Agility®
fuel solutions

Pony Tank Operation and Maintenance Manual

Systems 24400000, 24409000

Retrofit Kit 24409010

ENP-005

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I. Proprietary Statement

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II. Preface

The Pony Tank is a temporary fuel supply for moving natural gas vehicles a short distance or loading finished trucks on a transporter.

This manual is designed as a supporting document to mechanics and operators trained in the operation procedures and maintenance of the compressed gas fuel system provided by Agility.

No attempt should be made to fill, install, or maintain systems until this manual and all referenced supporting documentation have been read and fully understood.

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III. Warning Statements Used in this Manual

DANGER

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

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.

NOTICE

Best practices or hints to help an operation or procedure go smoothly.

IV. Obtaining Product Support, Service or Parts

Fuel system in- or out- of warranty product support can be obtained by calling the Agility Fuel Solutions Customer Care Hotline at 949-267-7745 or toll free: 855-500-2445.

Parts and Support: parts@agilityfs.com

Visit our website for more information, including CNG and LNG fuel system videos. Go to www.agilityfuelsolutions.com

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⚠ CAUTION

Previous Pony Tanks supply 125 psi to the vehicle, and exceeds the maximum fuel pressure requirements for Cummins Near Zero natural gas engines.

A Pony Tank Upgrade Kit, part number 24409010, is available to improve existing Pony Tanks used with the newer engines. The upgrade kit features an 85 psi regulator and a high pressure filter.

The fuel pressure output is compatible with all Cummins 6.7L, 9L and 12L natural gas engines, including the Near Zero 12L.

See Agility Field Service bulletin ENP-616, “Conversion Kit, Pony Tank, 87 PSI Regulator & Filter Conversion” for more details.

1. Safety

This section outlines general guidelines when operating and servicing Agility Fuel Solutions equipment.

NOTICE

Pony tanks are not approved for use on public roads.

1.1. Qualified Personnel

CNG systems should be maintained and inspected exclusively by qualified personnel. Individuals involved in any aspect of CNG fuel system maintenance, emergency response, servicing or testing must be properly trained and qualified.

1.2. Safety Equipment

1. CNG safety signage should be visible at all applicable locations as stipulated by federal, state, and municipal law.
2. Natural gas rated fire extinguishers should be accessible and visible throughout all servicing and fueling areas. Be sure that fire extinguishers are charged, up to date, and rated correctly.
3. In case of emergency, self-contained breathing apparatus should be on site in an easily accessible area.
4. Areas designated for CNG fueling systems must have adequate lighting that complies with NFPA and state and/or local codes.
5. Protective footwear and eyewear should be worn by all personnel in close proximity to a CNG system.
6. When locating the source of a leak only use certified leak detecting solutions and equipment such as Swagelok Snoop®. Any other product or solutions are unacceptable.
7. Only use tools that are in good working order with proper calibration.
8. Wear appropriate attire while servicing or maintaining any CNG system.

1.3. General Safety Precautions

1. Follow all maintenance procedures in order; do not skip steps unless there is explicit permission to do so.
2. Never use an open flame as a source of illumination in proximity to a CNG system.
3. Any process or procedure that generates sparks, flames, or heated particles should not be practiced in areas designated for CNG.
4. CNG fuel delivery systems are to be serviced in designated areas that comply with all federal, state, and municipal laws and regulations.
5. CNG servicing and fueling areas must be well ventilated as stipulated by federal, state, and municipal law.

6. Perform all maintenance and service procedures in a dust free environment.
7. Never attempt to depressurize or vent a system by loosening a fitting.

1.4. CNG Precautions

1. The following safety precautions are vehicle specific and should be considered at all times when operating natural gas fuel systems and equipment:
2. A portable fire extinguisher must be installed on the vehicle in an easily accessible location.
3. Do not start the engine if a natural gas leak is detected.
4. Ensure that all systems are grounded before transferring CNG fuel from one vehicle to another. Transferring CNG may cause a buildup of static electricity which could discharge and ignite the fuel.
5. Never attempt to open system components that are under pressure.
6. System pressure must not exceed 3000 psi for public vehicles in Canada.
7. For all other vehicles the system pressure must not exceed 3600 psi (i.e. Private captive fleets).
8. Do not smoke or produce an open flame within 30 feet of a CNG vehicle or a CNG dispensing/filling station.
9. Always ground a vehicle prior to defueling.
10. If a CNG vehicle has been out of service for an extended period of time, turn tank valves to the “OFF/CLOSED” position and run the engine until it stalls. This will burn the residual fuel in the closed off lines.

1.5. Codes and Compliances

For complete and detailed information concerning CNG codes and regulations please refer to the following:

USA: NFPA 52

Canada: CAN/CGA B109

North America: ANSI/AGA NGV 3.1/CGA 12 and NGV 12.3-M95

1.6. First Responder Guide

NOTICE

Refer to the *Agility Fuel Solutions First Responder Guide*, *ENP-084* for CNG and LNG firefighter first responder information.

1.7. Emergency Response for Gas Leaks

⚠ CAUTION **⚠ WARNING**

CNG storage pressure is nominally 3600 psi or greater when full. DO NOT cut fuel supply plumbing.

If the vehicle has sustained damage or a gas leak is detected:

1. Do not approach if any sources of ignition are present, including but not limited to: fire, sparks, electrostatic charges, lights, electronic devices.
2. Do not smoke. Do not use road flares.
3. If it is safe to do so, close the main shutoff valve and the cylinder valves. Check the fuel system near the damaged area for leaks, by smell, sight, and sound. CNG is odorized.
4. If the vehicle or system is indoors, open windows and doors to allow ventilation.
5. Avoid turning on any lights or electronics which may spark. Pay special attention to overhead sources of ignition; natural gas is lighter than air.
6. Beware that gas may continue to leak once ignition is turned off and manual shutoff valves are closed.

1.8. CNG Fire Procedures

In the event of a CNG fire it is imperative that the operator acts quickly and efficiently by observing to the following steps:

1. Always call 9-1-1 or emergency services first.
2. Evacuate the area.

⚠ CAUTION **⚠ WARNING**

If the Pony Tank is damaged or has been involved in an accident or fire, the system and cylinders must be inspected by a certified (CGA C-6.4) or other qualified CNG fuel system inspector.

1.9. Welding and Hot Work Precautions

⚠ CAUTION **⚠ WARNING**

Before performing any hot work procedure, make sure the fuel system is leak-free by performing a leak test with a suitable leak detection solution.

For any welding in or near a CNG storage system, follow these safety recommendations:

1. Ensure the vehicle is parked in a well-ventilated area. Do not park the vehicle in an area where natural gas may accumulate.
2. If welding or hot work is performed more than six feet/two meters away from the CNG vehicle, it is not necessary to defuel the system. However, the fuel should be contained in the cylinders as follows:
    a. Ensure that the vehicle is in a well-ventilated area – do not park the vehicle in an area where natural gas may accumulate.
    b. Depressurize the system as described in Section 5.4.
3. Hot work closer than six feet/two meters from the CNG cylinders, they must be **de-fueled**.
    a. Cover all CNG components, including the cylinders and fuel lines, with fireproof blankets or a metal shield. Isolation must prevent sparks and slag from hitting the cylinders.
4. A single spark or weld slag could compromise CNG components.
5. If the cylinder is hit by a spark or slag, the vehicle must be taken out of service and inspected.

2. System Specifications

Description	Specifications
Storage System:	
Dimensions: Length Width Height	 1473 mm (58.0 in) 667 mm (26.3 in) 850 mm (33.5 in)
Service/Maintenance	Inspect as outlined by System Maintenance Section
Storage Cylinder:	
Cylinder	250 bar/3600 psi, 15.9 x 49.5
Dimensions: Length Diameter Weight	 1181 mm (46.5 in) 409 mm (16.1) 46.7 Kg (103 lb)
Construction Liner Shell Designation	 6061 seamless aluminum liner Carbon fiber and epoxy reinforcing laminate Type 3
Service Life	20 years from manufacturing inspection date
Internal Volume per cylinder	111 L (6796 cubic in)
Service Pressure	250 bar (3,600 psig) at 21°C (70°F) maximum
CNG Capacity per cylinder	32.8 scm (1159 scf)
Gasoline Equivalent per cylinder	35.2 Liters (9.3 US gal)
Diesel Equivalent per cylinder	31.4 Liters (8.3 US gal)
Service/Maintenance	Inspect compressed gas cylinders as outlined by manufacturer specifications

3. Pony Tank Controls, Gauges and Main Components

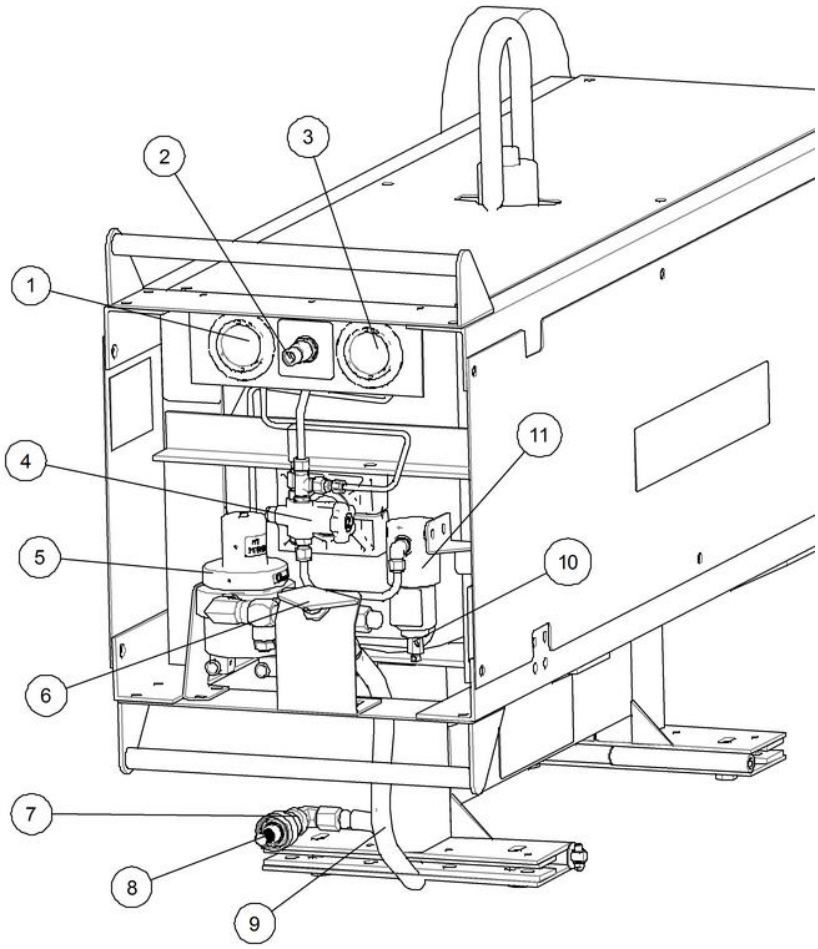


Figure 1. Agility Fuel Solutions 24409000 Pony Tank.

Figure 1 is an overview of the operation interface (fuel management module, or FMM) for the Pony Tank.

1. High pressure gauge
2. Fill receptacle, 1500 SCFM
3. Low pressure gauge
4. Cylinder valve
5. Regulator, 87 psi outlet*
6. Open/Closed-Vent valve
7. Quick connect, 1500 psi, CNG, SS
8. Nozzle holder
9. Hose
10. Bleed valve
11. High pressure coalescing filter assembly

*NOTE: Some Pony Tanks are equipped with 125 psi regulators.

Refer to Figure 1. The high pressure gauge indicates the pressure remaining in the fuel cylinder (only when the cylinder valve is open).

The low pressure gauge indicates the regulated pressure. The Pony Tank regulator is factory set to 85 psi to 87 psi to accommodate Cummins Near Zero 12L and other engines requiring lower fuel pressures than previous engine types. This pressure setting is sufficient for all Cummins natural gas engines.

NOTE: Previous Pony Tanks supply fuel at 125 psi – see Section 7 for more information.

The cylinder valve isolates the gas in the cylinder from all other plumbing.

The 3-way valve is plugged to function as a 2-way valve and has 2 positions: Open and Closed/Vent. The short end of the valve handle indicates flow direction.

Open is when the arrow points toward the regulator (parallel to the flow), allowing fuel to flow from the Pony Tank though the hose and into the vehicle.

Closed/Vent Stops fuel flow.

Refuel the Pony Tank using the fill receptacle. After filling the system, replace the dust cap to prevent contaminants from entering the receptacle.

4. Pony Tank Operation

⚠ CAUTION ***NOTICE***

A. Pony Tanks are not approved for use on public roads.

B. Previous Pony Tanks supply 125 psi to the vehicle and exceeds the maximum fuel pressure requirements for Cummins Near Zero natural gas engines.

A Pony Tank Upgrade Kit, part number 24409010, is available to improve existing Pony Tanks used with the newer engines. The upgrade kit features a regulator set to 85 psi to 87 psi and a high pressure filter.

The fuel pressure output is compatible with all Cummins 6.7L, 9L and 12L natural gas engines, including the Near Zero 12L.

See service bulletin ENP-616, “Conversion Kit, Pony Tank, 87 PSI Regulator & Filter Conversion” for more details.

1. Place the Pony Tank in a secure location on the vehicle, making sure it is stable, see Figure 2.

Figure 2. Mount the Pony Tank in a secure location. Remember, the Pony Tank is not approved for use on public roads.

2. Open the cylinder valve.
3. Make sure the high pressure gauge indicates there is enough CNG in the Pony Tank.
    a. Minimum Pony Tank pressure: 500 psi (refuel the Pony Tank).
    b. Maximum Pony Tank pressure: 3600 psi.
4. Attach the hose and quick connect fitting to the engine fuel inlet, see Figure 3.
    a. Route the hose safely so it does not get tangled in moving parts.

Figure 3. Connect the hose to the engine low pressure fuel inlet. This is after the low pressure filters.

5. Open the Pony Tank valve.
6. Observe the low pressure gauge. It should read 85 psi to 87 psi.
7. Start the engine.
8. When the Pony Tank is no longer needed:
    a. Close the Pony Tank cylinder valve.
    b. If the pony Tank will be stored in the horizontal position, the high pressure filter should be drained when the fueling operation is completed and the unit is stored.
    c. If the Pony Tank will be stored with the regulator inverted (tipped up in a vertical position), drain the high pressure filter after **each** use.
        i. Have a suitable catch can ready to collect any contaminants or liquids.
        ii. Open the bleed valve at the bottom of the filter bowl, draining contaminants and debris into the catch can.
        iii. Dispose of the hazardous waste properly.
        iv. Close the bleed valve.
    d. Close the 2-way Pony Tank valve.
    e. Disconnect the fuel hose from the engine.
    f. Replace any parts removed from the vehicle engine (fuel hose from low pressure filter to the engine).
    g. Hang the hose on the Pony Tank nozzle holder.

4.1. Starting Vehicle

Starting a natural gas vehicle requires a delay between the battery power being turned on and starter motor activation.

1. Ensure system has been properly leak tested and no leaks exist.
2. Ensure quick connect coupler is connected.
3. Ensure cylinder valve and the Open/Closed valve are open.
4. Follow vehicle start up procedures provided by the vehicle manufacturer.
5. Turn vehicle ignition key to ON position for 60 seconds before starting engine.

4.2. Maintenance

⚠ CAUTION **⚠ WARNING**

A. System components must not be under pressure during servicing to prevent serious injury or death.

B. CNG components and fittings are designed to be used exclusively in CNG applications. Parts must be ordered through Agility Fuel Solutions or an approved Agility OEM dealer. Any other parts may be unsafe and will void the warranty. All replacement parts and components must receive approval prior to installation.

C. If the system has been in an accident or fire, cylinders and components must be examined by a qualified inspector.

D. Drain the high pressure filter, if needed.

a. If the Pony Tank is stored horizontally, the filter does not have to be drained.

b. If the Pony Tank is stored vertically (regulator inverted), the filter should be drained after <u>each</u> use.

E. Element replacement must be determined by user requirements. Suggested interval: After every 6 to 12 months.

Task	Frequency
Leak test with methane detector	Every month
Replace filter element	After every 6 to 12 months*
Component inspection	Every month
Cylinders	Inspect cylinders every 3 years or as required by cylinder manufacturer

*Suggestions only. Intervals vary depending on actual use and must be determined by the user.

4.3. Leak Testing

A methane leak testing solution shall be used each month to determine if leaks have developed. All joints should be inspected.

If a leak is detected, fuel lines or components have been replaced, or an excessive amount of fuel is being consumed, perform a leak test on the CNG system plumbing and components.

4.4. Depressurizing System

1. Turn the cylinder shut off valve fully clockwise to the off position.
2. Turn the 3-way valve to the open position.
3. Check the Pony Tank gauges to ensure all pressure is relieved.

5. Pressure Test Procedure

For routine maintenance, the Pony Tank system can be leak tested with compressed natural gas using leak detection solution.

5.1. Pressure Test Using Inert Gas

Nitrogen testing is used to ensure a leak-free system before shipment of new Pony Tanks. Information is included here for reference.

1. Before starting the pressure test with Nitrogen, it is assumed that the system has been fully de-pressurized.
2. Turn the cylinder shut off valves (one on each cylinder) clockwise to the off position.
3. Turn the “Manual Shut Off Valve” on the fill panel to the on or open position.
4. Connect the pressure test equipment to the system fueling receptacle using a NGV1 fueling nozzle plumbed to a Nitrogen source with flex hose rated to the system service pressure of 3600 psi. Slowly fill the system with Nitrogen to a pressure of 100 psi. While filling the system listen for any signs of leaks.
5. Perform the 100 psi leak test using leak detection solution or equivalent method.
6. If a leak is detected, disconnect the Nitrogen fill line from the system fueling receptacle, de-pressurize the system, repair the problem and repeat step 4.
7. If no leak is detected, slowly increase pressure to 1500 psi. Increase the pressure at no more than 500 psi per minute, until a system pressure of 1500 psi is reached. If a leak is detected, disconnect the Nitrogen fill line from the system fueling receptacle, bleed the system pressure, repair the problem and repeat from step 4 above.
8. Perform the 1500 psi leak test using leak detection solution or equivalent method.
9. Continue to increase the pressure 3625 psi. Increase the pressure at no more than 500 psi per minute.
10. Once the system is pressurized to 3625 psi, disconnect the Nitrogen fill line from the system fueling receptacle.
11. Perform the 3625 psi leak test using leak detection solution, or equivalent method.
12. After all Nitrogen leak tests have been performed, the pressure shall remain constant at 3625 psi for 10 minutes with no signs of a pressure drop. If the system pressure drops in this 10 minute time frame, start at step 4 above and repeat procedure.
13. Once the 100 psi, 1500 psi and 3625 psi tests have been performed and approved, the Nitrogen can be vented to atmosphere using the bleed valve. Be careful not to bleed system pressure too fast as this could cause injury.
14. Caution: Ensure that all safety guidelines are followed prior to fueling the system with CNG.

6. Parts, Pony Tank 24409000

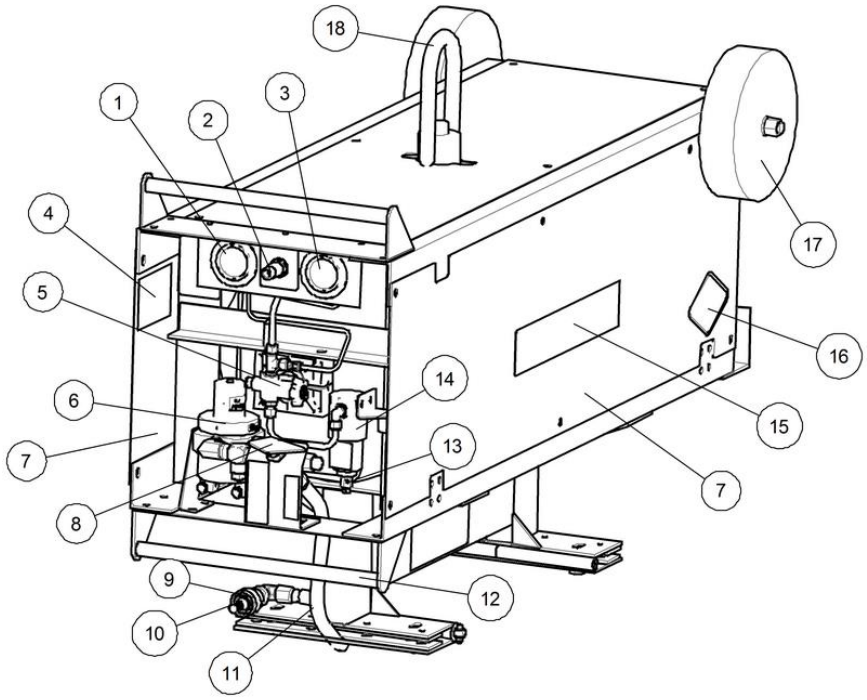
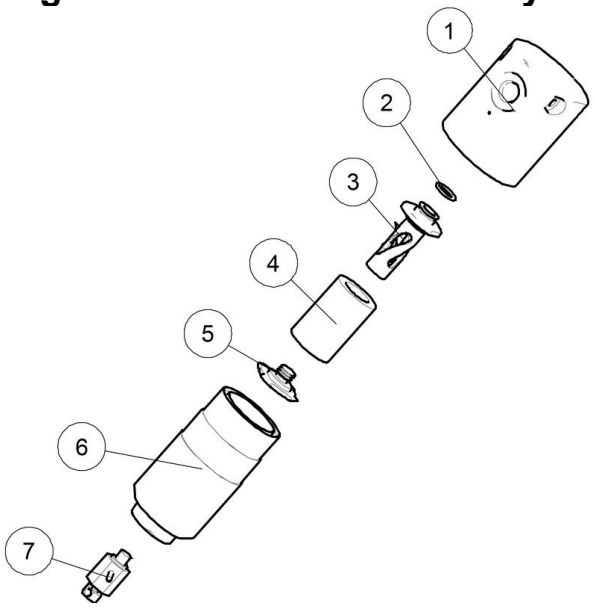


Figure 4. Diagrams are based on the 24409000 Pony Tank. Other units are similar.

Item	Qty.	Part Number	Description
1	1	10302000	High pressure gauge
2	1	10300712	Receptacle, 1500 SCFM
3	1	10300425	Low pressure gauge
4	1	10602021	Warning decal
5	1	10300102	Cylinder valve
6	1	10306975	Regulator (set to 85 psi to 87 psi)
7	2	24400301	Pony Tank side cover
8	1	10300169	Open/Closed-Vent valve (3-way valve used as a 2-way valve)
9	1	10210000	Quick connect fitting
10	1	20100174	Nozzle holder
11	1	24400404	CNG hose
12	2	24400103	Handle
13	1	10300172	Bleed valve
14	1	20100466	Filter assembly, see Figure 5
15	1	10602447	Side decal
16	1	10602105	CNG diamond decal
17	2	10702166	Caster
18	1	10702167	Swivel hoist ring
--	1	10101047	CNG cylinder

High Pressure Filter Assembly 20100466



Torque Specifications

Filter Bowl: 40 Ft-Lbs, ±1-Ft-Lbs

Lubrication Note

Apply a silicone-based spray lubricant to the filter bowl threads only. DO NOT allow lubricant to contaminate the filter or O-rings.

Figure 5. High pressure filter assembly 20100466.

Item	Qty.	Part Number	Description
1	1	20100106	Filter housing
2	1	10500014	O-ring
3	1	20100108	Element housing
4	1	20100109	Filter element
5	1	20100110	Element base
6	1	20100467	Filter bowl
--	1	10500022	Filter bowl O-ring
7	1	10300172	Bleed valve

7. Retrofit Kit 24409010 for Cummins Near Zero 12L Engines

In order to make previous Pony Tanks compatible with Cummins Near Zero 12L natural gas engines, fuel pressure must be within certain limits. Previous Pony Tanks supply 125 psi to the vehicle which is too high for the Near Zero engines.

The 24409010 retrofit kit includes a new pressure regulator and a high pressure filter to improve existing and older Pony Tanks. The fuel pressure output is set to 85 psi to 87 psi and is compatible with all Cummins 6.7L, 9L and 12L natural gas engines, including the Near Zero 12L. Refer to ENP-616, “Conversion Kit, Pony Tank, 87 PSI Regulator & Filter Conversion” bulletin for installation details.

8. Decals and Locations

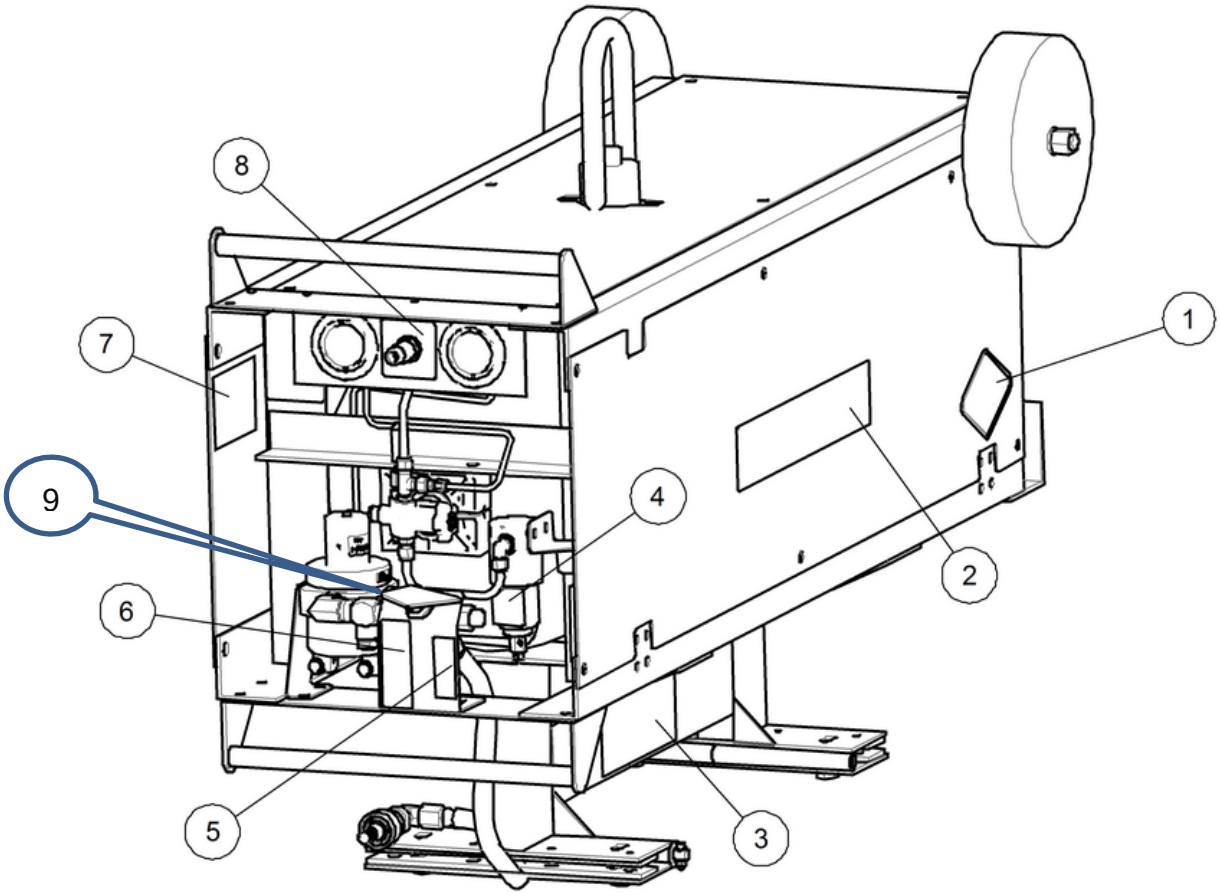


Figure 6. Pony Tank decal locations, front panel and right side.

Item	Qty.	Part Number	Description
1	1	10602105	Decal, CNG Diamond
2	1	10602447	Decal, Pony Tank Side Decal
3	1	10602446	Decal, Agility Fuel Solutions
4	1	10602437	Decal, “Drain Filter”
5	1	10602449	Decal, “High Pressure Gas”
6	1	10602451	Decal, “Not for Public Roads”
7	1	10602021	Decal, “CNG Vent Line”
8	1	10602448	Decal, “Fill Nozzle”
9	1	10602467	Decal, “Open Closed Vent”

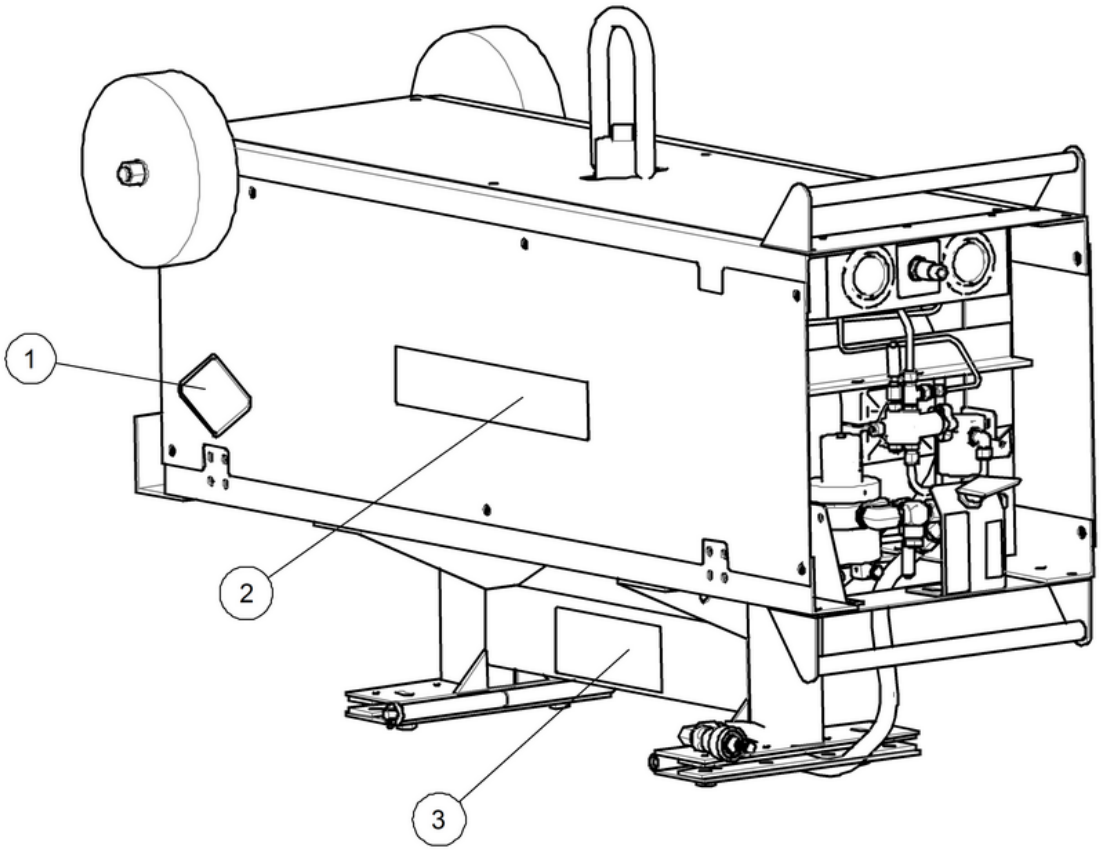


Figure 7. Pony Tank decal locations, left side.

Item	Qty.	Part Number	Description
1	2	10602105	Decal, CNG Diamond
2	2	10602447	Decal, Pony Tank Side Decal
3	1	10602446	Decal, Agility Fuel Solutions