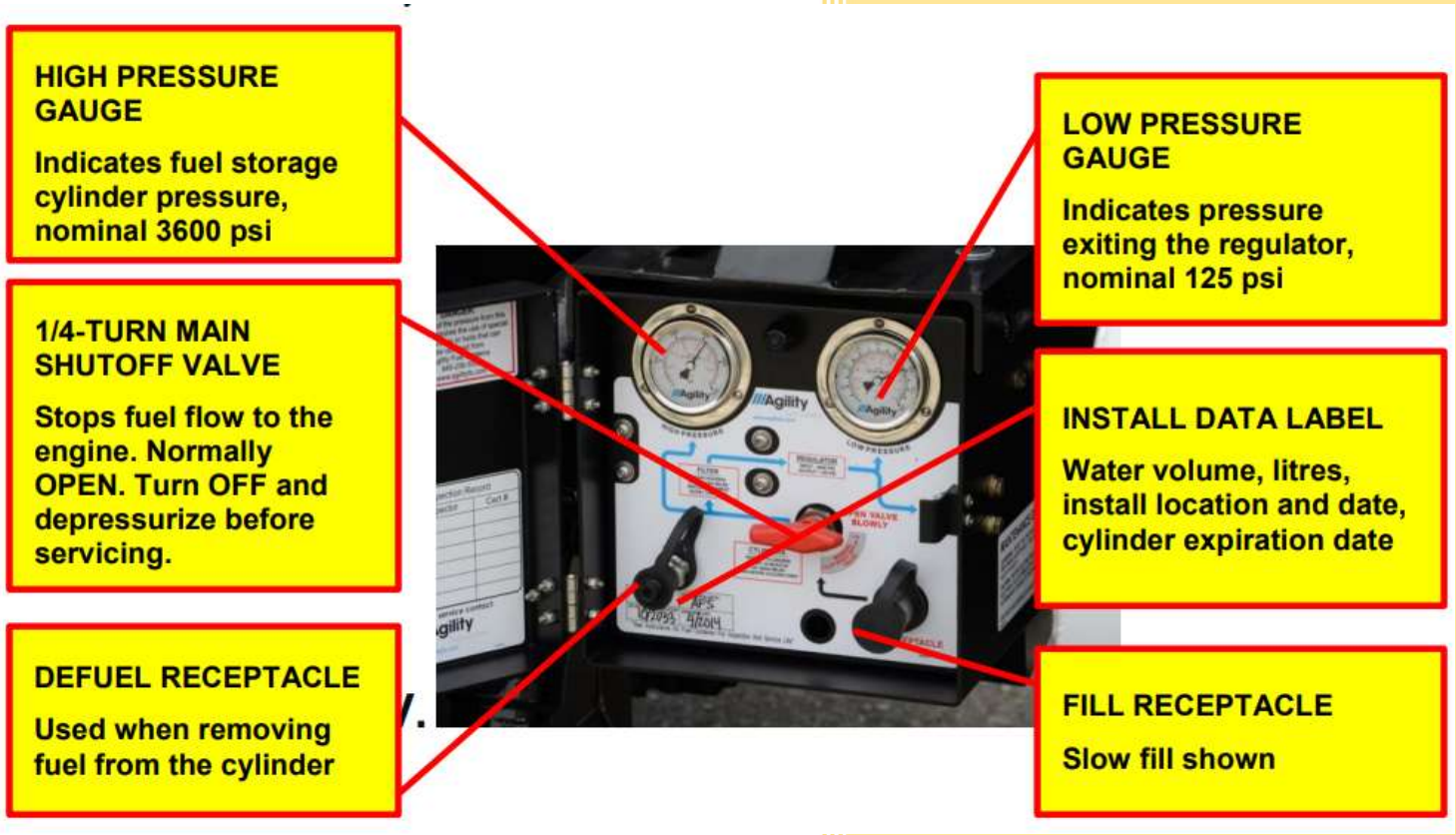
Compressed Natural Gas Vent/Flare Adapter Kit

by: Responder Training Enterprises, LLC



RESPONDERTRAINING.COM

Version 3.2.02

Assembly & Operating Guide

Ronald D. Huffman

Responder Training Enterprises, LLC.

10/13/2025

Compressed Natural Gas

Fuel Transfer/Flaring/Vent Kit (TM)

The "Compressed Natural Gas Flare/Vent Kit" provides industry standard equipment to allow CNG cylinders to be vented or flared, PLUS components that allow CNG to be flared or transfered utilizing standard propane flaring equipment.

Kit Components

THE MOST COMPLETE CNG KIT AVAILABLE IN A SINGLE CASE(TM)

Direct Vent Tip (1" pipe mount)
Valve Assembly with Gauge
CNG to LP adapter w/350 psi PRD
Largest Assortment of CNG Adapters "In any" Kit
2 - 5000 PSI 25 foot CNG Hoses with Couplers
1 - 5000 PSI 4 foot CNG Hose with Couplers & Valve
Wiring Harness w/Connections
Fuel Transfer Adapter
1/4" & 3/8" Line Depressurization Tools

Responder Products
P.O. Box 182, Shirley, IN 47384
(765) 524-4848
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www.ResponderTraining.com

PROUDLY Made in USA

WARNING

DO NOT utilize this assembly without a functioning high pressure control valve.

Connect to the RTE CNG kit supplied hose and gauge assembly. Designed to be only used on a vertical flare system with 4 legs/supports.

Thank you for purchasing our Compressed Natural Gas Vent/Flare Connector Kit. My intention in creating and producing this product was to provide response and service organizations with a quality tool that would exceed anything else currently on the market and last the owner for years to come.

As a career and a volunteer firefighter, I know how important it is to respond with the tools you need to get the job done quickly and safely.

If you have any questions, concerns or comments please contact me.

Be safe brothers and sisters

Ronald D. Huffman
Owner, Responder Training Enterprises, LLC
(765) 524-4848 Mobile

Designer, manufacturer and distributor of this and many other response tools.

Call me anytime for response tools.

*Photo of the "**Dragon**" looking down on me during a Propane Live Fire class taught in Greenfield IN.*

Table of Contents

WARNING THIS IS NOT A TRAINING MANUAL
You must seek out and receive real world hands on practical training
from a qualified instructor prior to using the referenced kit and its components

READ AND FOLLOW ALL SAFETY INFORMATION

IF YOU ARE UNSURE STOP!

RE-READ THE INSTRUCTIONS OR CONTACT RESPONDER TRAINING ENTERPRISES FOR ASSISTANCE

Specifications

Name:	Compressed Natural Gas Vent/Flare Kit
SKU:	CNG-2.0
Product:	CNG / Natural Gas

Use with any other material voids all warranties expressed or implied.

YELLOW Highlighted text: Indicates special attention should be applied to the information provided

RED Highlighted text: Indicates a WARNING or DANGER and special attention MUST be applied to the information provided!!!

IMPORTANT: *Prior to operating this CNG Kit and any of its accessories you must fully read, understand and follow the information in this document. IF YOU ARE UNSURE OF HOW TO CONDUCT ANY FUNCTION OR OPERATION "STOP", CONSULT THIS DOCUMENT OR CONTACT RESPONDER TRAINING ENTERPRISES, LLC. FOR CLARIFICATION.*

FLARING/VENTING OPERATIONS ARE INHERENTLY DANGEROUS*. Failure to follow the appropriate safety measures could result in serious injury or death. In addition to this product literature all appropriate Local, State and Federal codes, regulations and guidelines must be identified and followed at all times.*

Only personnel that have received proper training and understand the proper use of this product(s) and associated equipment should operate the Responder Flare and/or any of its accessories during training or incident response.

WEAR APPROVED PPE INCLUDING: GLOVES, BODY, HANDS, EYES and RESPIRATORY PROTECTION DURING SET-UP AND OPERATIONS.

A CURRENT copy of this document should be kept with the CNG Kit at all times

The most up to date version of this document can be found @
https://www.respondertraining.com/equipment-manuals/

Before using the referenced equipment, Attend a qualified training program and read the complete document including the warranty, liability and additional special information found throughout and at the end of this document before using this CNG Kit.

Set-Up and Assembly (BASIC)

1. Open the storage case and remove the equipment needed for the operation.
2. Follow your department's grounding and bonding policies and procedures.
3. Based on incident needs, connect the hose(s)/components to the system.

a. Make the connection to the vehicle using either the hose's quick connector or one of the kits included connectors.

ITEM#	Description
6	3/8" NPTF Male x 3/8" NPTF Male
7	3/8" Male Coupler x 3/8" NPTF Female Thread
8	RESERVED
9	1/4" SS Relief Valve 350 PSI
10	Hex Reducing Bushing, 1/2" NPTF Male x 3/8" NPTF Female
11	Brass Adapter 1-3/4 Male ACME X 1/2 Female NPT
12	SAE O-Ring Boss ORB Male x NPTF Male 90 degree Elbo
13	SAE O-Ring Boss ORB Male x NPTF Male 90 degree Elbo
14	3/8" ORB (9/16"-18 thread) Male x 1/4" Male Pipe
15	1/2" ORB (3/4"-16 thread) Male x 3/8" Male Pipe
16	3/8" NPTF Male x 1/4" NPTF Male
17	1/4" Tube Fitting x 3/8" Male NPT Connector - 316 Stainless
18	3/8" Tube Fitting x 3/8" Male NPT Connector - 316 Stainless
19	1/2" Tube Fitting x 3/8" Male NPT Connector - 316 Stainless
20	#8 SAE/ORB Hex Head Plug
21	#6 SAE/ORB Hex Head Plug
22	#4 SAE/ORB Hex Head Plug
23	3/8" NPTF Male x 1/4" NPTF Male
24	1/4" Female Coupler x 1/4" NPTF Female, Steel
25	1/2" Tube Ferrule Set - 316 Stainless
26	3/8" Tube Ferrule Set - 316 Stainless
27	1/4" Tube Ferrule Set - 316 Stainless
28	SLOK SWIVEL/MALE NPT
29	FS2404-06-06 | 3/8" ORFS Male x 3/8" NPTF Male
30	Solenoid Valve Troubleshooting Magnet Tool

NOTE on Thread Tape - The Manufacturers website is your best option for current information (https://fedpro.com/products/thred-tape-white-standard-density).

Line Pressure Reduction Tools (#CNGPRT.250 CNGPRT.375)

4. If system pressure or trapped defueling line pressure makes connecting the female connector to the male defueling port difficult,

RTE-CNG LinePressure Reduction Tool #CNGPRT.250 OR #CNGPRT.375

   a. attach the appropriate size CNG Line Pressure Reduction Tool to the male defueling port.

      i. Ensure the tool is fully engaged and locked on prior to opening! (Full system/ line pressure may exceed 3,500psi)

   b. Turn the handle clockwise to depress the coupler pin. As the pin is depressed, the pressure (CNG) will be released. The pressure should stop releasing within seconds. If it does not stop, check to ensure that the system valves are closed feeding from the CNG supply.

NOTE: You will be releasing a flammable gas, use proper precautions and PPE

5. Attach a RTE CNG Kit supplied hose to the defueling port.

Pressure Gauge/Valve Assembly (#CNGVGA)

6. Next, connect the "Pressure Gauge/Valve Assembly" to the appropriate system or hose assembly connector.

Pressure Gauge/Valve Assembly →

7. Attach additional KIT supplied CNG hose(s) as needed.
8. Select the supplied kit attachment based on the desired discharge pressure using the CNG to LPG adapter (a) or the CNG Vent/Flare Tip (b).

LPG Hose Valve Assembly with PRD (#CNG-LPGVPRD)

(a)

a. This device has been designed to allow discharge pressure to be managed using the valve to throttle discharge flow.

   i. Operation – with the valve in the closed position (pictured) connect the assembly to the hose assembly.

   ii. Connect the system to a flare with a 4 – legged base. Do NOT discharge CNG at higher pressures (100 psi and higher) in any direction other than straight up.

   iii. SLOWLY open the valve until the desired discharge pressure is reached or the pressure relief activates.

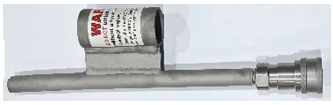
      1. NOTE: The assembly contains a relief valve that will provide an audible alert when the max pressure is reached. If it activates, immediately reduce the discharge pressure.

DANGER: DO NOT place any body parts in front of the discharge port.

Direct Vent/Flare Tip (#: CNGDVT3.75)

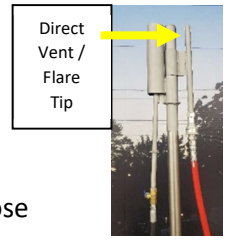
b. This device has been designed to allow "FULL" discharge pressure to be managed using the inline valve assembly.

(b)



Direct Vent/Flare Tip Installation

The Direct Vent/Flare Tip allows full tank pressure to be released VERTICALLY to atmosphere. This tactical option is by far the safest option. Our CNG Kit is designed to be used with the Responder Training Enterprises 1-inch Responder Flare (aka The Dragon Slayer) as shown.



a. Connect the Direct Vent/Flare Tip to the end of the high-pressure hose supplied with in the kit.

b. Slide the CNG Direct Vent/Flare Tip onto the main pipe of the 1-inch Responder Flare above the Propane Pilot Burner. Rotate the Vent/Flare tip next to the Pilot Burner.

2-port Manifold (#: CNG2PM)

With Quick Connectors used for pressure reduction and dual flare operations

The 2-port manifold provides a location for a 2nd flare to be added to the system allowing higher volumes to be released reducing the potential of the flare blowing itself out. It should be added into the system during initial set up.

CNG Defueling Auxiliary Wiring Kit

DANGER: "MAKE NO ELECTRICAL CONNECTIONS OR WORK IN AN EXPLOSIVE ATMOSPHERE WITH THE RTE-CNG WIRING KIT"

The Compressed Natural Gas Vent/Flare Kit includes a 12VDC wiring harness to activate tank solenoids. Extreme caution must be used when working with CNG tanks.

Electrical Connection options: The wiring kit includes several connection options. Power supply options include a 20' cable with cigarette, battery clip and off/on switch options. And the following

- 1 - OMB Female Pigtail
- 1 - Rotarex Solenoid Pigtail
- 1 - OMB Solenoid Pigtail
- 1 set - Small Alligator Clips
- 1 set - Battery Clips
- 2 – Blank ends
- 1 set - 1/8 round pin ends
- 1 spare fuse(s)

Venting/Flaring

Best Practice - Vent up and away from an elevated position! Common sense tells us that venting or flaring a lighter than air ignitable gas any other direction is not as safe.

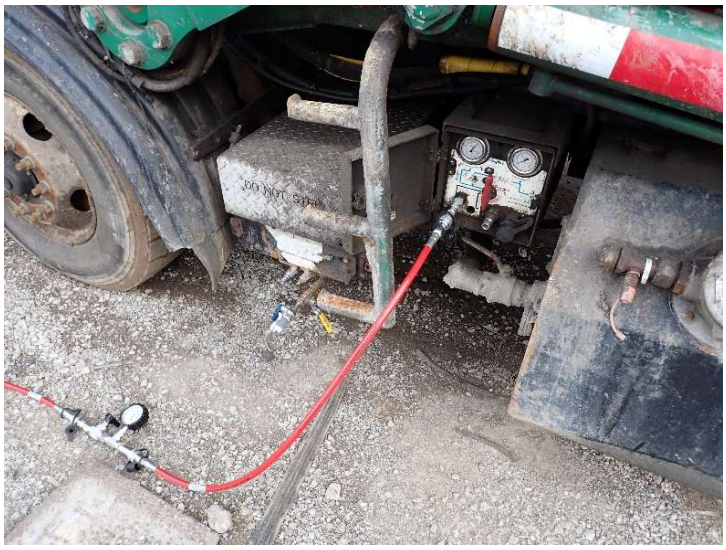
NOTE: All flares should be stabilized and secured when used.

Flaring Operations

Prior to starting a flaring operation

1. Ensure that a clear burn area capable of supporting the estimated radiant heat in "all" directions is available.
2. Verify that the area is clear of ignitable materials including items susceptible to radiant heat damage such as vinyl siding, painted items, plastics, glass, etc... Or the heat can be managed through engineered practices.

3. Grounding and bonding have been completed in accordance with local SOP's, SOG's and appropriate codes.
4. Prior to igniting the flare ensure that all connections are tight/secure (ie. inspect all connections for leaks.)
5. Ensure that all soft components are protected from sharp edges that may rub and cause damage.
6. Ensure that your flare is stable.
7. Verify that all personnel and others are in a safe area and are aware of operational tactics and hazards.
8. Once flaring operations have begun, check all connections for leaks again.



Flaring CNG using the hoses included in the kit (5000 psi, electrically conductive natural gas hose).

FLARING OPERATIONS MUST BE MONITORED CONTINUOUSLY.

NEVER LEAVE A FLARING OPERATION UNATTENDED.

FOLLOW ALL SAFETY RULES

Before using this equipment, you must be trained in defueling operations for mounted and/or unmounted CNG tanks/cylinders. *Owning a CNG Kit doesn't make you qualified to use it!*

Fuel Transfer Operations

Introduction

Transferring compressed natural gas (CNG) from one vehicle to another is a specialized process that requires careful handling and adherence to safety regulations. This document outlines the generic steps and precautions to ensure a safe and efficient transfer. It should be noted that transferring form one container to another allows the two to equalize pressure and does not empty either of all pressure.

Local Systems
Vehicles and systems are different across the country. Work with your local service managers to learn about their systems and build partnerships that can work with you to mitigate your incident.

RTE CNG Kit equipment provided for fuel transfer operations

Fuel Transfer Adapter with Quick Connector (C-FTA-01)
To conduct Vehicle-to-vehicle fuel transfers you will need to connect the included CNG fueling nozzle on the vehicle receiving the CNG pressure from the source defueling port.

NOTE: As always, proper grounding and bonding protocols must be followed!

- CNG Transfer Hose: A high-pressure hose specifically designed for CNG.
- Personal Protective Equipment (PPE): Safety goggles, gloves, and flame-resistant clothing.
- CNG Leak Detection Equipment: Such as a soapy water solution or electronic leak detector.

Safety Precautions

- If possible, ensure both vehicles are parked in a well-ventilated area away from ignition sources.
- Check for any leaks in the hoses and connections before starting the transfer.
- Always wear appropriate PPE during the transfer process.
- Have a fire extinguisher rated for gas fires nearby.

Transfer Steps

- Follow your department's grounding and bonding policies and procedures.
- Preparation: Verify that both vehicles have compatible CNG systems, and that the receiving vehicle is ready to accept the gas.
- Connect the Hose: Attach one end of the CNG transfer hose to the donor vehicle's CNG tank and the other end to the receiving vehicle's CNG tank using the appropriate adapters.
- Check Pressure: Use the kits pressure gauge ensure that the pressure is within safe limits for both vehicles.
- Start Transfer: Open the valve on the donor vehicle's tank slowly to allow CNG to flow into the receiving vehicle's tank.
- Monitor for Leaks: Continuously check for leaks using leak detection equipment during the transfer process.
- Stop Transfer: Once the required amount of CNG has been transferred, close the valve on the donor vehicle's tank and disconnect the hoses.
- Final Checks: Inspect all connections for leaks once again and ensure both vehicles are secured.

Fuel Transfer Operations Conclusion

- Transferring CNG between vehicles is a straightforward process when done correctly and safely.
- Always follow department policies, industry regulations, and manufacturer guidelines to ensure the safety of all personnel.
- A fuel transfer operation is only a pressure equalization operation. When completed both systems will have the same pressure. To reduce the pressure in the source system further, a second receiving system with a lower starting pressure will be needed and the operation repeated.

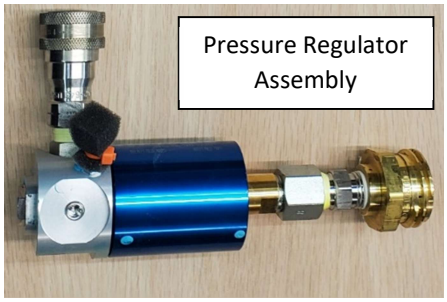
OPTIONAL Equipment

Pressure Regulator Assembly (Optional) (RO-EVO-110S-RTE)

i. Connect the Regulator Assembly to the Pressure Gauge Assembly

ii. Connect your propane flare.

iii. Slowly open the control valve on the Gauge Assembly. (full open provides 135 psi discharge pressure)



Description of included hose and additional lengths.

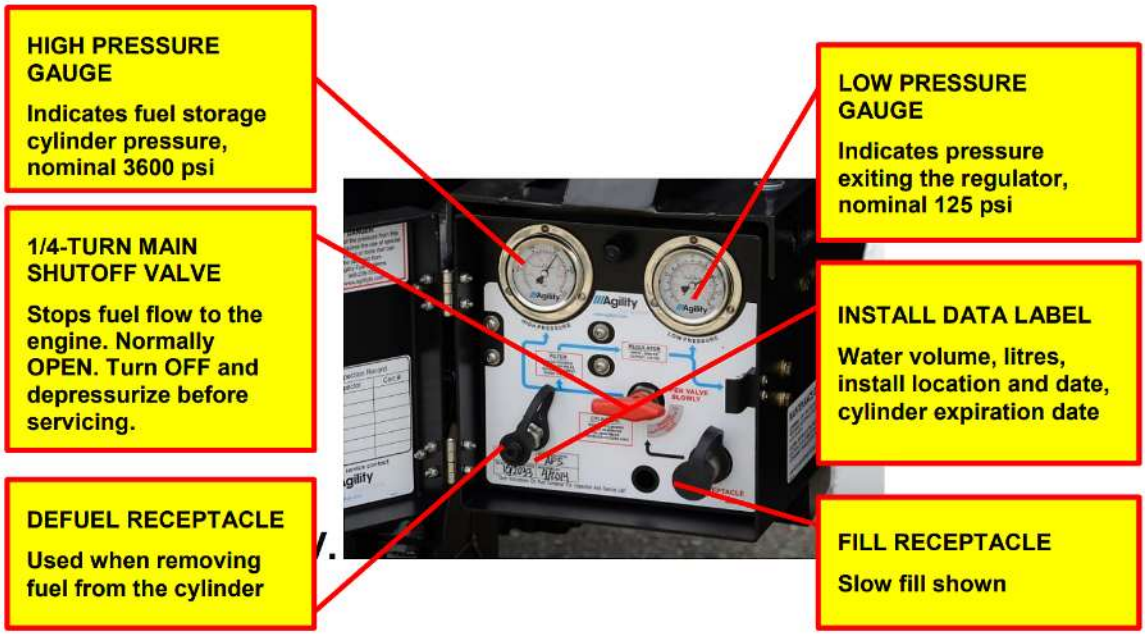
Parker 5CNG CNG hose with Quick Connectors.

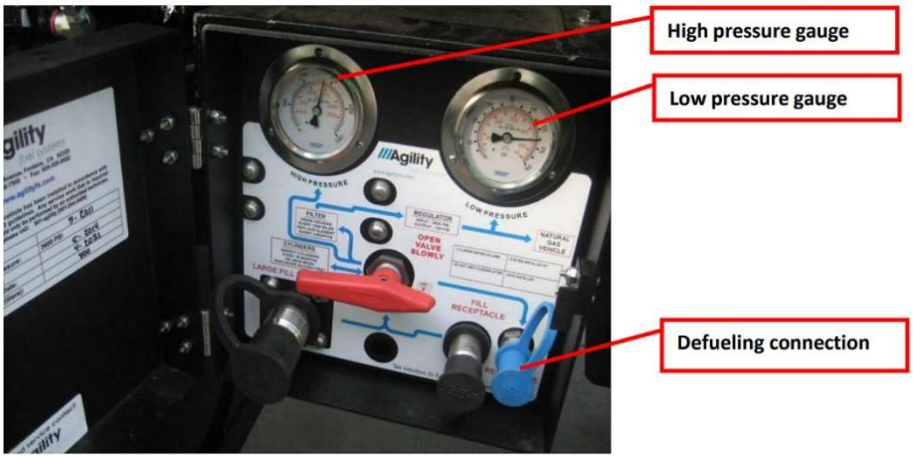
Parker 5CNG Series	25 – Foot and 4-Foot	Additional Lengths are available	
High Pressure Thermoplastic Electrically Conductive Natural Gas Hose			
Product Attributes			
	0.25 Inch	Inch/Metric:	Inch
Working Pressure:	5000 PSI (340 bar)	Distinct Properties:	Electrically Conductive
Application:	Natural Gas	Working Pressure Range:	> 5000 PSI (345 bar)
Series:	5CNG	Specification:	NFPA 52, ANSI/IAS NGV 4.2-1999, CSA 12.52-M99
Hose Pressure Range:	High		

Online videos- CNG Segment 4: Fueling & De-Fueling - Hexagon Agility

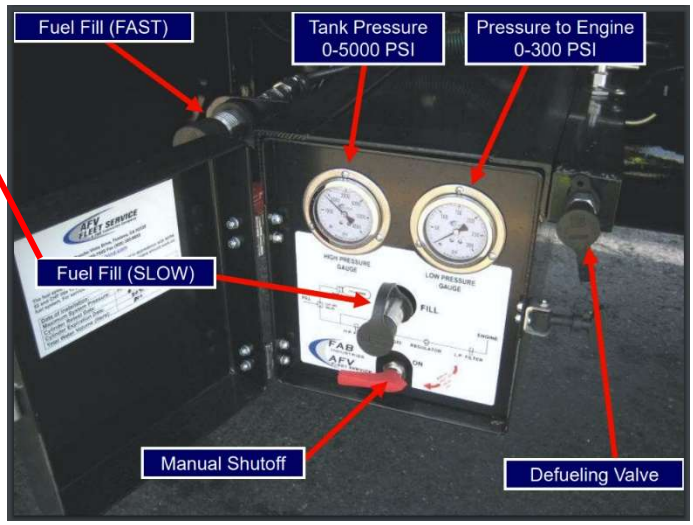
- https://youtu.be/BaTXrJrmzuk?si=F31qN-m06NWoSHUR

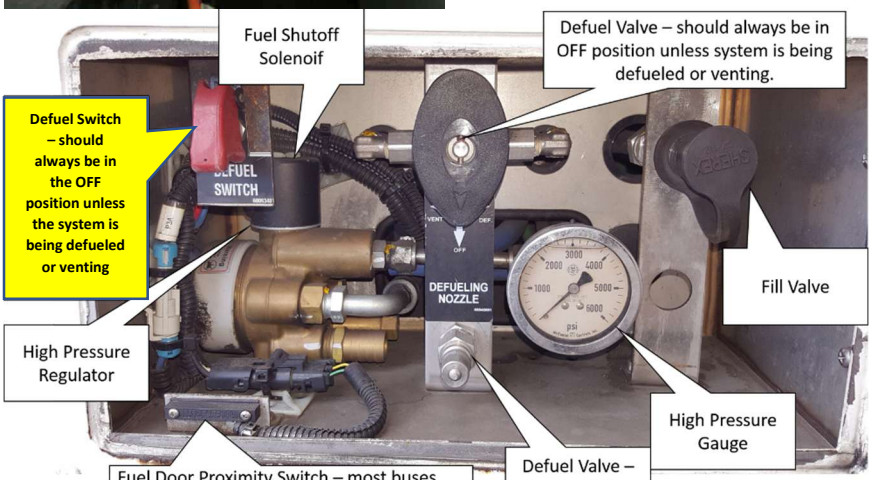
Before using this equipment, you must be trained in defueling operations for mounted and/or unmounted CNG tanks/cylinders. As you will see from the images below there and numerous configurations and designs from multiple manufacturers.

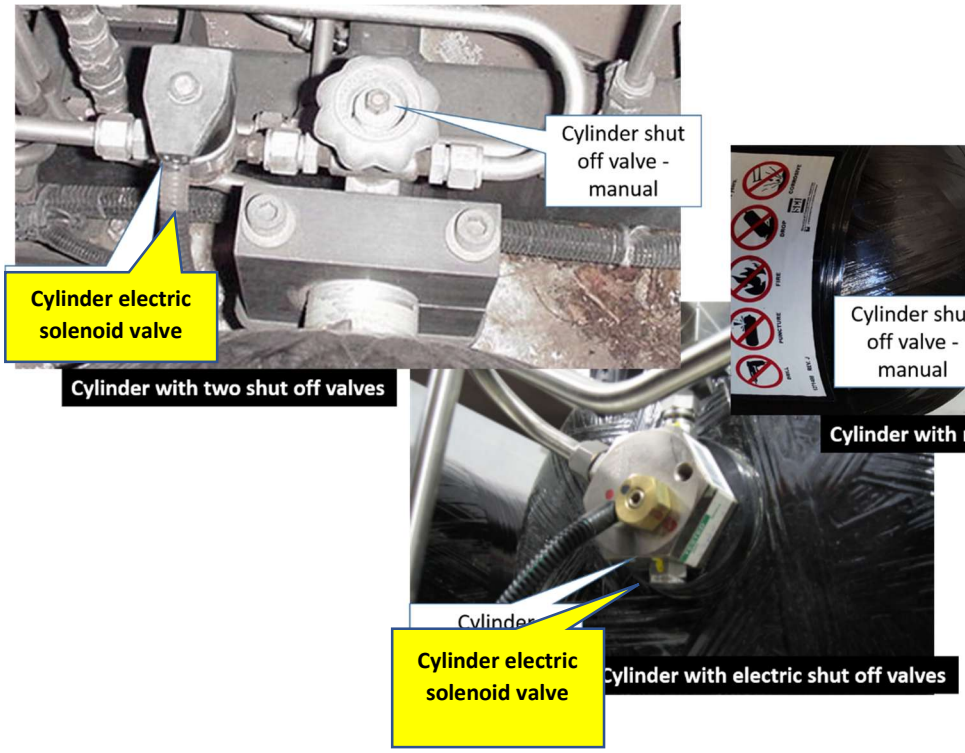

HIGH PRESSURE GAUGE
Indicates fuel storage cylinder pressure, nominal 3600 psi
1/4-TURN MAIN SHUTOFF VALVE
Stops fuel flow to the engine. Normally OPEN. Turn OFF and depressurize before servicing.
DEFUEL RECEPTACLE
Used when removing fuel from the cylinder
LOW PRESSURE GAUGE
Indicates pressure exiting the regulator, nominal 125 psi
INSTALL DATA LABEL
Water volume, litres, install location and date, cylinder expiration date
FILL RECEPTACLE
Slow fill shown

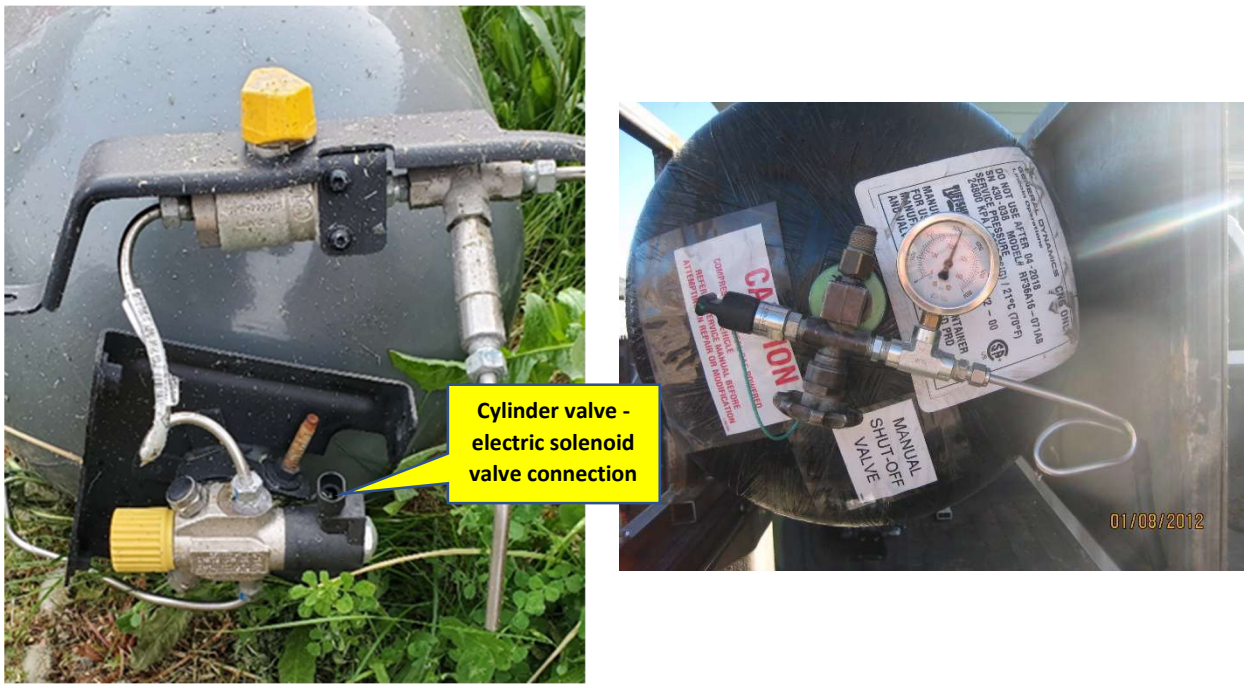

High pressure gauge
Low pressure gauge
Defueling connection


Tank Pressure
3600 PSI
OFF
Manual Shut-off
ON
CNG Fuel NGV1
OFF
ON
Defueling


Fuel Fill (FAST)
Tank Pressure 0-5000 PSI
Pressure to Engine 0-300 PSI
Fuel Fill (SLOW)
Manual Shutoff
Defueling Valve


Fuel Shutoff Solenoif
Defuel Valve – should always be in OFF position unless system is being defueled or venting.
Defuel Switch – should always be in the OFF position unless the system is being defueled or venting
DEFUEL SWITCH
DEFUELING NOZZLE
Fill Valve
High Pressure Regulator
High Pressure Gauge
Defuel Valve – connects to defuel station or to vent stack
Fuel Door Proximity Switch – most buses have this switch to prevent the engine from starting when the fuel door is open. This feature is designed to prevent driveaways when fueling.


Cylinder shut off valve - manual
Cylinder electric solenoid valve
Cylinder with two shut off valves
Cylinder shut off valve - manual
Cylinder with manual shut off valves
Cylinder electric solenoid valve
Cylinder with electric shut off valves


Cylinder valve - electric solenoid valve connection
MANUAL SHUT-OFF VALVE
01/08/2012

Use of any Responder Training Enterprises, LLC provided, manufactured equipment constitutes acceptance of the terms and conditions listed in this document.

Warranty: This warranty and use of the product(s) applies to the original purchaser. The manufacturer guarantees all components against failures in materials and/or workmanship for a period of **1 year** from the date of purchase. If any part of the purchased system fails due to materials and/or workmanship the purchaser must contact Responder Training Enterprises, LLC (RTE) for repairs, replacement, or refund of the original purchase price of the defective component at the discretion of RTE. RTE may require that the defective component be returned for inspection and repairs. The purchaser must contact Responder Training Enterprises to obtain a Return Goods Authorization number (RGA) prior to returning any component of the system. If the damaged item is deemed to be the result of improper use or neglect, RTE reserves the right to charge for service and/or repairs including shipping to and from RTE.

Do not ship items to anyone other than Responder Training Enterprises.
This warranty does not cover consequential damages resulting from the use of the product, including damage caused by flames or heat created during operations, loss of service availability and/or time involved due to warranty issues.

Manufacturer Liability Limitation: Failure to use this product in any manner or purpose other than intended by the manufacturer and/or for products other than identified or described and/or servicing the equipment by anyone other than Responder Training Enterprises, LLC employees or persons trained by Responder Trainings Enterprises, LLC to conduct service on the equipment and/or applying or installing unapproved alterations to any part of the system voids the warranty and releases the manufacturer from any and all liabilities including damages to equipment, property, injuries and/or death caused by the use of the product and any of its accessories.

NOTE: Retailers are not responsible for this product in any way other than supplying the product(s) as promised. Retailers, persons, agencies, companies and/or corporations providing advertising may not be held liable for manufacturer defects in materials and/or workmanship, improper training unless the training was provided by the aforementioned and/or use of the equipment by the end user for statements and/or advertising made available by Responder Training Enterprises, LLC in any way.

If for any reason the equipment fails to function as intended, please contact Responder Training Enterprises, LLC immediately so that we can help you.

Thank you for purchasing this quality product.

Ronald D. Huffman

Owner, Responder Training Enterprises

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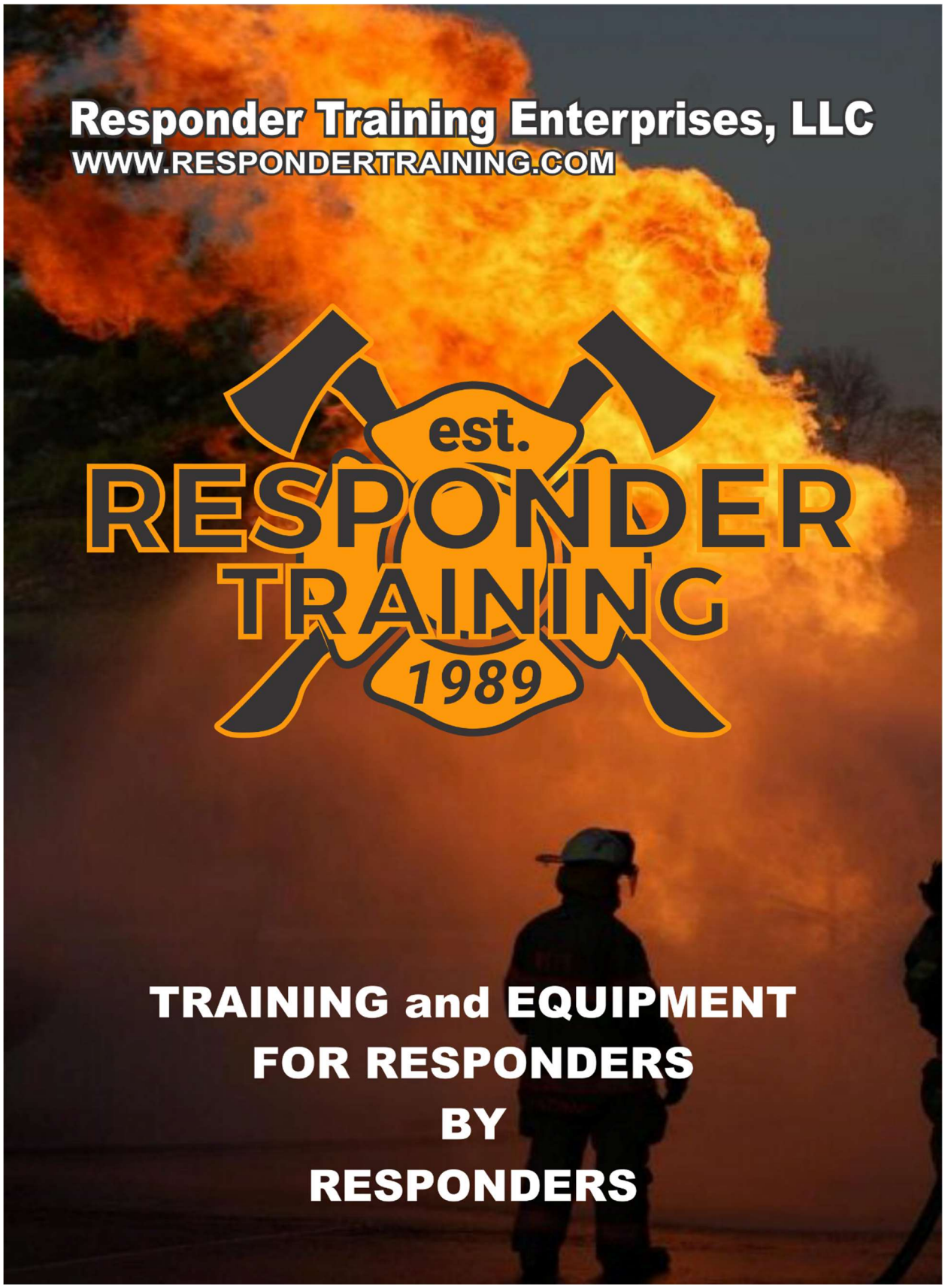
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