding rod in the ground.

Procedure C: Cleaning the CNG Tanks and Fittings

The CNG tanks and fittings must be cleaned before replacing the valve(s) to reduce the risk of contamination to the tubes.

1. Use warm, soapy water, a mop, and a soft bristle brush to clean the tanks, tubes, and fittings.
2. Rinse the components well with clean water.

NOTE: A garden hose works well to wet and rinse off the area.

Procedure D: Removing CNG System Covers

NOTE: Two people are needed during the procedure.

NOTE: Wear proper PPE, including gloves.

Procedure 1. Removing CNG System Covers for Roof, Front of Body, Back of Cab

Remove the CNG covers (Figure 4 and Figure 5) and set aside.

Roof Mount, Front of Body, and Back of Cab CNG Systems this page

Figure 4

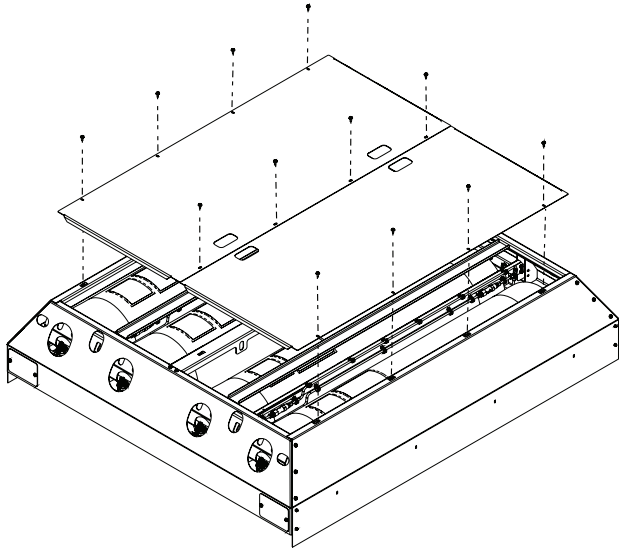


Illustration represents removing all covers from the **Roof Mount** CNG tank configuration.

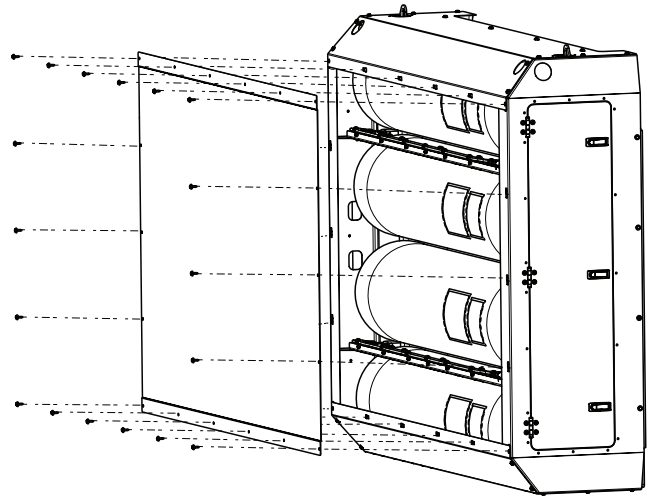


Illustration represents removing the cover from the **Front of Body** CNG tank configuration.

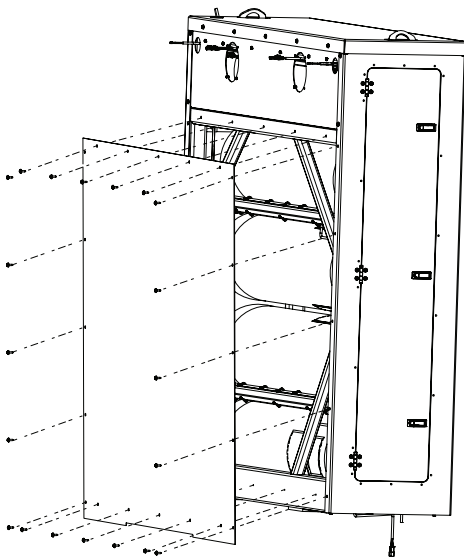


Illustration represents removing the cover from the **Back of Cab** CNG tank configuration.

Procedure 2. Remove CNG System Covers for Tailgate CNG System

Use two people to remove and reattach the cover sheets on the tailgate CNG system.

1. Remove and retain the (7) fasteners from the tailgate light bar (Figure 5 shows light bar).

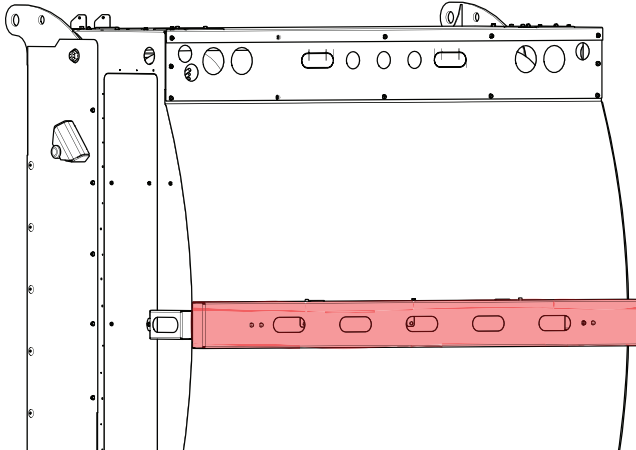


Figure 5

2. Disconnect the wiring breakout (not shown) from the light bar.
3. Remove and retain the L-shaped cover brackets and their fasteners (3) (Figure 5-2).

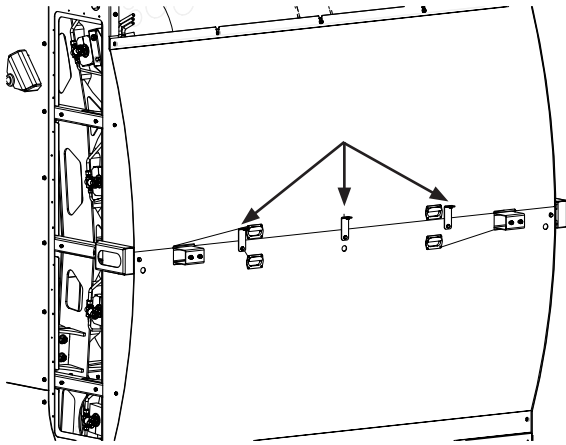


Figure 5-2

4. Remove and retain the (9) bottom fasteners holding bottom cover sheet in place (Figure 5-3).

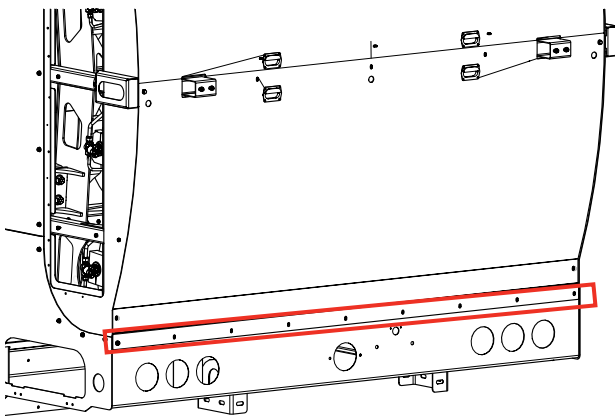


Figure 5-3

5. You need a second person for the next steps. One person needs to hold the bottom cover sheet by its hand holds while the second person removes and retains the remaining (4) fasteners on the bottom cover sheet (Figure 5-4).

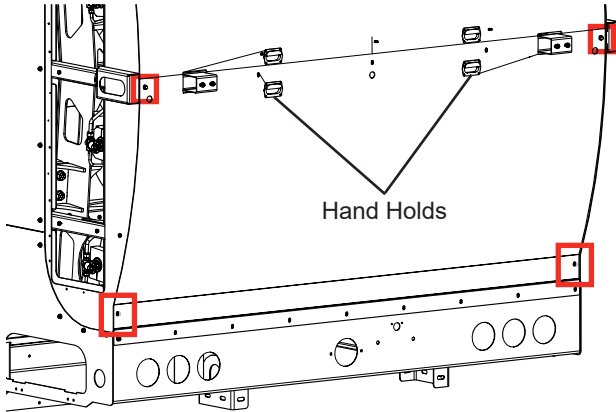


Figure 5-4

6. Remove the bottom cover sheet from the tailgate CNG assembly. Lay the cover sheet down on the floor with the outside face of cover upwards. Be careful not to trip over or step on the cover.
7. Remove and retain the (5) top fasteners from top cover sheet (Figure 5-5). The top cover sheet should be held in place at the top underneath the upper light fixture sheet (Figure 5-5).

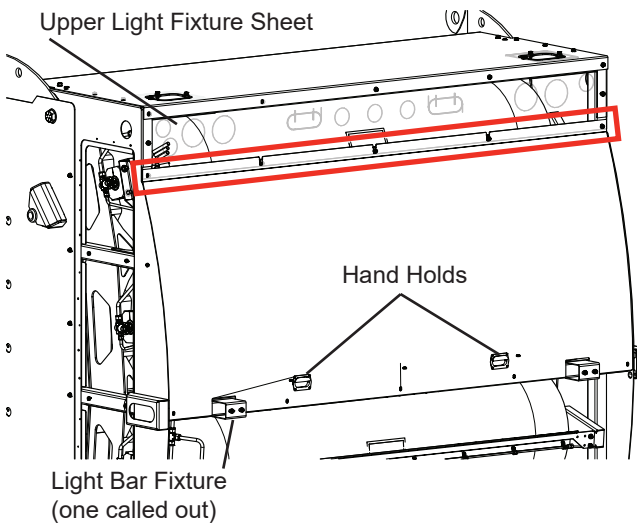


Figure 5-5

8. Use a second person to help remove the top cover sheet. Use the hand holds on the top cover sheet to slide the top cover sheet outward and down (over the light bar fixture). Remove from the top cover sheet from the tailgate. Lay the cover sheet down on the floor with the outside face of cover upwards. Be careful not to trip over or step on the cover.

Procedure 3. Remove CNG System Covers for the Frame Mount

1. Remove the back CNG cover and its hardware (Figure 6) and set aside.

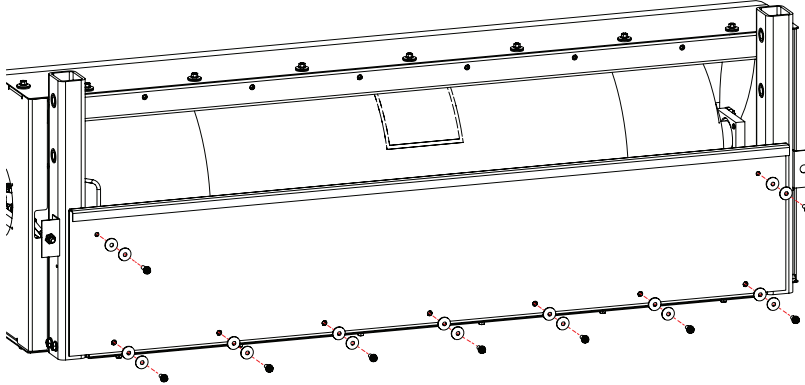


Figure 6: Remove and retain the back CNG cover and its hardware.

Procedure E: Removing the Existing PRD Assembly

Procedure 1. Removing Existing PRD Assembly for Roof, Front of Body, Back of Cab, and Tailgate Mount Systems only

Typical PRD locations are shown in the Figures below. Your exact configuration may vary from these pictures. Repeat Procedure E for each PRD assembly that is determined to be in the suspect range.

CAUTION

Support the full length of the PRD trigger line when working on it or the PRD block. Do not allow the trigger line and wire to twist or kink. Twisting or kinking will ruin the trigger assembly and the entire PRD will need to be replaced.

1. Disconnect the two fittings (feed fitting and vent fitting) from the PRD body (Figure 7). The vent fitting and the vent line can be removed from the assembly and set aside for reconnection. The feed line can dangle.

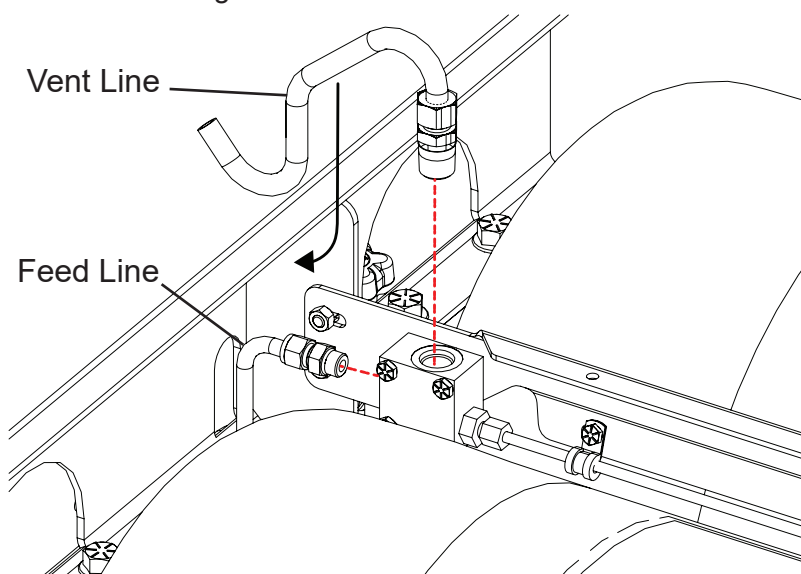


Figure 7: Disconnect the fittings from the PRD. The vent line can be removed from the assembly and set aside for later reconnection.

2. Remove and retain the (4) bolts and nuts that secure the rail to the CNG mount structure. Do this at both the PRD side and at the end of the trigger line (Figure 8).

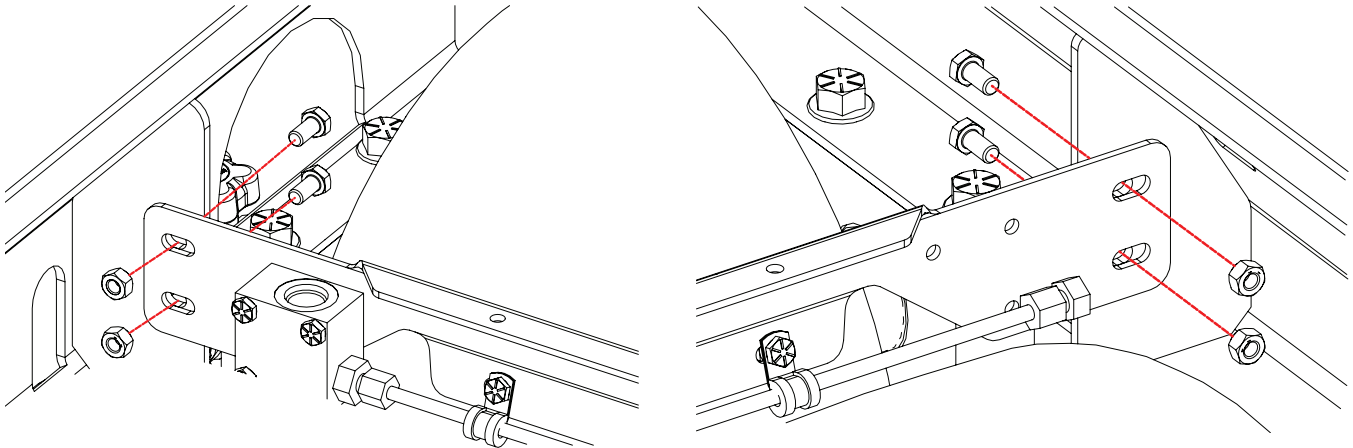


Figure 8: Remove and retain the bolts and nuts that secure the rail to the CNG system mount.

3. Place the rail on a work bench or on the floor.
4. Remove and retain the (3) bolts and nuts that secure the PRD to the rail (Figure 9).

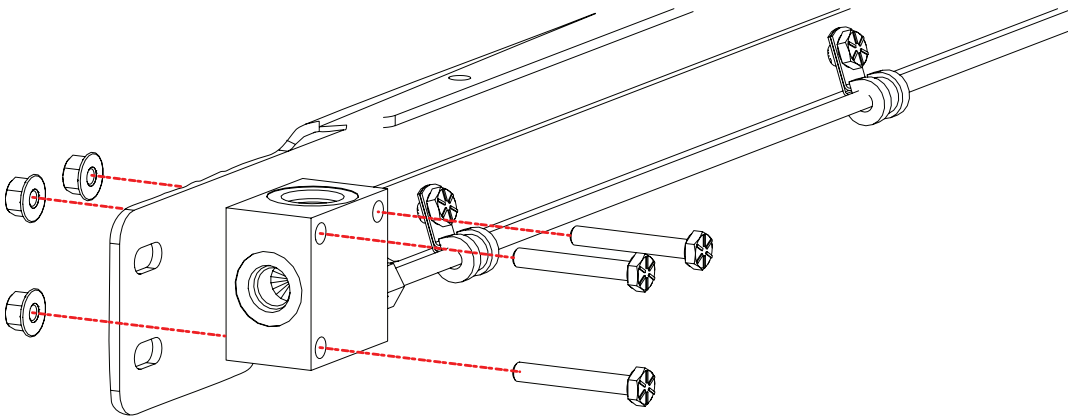


Figure 9: Remove and retain the three bolts and nuts that secure the PRD to the rail.

5. Remove and retain the bolts, nuts, and loom clamps that secure the trigger line to the rail (Figure 10). Quantity is dependent upon the CNG system and length of the trigger line/rail.

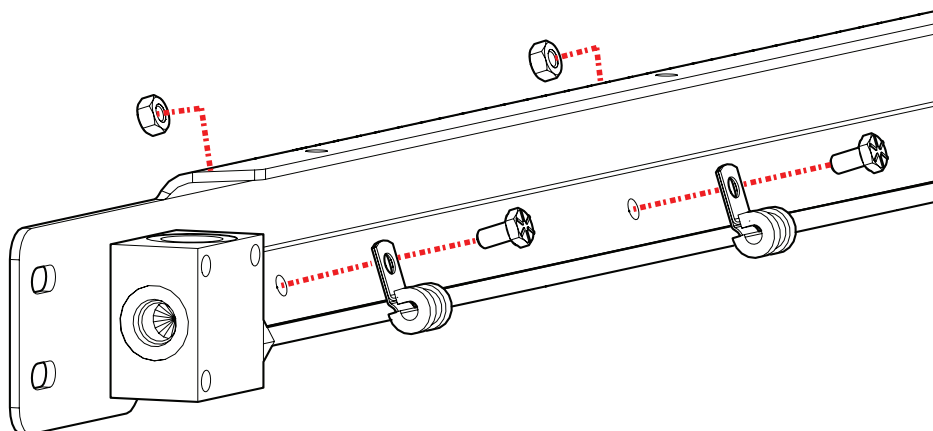


Figure 10: Remove and retain the bolts, nuts, and clamps that secure the trigger line to the rail.

6. Set the PRD and trigger line aside.

Procedure 2. Removing Existing PRD Assembly for Frame Mount Systems only

Typical PRD locations are shown in the Figures below. Your exact configuration may vary from these pictures. Repeat Procedure E for each PRD assembly that is determined to be in the suspect range.

1. Disconnect the two fittings (feed fitting and vent fitting) from the PRD body (Figure 11). The vent fitting and the vent line can be removed from the assembly and set aside for reconnection. The feed line can dangle.

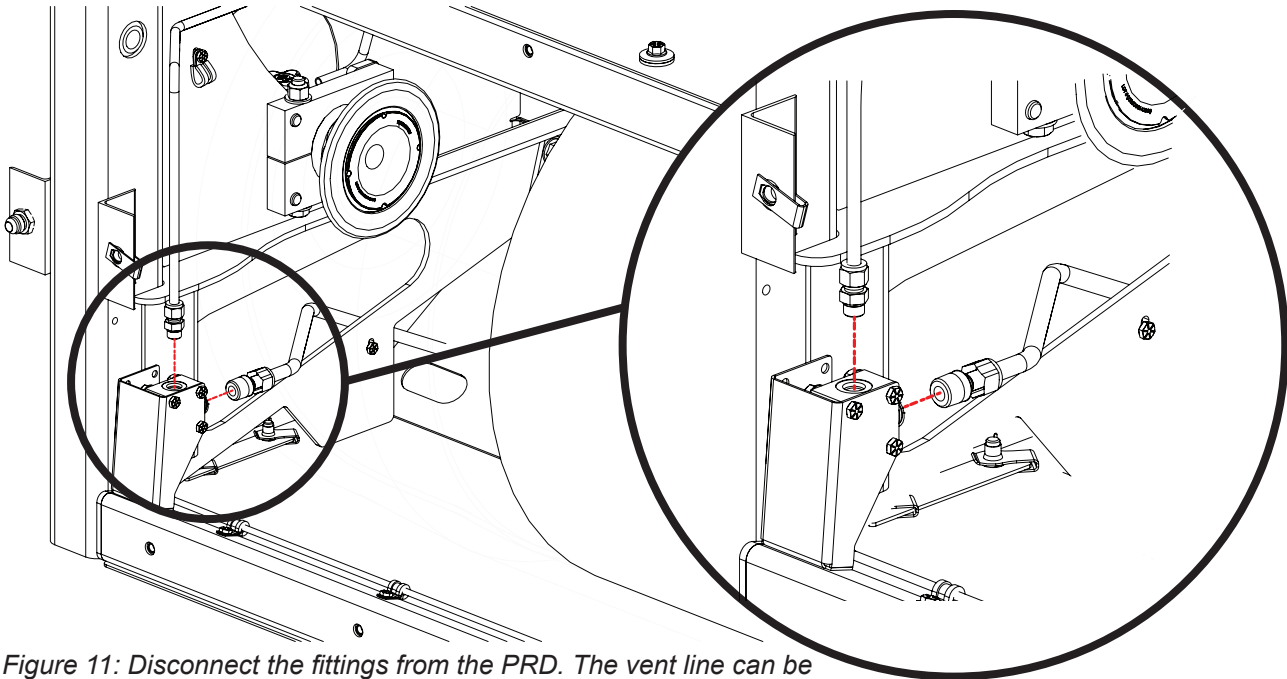


Figure 11: Disconnect the fittings from the PRD. The vent line can be removed from the assembly and set aside for later reconnection.

2. Remove and retain the (3) bolts and nuts that secure the PRD to the bracket (Figure 12).

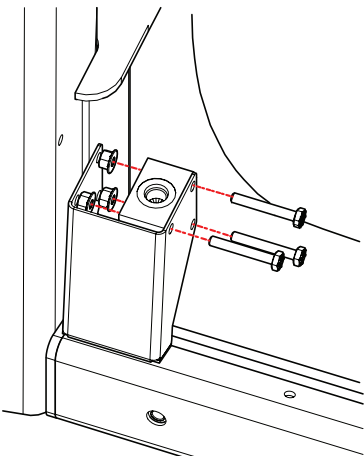


Figure 12: Remove and retain the bolts and nuts that secure the PRD to the bracket.

3. Remove and retain the bolts, nuts, and loom clamps that secure the trigger line to the rail (Figure 13). Quantity is dependent upon the CNG system and length of the trigger line/rail.

NOTE: There will be at least one loom clamp assembly securing the trigger line to the CNG tank frame opposite the PRD.

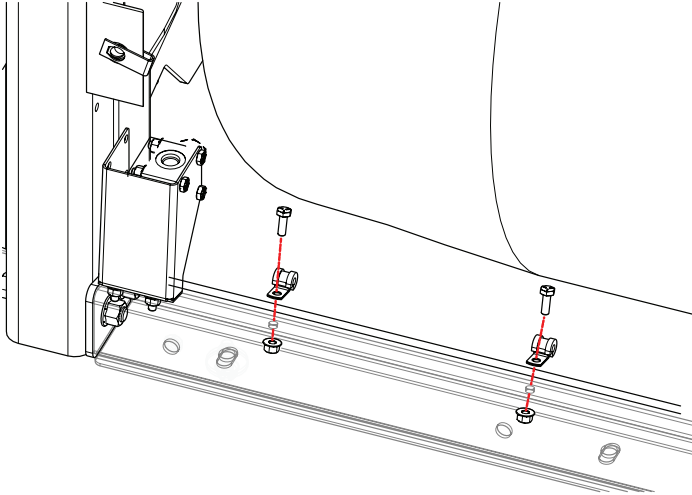


Figure 13: Remove and retain the bolts, nuts, and clamps that secure the trigger line to the rail. Quantity is dependent on length of trigger line.

4. Carefully remove the PRD block and trigger line from the area.

CAUTION

Support the full length of the PRD trigger line when working on it or the PRD block. Do not allow the trigger line and wire to twist or kink. Twisting or kinking will ruin the trigger assembly and the entire PRD will need to be replaced.

Procedure F: Replacing the PRD

Options to replace the PRD include:

Option 1: Installing the replacement PRD block while using the Existing Trigger Line

OR

Option 2: Installing the entire replacement PRD and Trigger Line Assembly

Option 1. Installing the replacement PRD block while using the Existing Trigger Line

NOTE: In an effort to limit contamination, leave the plugs on the PRD block until you are ready to test the pressure or connect the fittings.

NOTE: The unacceptable PRD block will need to be packaged for shipment. See Procedure J: Returning the PRD to McNeilus.

1. Use the magnetic tool to help keep the internal ball bearing in place. Thread the magnetic tool into the vent port.
2. Rotate the PRD block to remove it from the trigger line. Slide the trigger line out of the PRD block.
 - a. Alternatively, the trigger line compression nut can be loosened and then the retainer nut can be rotated out of the PRD block.

⚠ CAUTION

Support the full length of the PRD trigger line when working on it or the PRD block. Do not allow the trigger line and wire to twist or kink. Twisting or kinking will ruin the trigger assembly and the entire PRD will need to be replaced.

3. Remove the magnetic tool to release the ball bearing. Keep the ball bearing in a clean, safe place in case the ball bearing on the replacement PRD becomes lost (replacement PRD blocks come with the ball bearing installed).
4. Inspect the trigger line and internal wire for contamination or damage (bending). If debris or damage is found, the entire PRD block and trigger line assembly must be replaced.

⚠ CAUTION

Do not apply excessive force on the trigger line. Do not pull the retainer nut away from the trigger line. Support the full length of the PRD trigger line when working on it or the PRD block. Do not allow the trigger line and wire to twist or kink. Twisting or kinking will ruin the trigger assembly and the entire PRD will need to be replaced.

5. Inspect the replacement PRD block for contaminants or damage.
6. Make sure the ball bearing is in place and hold the PRD with the “label up” to trap the ball bearing in its bore (Figure 14).

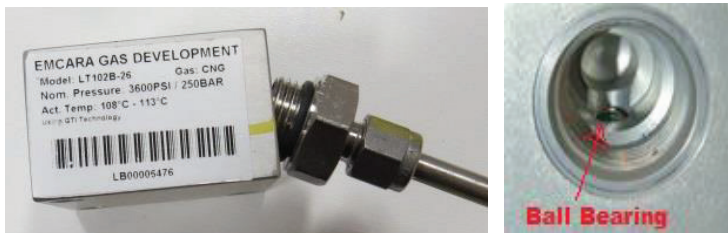


Figure 14: Ball bearing in the PRD.

7. Install the magnetic ball holder into the PRD block vent port. This will hold the ball bearing in place while the PRD block is installed.
8. Lubricate the new O-ring with the O-ring lubricant and place it in the PRD block.
9. Loosen but **do not remove** the compression fitting from the retainer nut on the trigger line.
10. Insert the trigger line into the PRD block.
11. Rotate the PRD block or the retainer nut **ONLY** to install the trigger line against the retainer nut and the PRD block. **Do not allow the trigger line to twist or kink.**
12. Use a torque wrench with a crows foot to torque the retainer nut to the PRD block as shown in Figure 15 to 20 ft-lbs. **Do not allow the trigger line to twist or kink.**



Figure 15: Torque the retainer nut to the PRD block.

13. Hand tighten the compression nut on the trigger line. After it is hand tightened, tighten an additional quarter-turn.
14. Insert the pressure simulator into the inlet of the PRD block. Ensure the screw on the pressure simulator pops out slightly when the simulator is bottomed against the PRD block as shown in Figure 16.

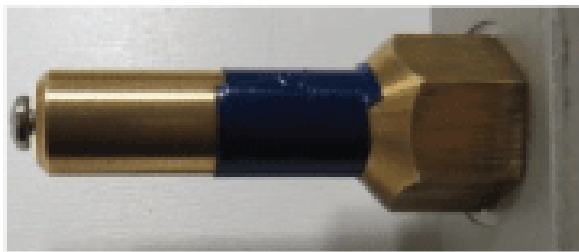


Figure 16: Insert the pressure simulator into the inlet of the PRD block for testing.

15. Slip the metal pressure simulator shim into the space between the screw and the pressure simulator (Figure 17). If the shim is able to slide through the gap, the ball bearing is seated properly.
 - a. If the shim cannot be placed in the space, the assembly is not correct. Remove the trigger line from the PRD block and repeat Steps 6-15, making sure the ball bearing is properly seated.

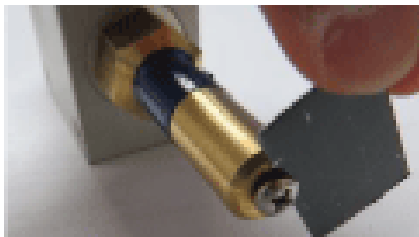


Figure 17: Insert the metal pressure simulator shim to the space between the screw and the pressure simulator for testing.

16. If the PRD block is an LT102B, follow the Pin Cap Inspection and Repair or Replace in Appendix A prior to completing the following steps (Step 17).
17. If it is necessary, use a 1/4" manual tube bender to bend the tube to specifications in Appendix B.
18. Attach the replacement PRD to the rail using the original (3) bolts and nuts (Figure 18).

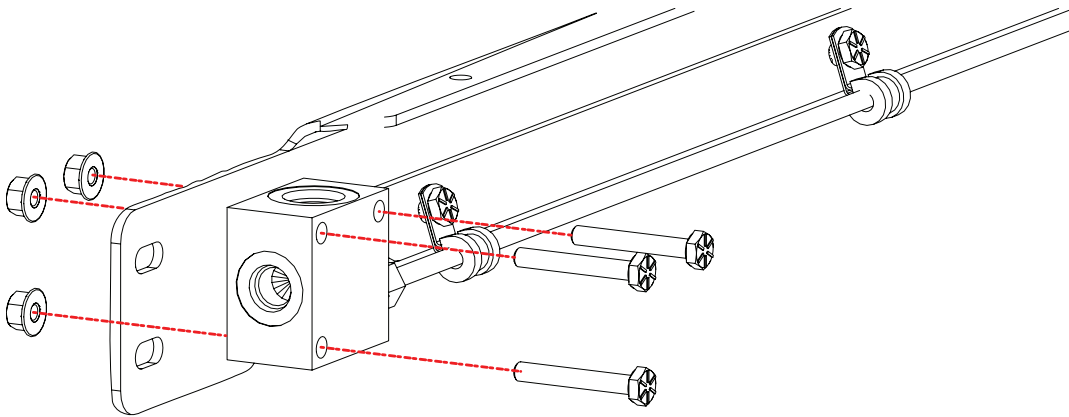


Figure 18: Install the three bolts and nuts that secure the PRD block to the rail.

19. Install the bolt, nut, and loom clamp that secures the trigger line to the rail (Figure 19). Install all original bolts, nuts, and clamps.

<p>⚠ CAUTION</p>
<p>Install the bolts for the trigger line clamps in the same direction as originally installed. Install the bolt threads so that they face away from the CNG tank. Failure to do so may cause damage to the CNG tank.</p>

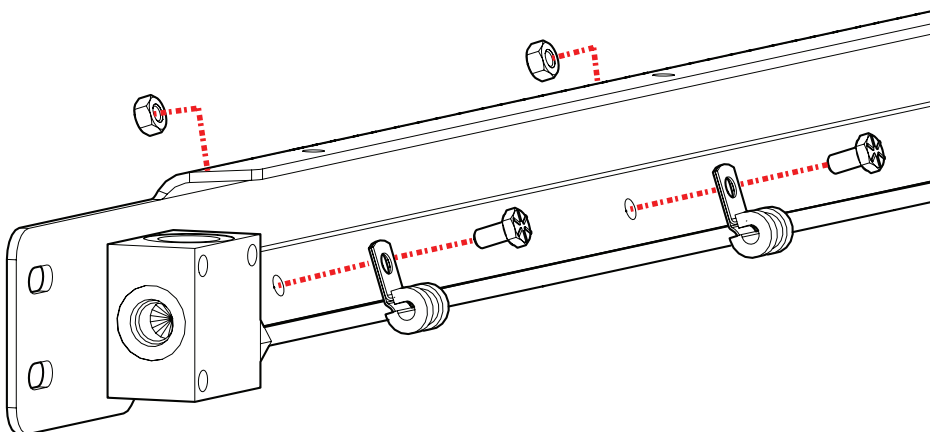


Figure 19: Install the bolts, nuts, and clamps that secure the trigger line to the rail.

20. Remove the plugs from the PRD.
21. Apply a light film of white lithium grease to the surface of the O-Ring only on both the feed and vent line fittings.
22. Connect the feed and vent line fittings to the PRD (Figure 20 or Figure 21 depending on system configuration).
 - Use a torque wrench to torque the SAE -6 O-ring Boss Fitting to 25 ft-lbs.
 - Use a torque wrench to torque the SAE -8 O-ring Boss Fitting to 55 ft-lbs.

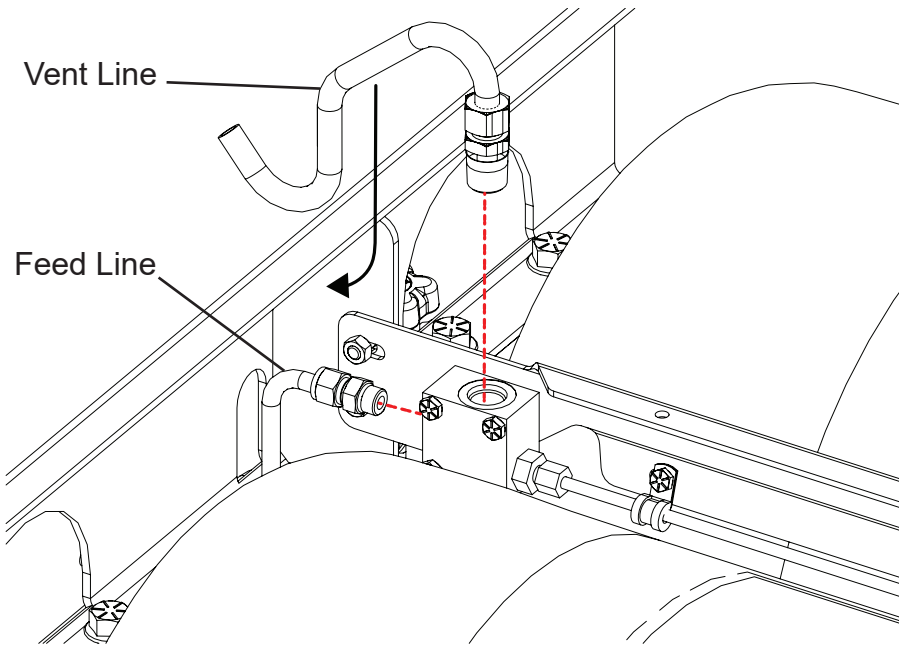


Figure 20: Connect the fittings to the PRD. Make sure to orient the vent line under the CNG system mount frame as shown.

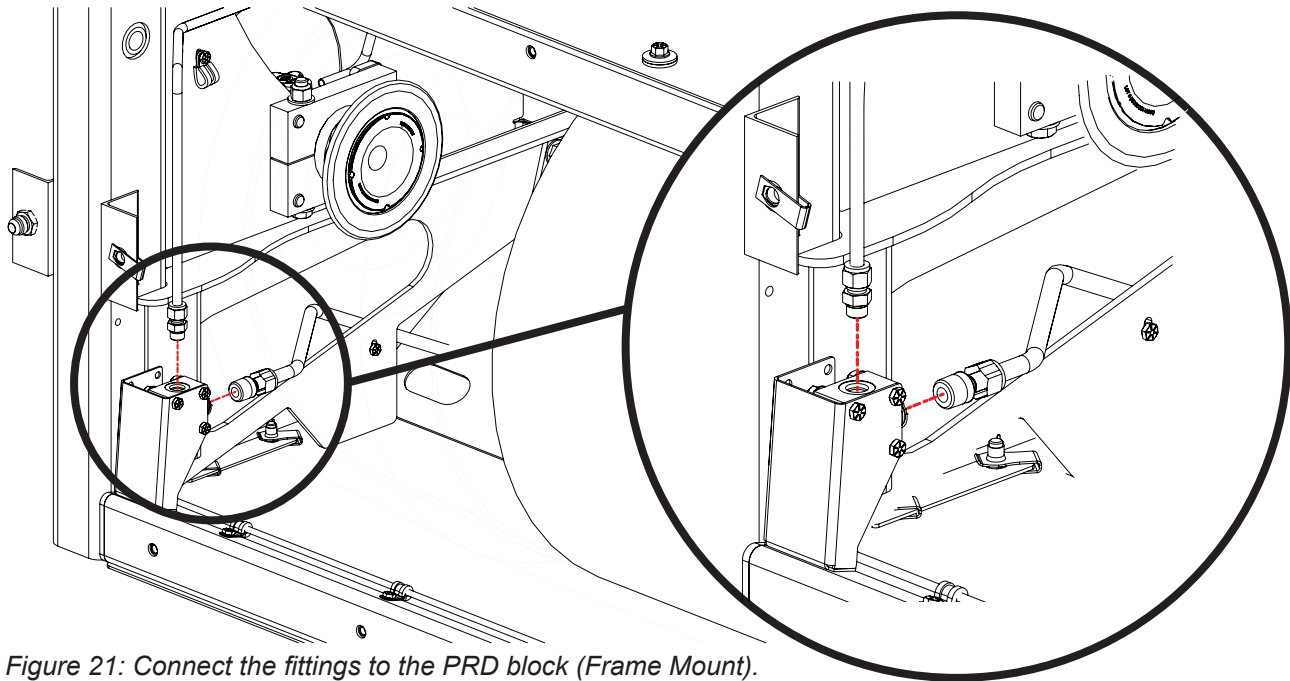


Figure 21: Connect the fittings to the PRD block (Frame Mount).

23. Repeat Procedure F for each PRD that is in the affected date range and serial number range.
24. Continue at Procedure G: Testing for Leaks.

Option 2: Installing the replacement PRD and Trigger Line Assembly

Procedure 1: Installing the replacement PRD and Trigger Line for Roof, Front of Body, Back of Cab, and Tailgate Mount Systems only

NOTE: In an effort to limit contamination, leave the plugs on the PRD until you are ready to test the pressure or connect the fittings.

NOTE: The unacceptable PRD block and trigger line will need to be packaged for shipment. See Procedure J: Returning the PRD to McNeilus for packaging instructions.

1. For **Roof Mount systems only**, use a 1/4" manual tube bender to bend the tube to specifications in Appendix B.
2. Attach the replacement PRD/Trigger Line Assembly to the rail using the original (3) bolts and nuts (Figure 22).

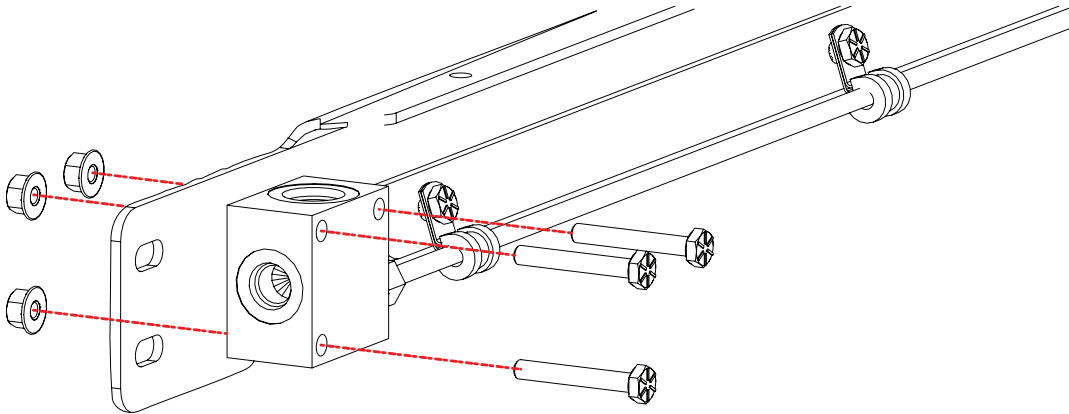


Figure 22: Install the three bolts and nuts that secure the PRD to the rail.

⚠ CAUTION

Support the full length of the PRD trigger line when working on it or the PRD block. Do not allow the trigger line and wire to twist or kink. Twisting or kinking will ruin the trigger assembly and the entire PRD will need to be replaced.

3. Install the bolt, nut, and loom clamp that secures the trigger line to the rail (Figure 23). Install all original bolts, nuts, and clamps.

⚠ CAUTION

Install the bolts for the trigger line clamps in the same direction as originally installed. Install the bolt threads so that they face away from the CNG tank. Failure to do so may cause damage to the CNG tank.

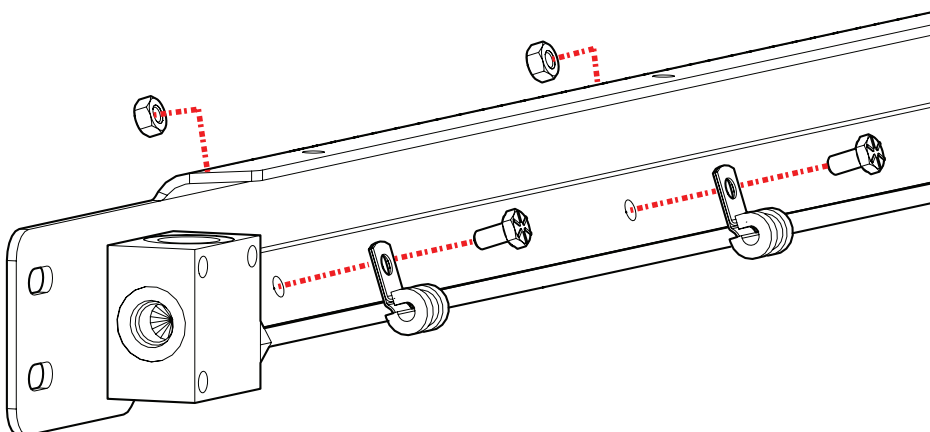


Figure 23: Install the bolts, nuts, and clamps that secure the trigger line to the rail.

4. Remove the plugs from the PRD.

5. Apply a light film of white lithium grease to surface of only the O-Ring on both the feed and vent line fittings.
6. Connect the feed and vent line fittings to the PRD (Figure 24).
 - Use a torque wrench to torque the SAE -6 O-ring Boss Fitting to 25 ft-lbs.
 - Use a torque wrench to torque the SAE -8 O-ring Boss Fitting to 55 ft-lbs.

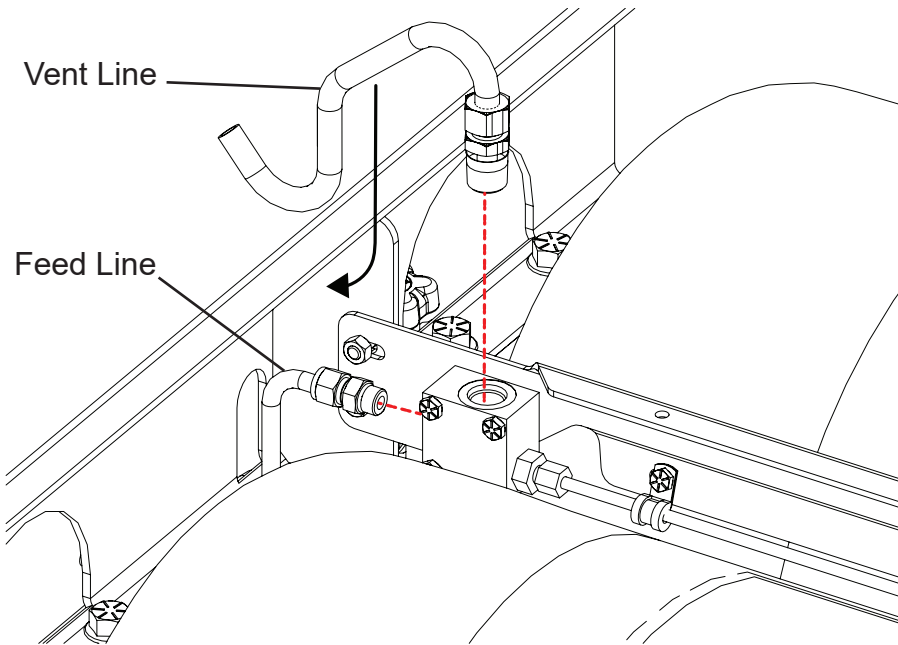


Figure 24: Connect the fittings to the PRD. Make sure to orient the vent line under the CNG system mount frame as shown.

7. Repeat Procedure F for each PRD that is in the affected date range and serial number range.
8. Continue at Procedure G: Testing for Leaks.

Procedure 2: Installing the replacement PRD and Trigger Line Assembly for Frame Mount only

NOTE: In an effort to limit contamination, leave the plugs on the PRD until you are ready to test the pressure or connect the fittings.

NOTE: The unacceptable PRD block and trigger line will need to be packaged for shipment. See Procedure J: Returning the PRD to McNeilus for packaging instructions.

1. Use a 1/4" manual tube bender to bend the tube to specifications in Appendix B.
2. Attach the replacement PRD to the bracket using the retained (3) bolts and nuts (Figure 25).

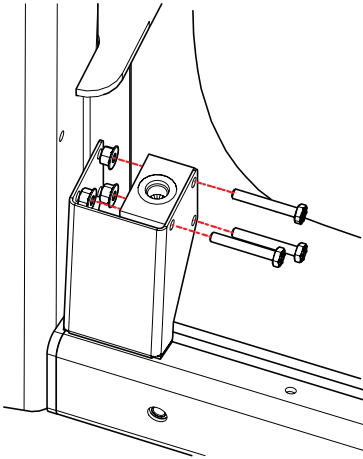


Figure 25: Install the replacement PRD to the bracket using the existing bolts and nuts.

3. Install the bolts, nuts, and loom clamps that secure the trigger line to the rail (Figure 26). Quantity is dependent upon the CNG system and length of the trigger line/rail.

NOTE: There will be at least one loom clamp assembly securing the trigger line to the CNG tank frame opposite the PRD.

⚠ CAUTION

Install the bolts for the trigger line clamps in the same direction as originally installed. Install the bolt threads so that they face away from the CNG tank. Failure to do so may cause damage to the CNG tank.

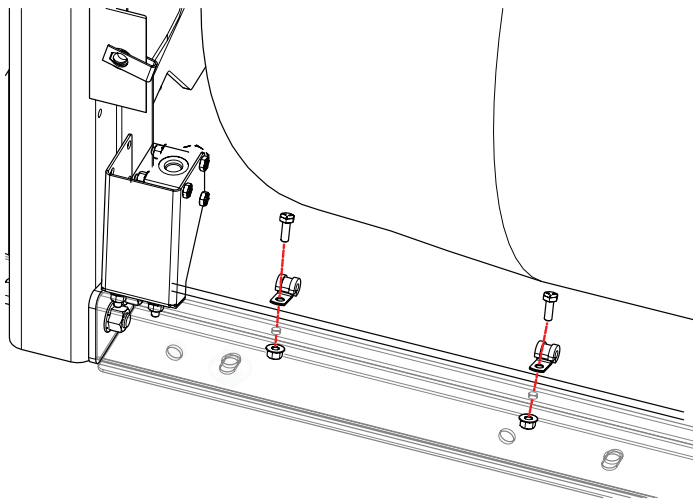


Figure 26: Install the bolts, nuts, and clamps that secure the trigger line to the rail. Quantity is dependent on length of trigger line.

4. Remove the plugs from the PRD.
5. Apply a light film of white lithium grease to surface of only the O-Ring on both the feed and vent line fittings.

6. Connect the feed and vent line fittings to the PRD (Figure 27).
 - Use a torque wrench to torque the SAE -6 O-ring Boss Fitting to 25 ft-lbs.
 - Use a torque wrench to torque the SAE -8 O-ring Boss Fitting to 55 ft-lbs.

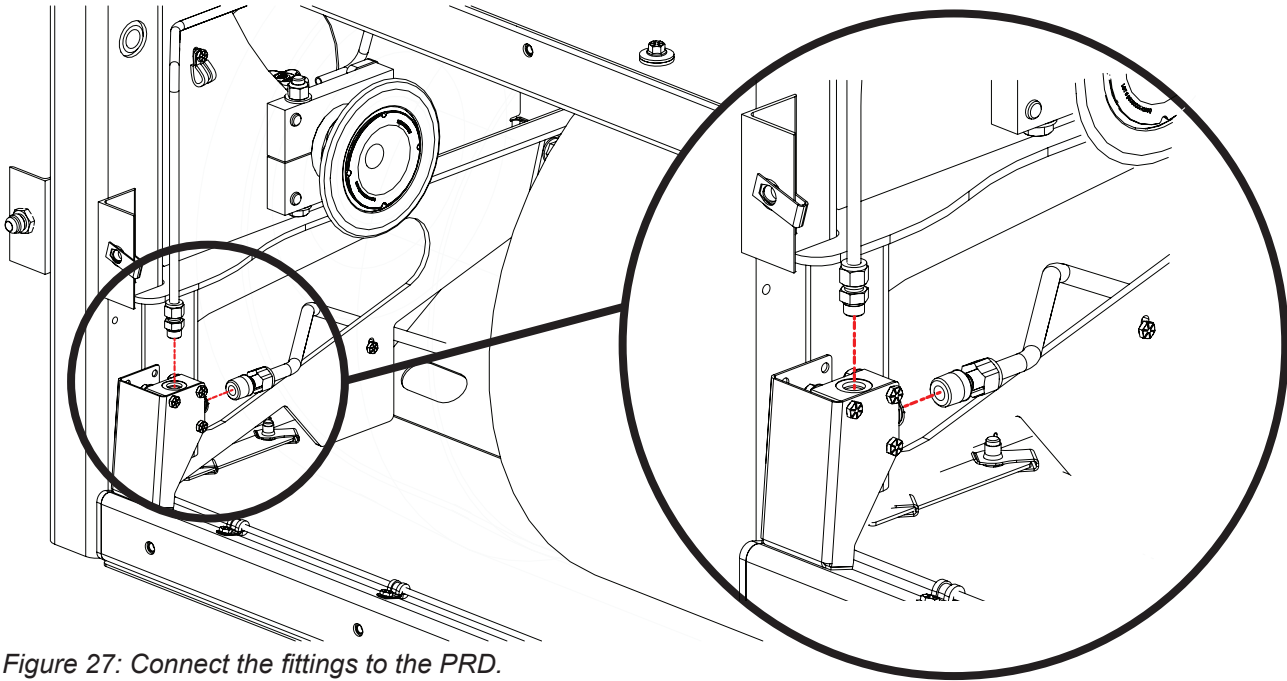
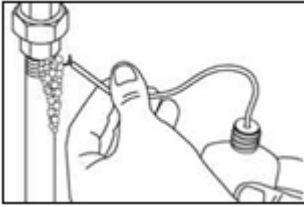


Figure 27: Connect the fittings to the PRD.

7. Repeat Procedure F for each PRD that is in the affected date range and serial number range.
8. Continue at Procedure G: Testing for Leaks.

Procedure G: Testing for Leaks

1. Pressurize the system with some fuel so a leak test can be performed.
2. Conduct the leak detection test by spraying a leak detector (such as Snoop) on any fitting that had been disconnected and reconnected. Look for bubbles in the area sprayed by the detector. If bubbles appear, tighten fittings.



Apply a stream of Snoop liquid leak detector to a pressurized connection. Formation of bubbles at the connection indicates leakage.

3. CNG system covers may be replaced once the leak detection test is complete. See Procedure H: Reinstalling Covers on the CNG System.

Procedure H: Reinstalling Covers on the CNG System

1. After the fittings pass the leak detection test, the CNG system covers must be reinstalled (Figure 28) (see instructions below).

Procedure 1. Reinstalling covers for Roof Mount, Front of Body, Back of Cab, Frame Mount

Figure 28

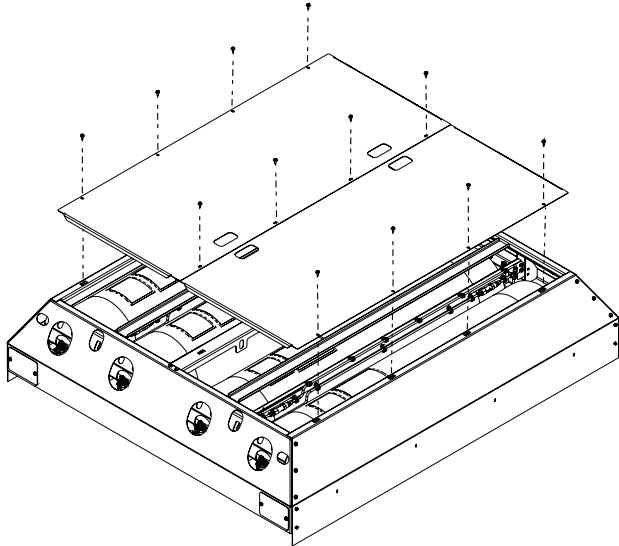


Illustration represents reinstalling all covers on the **Roof Mount** CNG tank configuration.

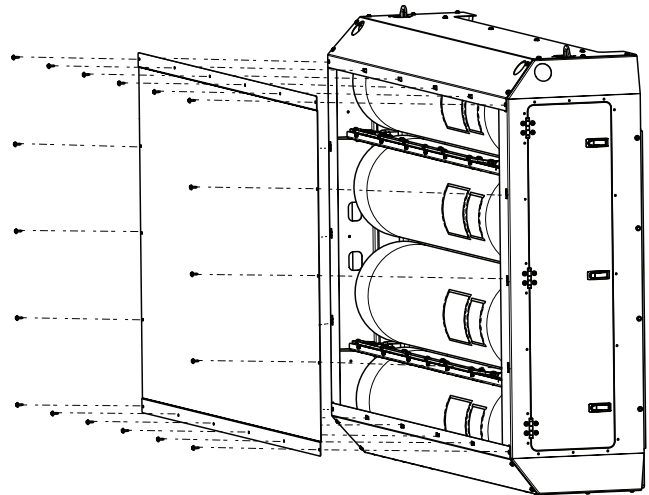


Illustration represents reinstalling the cover on the **Front of Body** CNG tank configuration.

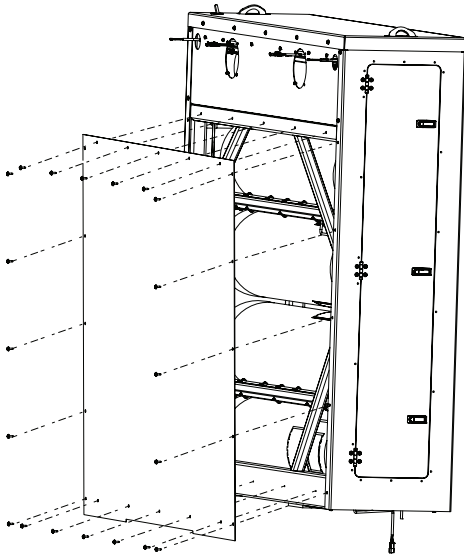


Illustration represents reinstalling the cover on the **Back of Cab** CNG tank configuration.

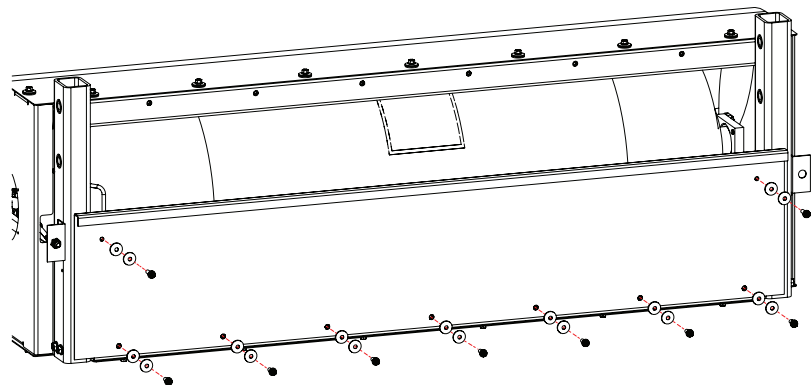


Illustration represents reinstalling the cover on the **Frame Mount** CNG tank configuration.

Procedure 2. Reinstall covers for Tailgate CNG system

Use a second person to help in these steps.

1. Reinstall the top cover sheet by using the hand holds on the top cover sheet to slide the top cover sheet upward so it slides under the lip of the Upper Light Fixture Sheet, and toward the tailgate frame (over the light bar fixture) (Figure 29).

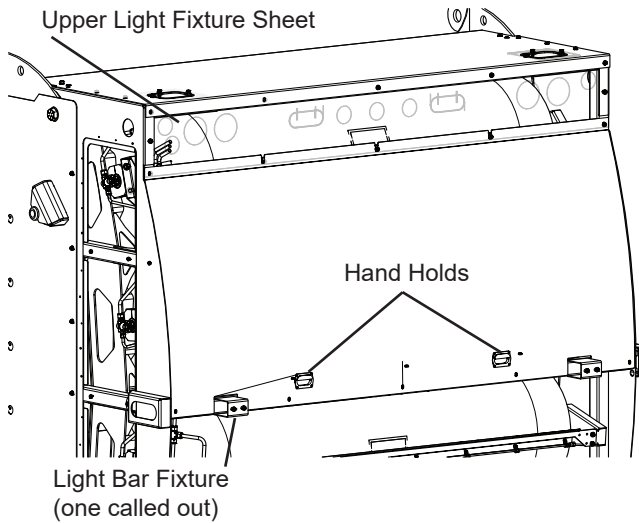


Figure 29

2. Reinstall the (5) top fasteners from top cover sheet (Figure 29-2). The top cover sheet should be held in place at the top underneath the upper light fixture sheet and held in place at the bottom by (2) fasteners, which also need to be reinstalled (Figure 29-2).

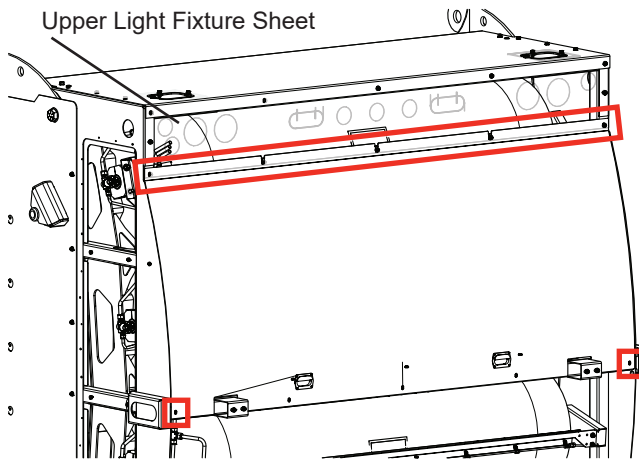


Figure 29-2

3. Reinstall the bottom cover sheet using its hand holds to slide the bottom cover sheet upward so it slides under the top cover sheet. Use a second person to help pick up the cover sheet, place it in the correct location, and hold it while the other person reinstalls the fasteners.
4. Reinstall the (9) fasteners to hold the bottom cover sheet in place (Figure 29-3).

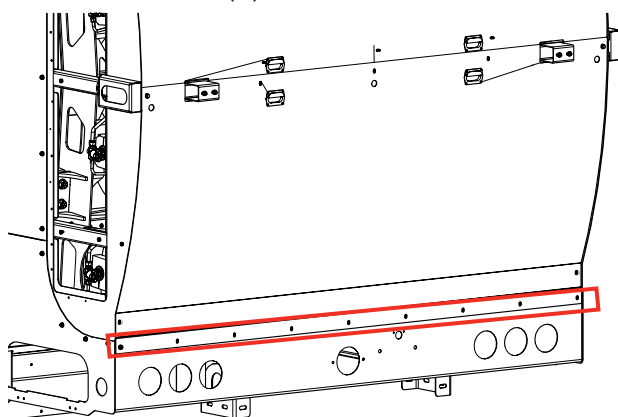


Figure 29-3

5. Reinstall the (2) remaining fasteners to secure the bottom cover sheet in place (Figure 29-4).

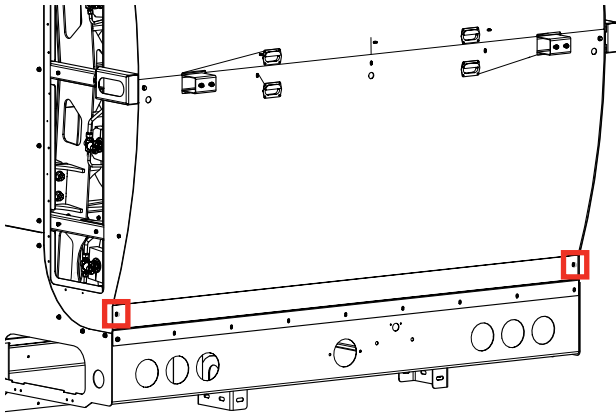


Figure 29-4

6. Reinstall the L-shaped cover brackets and their fasteners (3) (Figure 29-5).

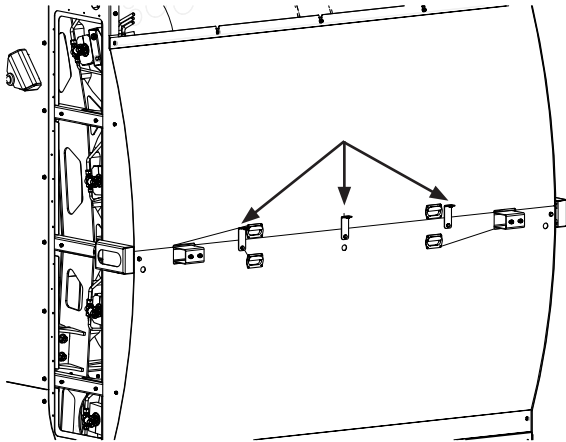


Figure 29-5

7. Reconnect the wiring breakout (not shown) to the light bar.
8. Reinstall the tailgate light bar, and secure it to the tailgate by reinstalling the (7) fasteners.

Procedure I: Fueling Procedure

1. Make sure the vehicle's engine is turned off.
2. Set the parking brake.
3. Access the fuel receptacle and remove dust cap.
4. Retrieve fueling nozzle from dispenser.
5. Turn the control handle 1/4 turn counterclockwise and attach CNG dispensing nozzle to vehicle receptacle.



6. Attach dispensing nozzle to vehicle.
7. Turn the control handle 1/2 rotation clockwise to lock the nozzle to the vehicle receptacle. The vehicle is ready for fueling.



8. Turn control handle to lock the nozzle to the vehicle receptacle.
9. After dispensing is complete, turn control handle on nozzle 1/2 turn counterclockwise and remove CNG dispensing nozzle from vehicle receptacle.



10. Remove the dispensing nozzle from the vehicle receptacle.
11. Return dispensing nozzle to appropriate location on dispenser.
12. Return dust cap to vehicle fuel receptacle.
13. Disengage the parking brake.

Procedure J: Returning the PRD to McNeilus

The removed PRDs must be returned to McNeilus Warranty Department in the following method:

1. Use a marker to cross out the label on the PRD block (Figure 30).
 - a. If the PRD block was the only component replaced, complete Step 1 and skip to Step 9.
 - b. If the PRD and trigger line were both replaced, complete all steps in Procedure J.

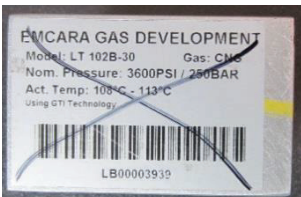


Figure 30: Cross out the label on the PRD.

2. Using an adjustable wrench or body fixture, hold onto the PRD block and using a 7/8" wrench, hold onto the flats of the retainer nut (Figure 31).

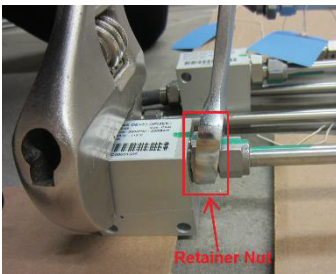


Figure 31: Separate the trigger line and the PRD block.

3. Loosen the retainer nut from the block using the 7/8" wrench. Remove the retainer nut and slide the trigger completely out of the PRD block.

4. The trigger, spring, and wire must be removed from the trigger tube by cutting the wire from the end of the tube. For models LT102B, use 9/16" wrenches to remove the pin receiver and expose the wire. For models LT130, remove the end cap with 3/4" and 11/16" wrenches to expose the wire to be cut at the centering washer.
5. Figure 32 shows the wire from the LT102B being cut at the pin receiver.
6. Figure 33 shows the wire for the LT130 being cut at the centering washer.



Figure 32: Wire from the LT102B being cut at the pin receiver.

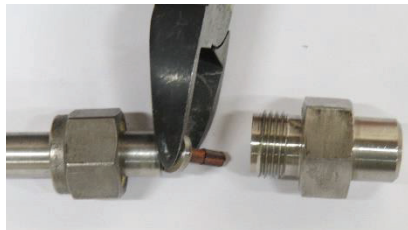


Figure 33: Wire from the LT130 being cut at the centering washer.

7. Coil the trigger, spring, and wire. Tape the coiled wire at one end to keep it in a bundle (Figure 34).



Figure 34: Coil the trigger, spring, and wire to be packaged for return to McNeilus Warranty.

8. The stainless steel tube must be bent in half or cut and should be properly disposed of on site. For the LT102B model, the retainer nut, pin receiver, and pin cap should be disposed of as well. For the LT130 model, the centering washer and end cap should be disposed of.
9. Repeat Procedure J: Returning the PRD to McNeilus Steps 1-8 for each affected PRD.
10. Return the PRDs (and if removed, the coiled trigger/spring/wire assemblies) to McNeilus Warranty Department following the normal warranty return process.

Procedure K: Final Instructions

1. The bulletin is complete. Remove the conditions of Lockout/Tagout, reconnect the battery, and return truck to service.
2. For all PRD valves replaced, be sure to record the old and new PRD valve serial numbers, the VIN of the truck, and body serial number on JDE Work Order.
3. If any amount to fuel was released to the atmosphere, email the completed CNG Valve Replacement Fuel Release Tracking Sheet and any warranty claims to recalls@mcneilusco.com.



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Appendix A

If the PRD block is an LT102B, follow these work instructions for Pin Cap Inspection and Repair or Replace as needed.

After completing these instructions, continue at Step 17 of Procedure F: Replacing the PRD Option 1. Installing the replacement PRD while using the Existing Trigger Line on Page 18.

The purpose of the tool is to push the taper pin in a set distance of 0.14-0.15" farther than the flush point. Use the "pin tool" to verify the brass taper pin captures the trigger wire securely.

CAUTION

Do not apply excessive force on the trigger line. Do not pull the retainer nut away from the trigger line. Support the full length of the PRD trigger line when working on it or the PRD block. Do not allow the trigger line and wire to twist or kink. Twisting or kinking will ruin the trigger assembly and the entire PRD will need to be replaced.

1. Remove and retain the pin cap from the pin receiver (Figure 35). Hold the pin receivers flats steady with a 9/16" wrench and use a second wrench to unscrew the pin cap. **DO NOT** turn the pin receiver.

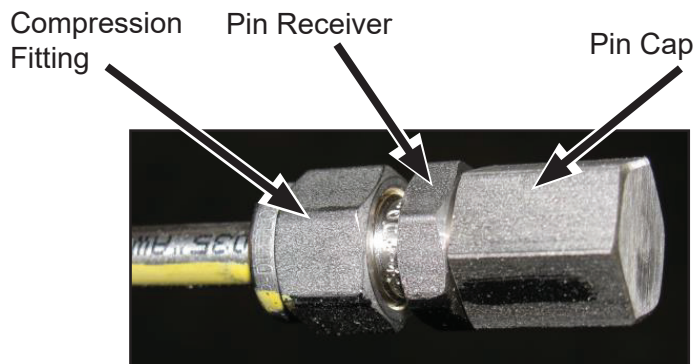


Figure 35: Wire from the LT102B being cut at the pin receiver.

2. Examine the brass taper pin, trigger wire, and pin receiver.
 - a. If the trigger wire is missing or loose inside the pin receiver, the entire PRD assembly must be replaced.
 - b. If the pin and the wire are visible or can be felt in place as shown in Figure 36, continue to Step 3. Ensure the brass taper pin is flush against the pin receiver opening, and that the wire is cut flush. If the taper pin is not flush, use a slide wrench or hammer to lightly push the taper pin flush. Cut any exposed wire so that it is flush with the pin receiver.

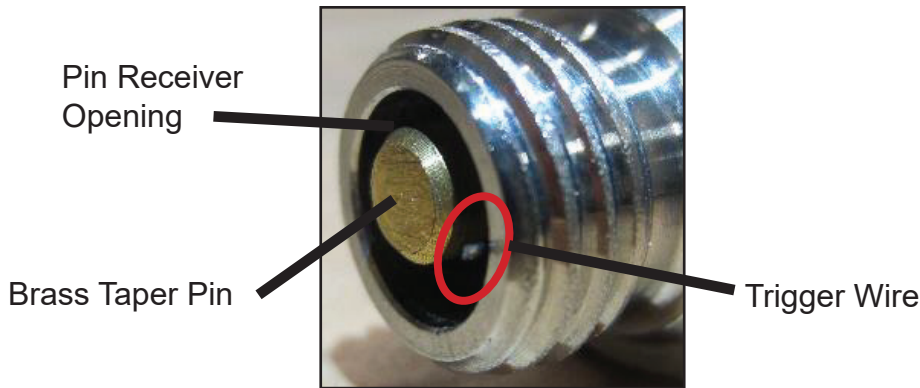


Figure 36: The brass taper pin and trigger wire (circled) must be visible in the receiver opening.

3. Hand tighten the pin cap tool base onto the pin receiver (Figure 37).

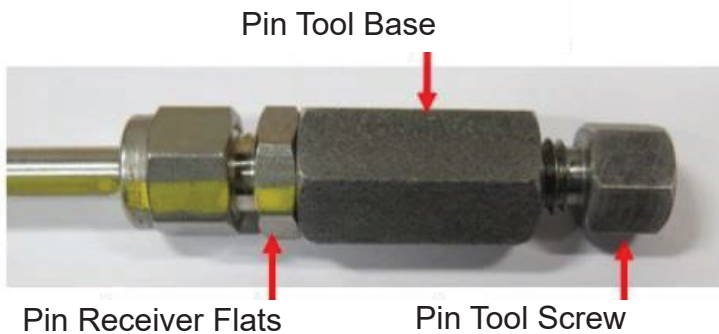


Figure 37: Make sure the pin tool base contacts the pin receiver body.

4. Hold the pin receiver flats with a 9/16" wrench and **use a 1/2" wrench to turn the pin cap tool screw** onto the receiver until it contacts the pin cap tool base (Figure 38). **DO NOT** turn the pin receiver flats. Ensure there is metal-to-metal contact between the base of the pin cap tool and the pin receiver flats as shown in Figure 38.

NOTE: As the pin cap tool screw is tightened, it pushes the taper pin into the pin receiver, wedging the trigger wire against the pin receiver.

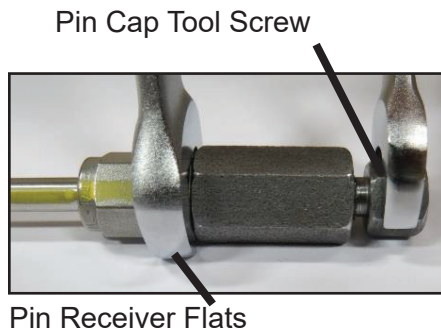


Figure 38: Tighten the pin cap tool screw.

5. Remove the pin cap tool from the receiver. Ensure the trigger wire is still visible, and is flush with the pin receiver. If the wire has been pushed into the pin receiver and is no longer flush, the receiver is considered to be non-operational and must be removed from service.

6. Reinstall the normal pin cap on the pin receiver and tighten it until there is metal-to-metal contact (Figure 39).

Normal Pin Cap



Figure 39: Reinstall the normal pin cap.

7. Draw a straight line connecting the tube, pin receiver, and pin cap using a yellow paint marker. Mark the top of the pin cap with a blue dot to indicate that the pin was pushed farther than the flush point (Figure 40 and Figure 41).



Figure 40: Yellow paint mark on the trigger line components.



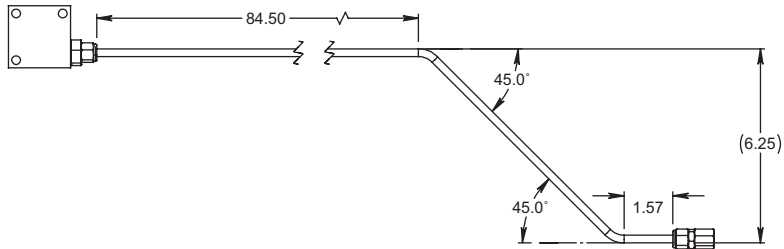
Figure 41: Blue dot indicates the trigger line has been inspected and is suitable for use.

8. Continue at Step 17 of Procedure F: Replacing the PRD Option 1. Installing the replacement PRD while using the Existing Trigger Line on Page 18.

Appendix B

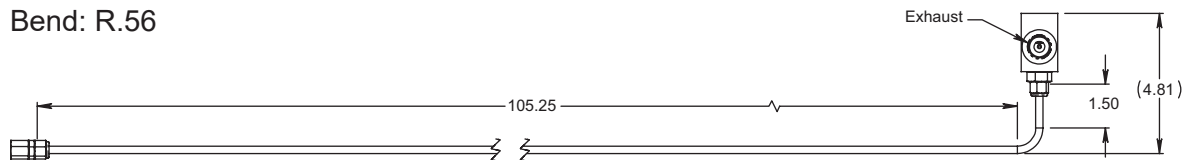
Trigger Line Bend Points

Roof Mount Trigger Line Bend Points



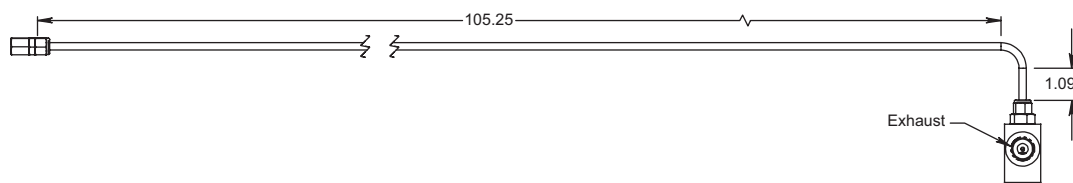
Street Side 26" Frame Mount Trigger Line Bend Point

Bend: R.56



Curb Side 26" Frame Mount Trigger Line Bend Point

Bend: R.50



VSR-TSB-027-A
Emcara PRD Serial Number List of Suspect PRDs

LB00001346	LB00001757	LB00002718
LB00001347	LB00001758	LB00002719
LB00001348	LB00002121	LB00002733
LB00001350	LB00002122	LB00002735
LB00001354	LB00002123	LB00002737
LB00001355	LB00002124	LB00002746
LB00001356	LB00002125	LB00002749
LB00001357	LB00002128	LB00002751
LB00001358	LB00002129	LB00002754
LB00001364	LB00002130	LB00003075
LB00001365	LB00002132	LB00003080
LB00001366	LB00002138	LB00003081
LB00001367	LB00002139	LB00003084
LB00001368	LB00002140	LB00003090
LB00001369	LB00002142	LB00003175
LB00001600	LB00002143	LB00003176
LB00001601	LB00002145	LB00003180
LB00001602	LB00002148	LB00003181
LB00001604	LB00002149	LB00003183
LB00001606	LB00002151	LB00003185
LB00001607	LB00002152	LB00003187
LB00001609	LB00002154	LB00003190
LB00001611	LB00002157	LB00003192
LB00001612	LB00002158	LB00003195
LB00001613	LB00002159	LB00003198
LB00001614	LB00002160	LB00003543
LB00001615	LB00002161	LB00003544
LB00001616	LB00002163	LB00003545
LB00001619	LB00002164	LB00003548
LB00001620	LB00002180	LB00003551
LB00001621	LB00002542	LB00003552
LB00001622	LB00002545	LB00003562
LB00001624	LB00002547	LB00003563
LB00001626	LB00002555	LB00003564
LB00001628	LB00002556	LB00003565
LB00001629	LB00002557	LB00003705
LB00001730	LB00002559	LB00003707
LB00001731	LB00002560	LB00003735
LB00001733	LB00002571	LB00003745
LB00001734	LB00002695	LB00003748
LB00001735	LB00002696	LB00003752
LB00001739	LB00002697	
LB00001747	LB00002699	
LB00001751	LB00002707	
LB00001754	LB00002710	
LB00001755	LB00002716	
LB00001756	LB00002717	