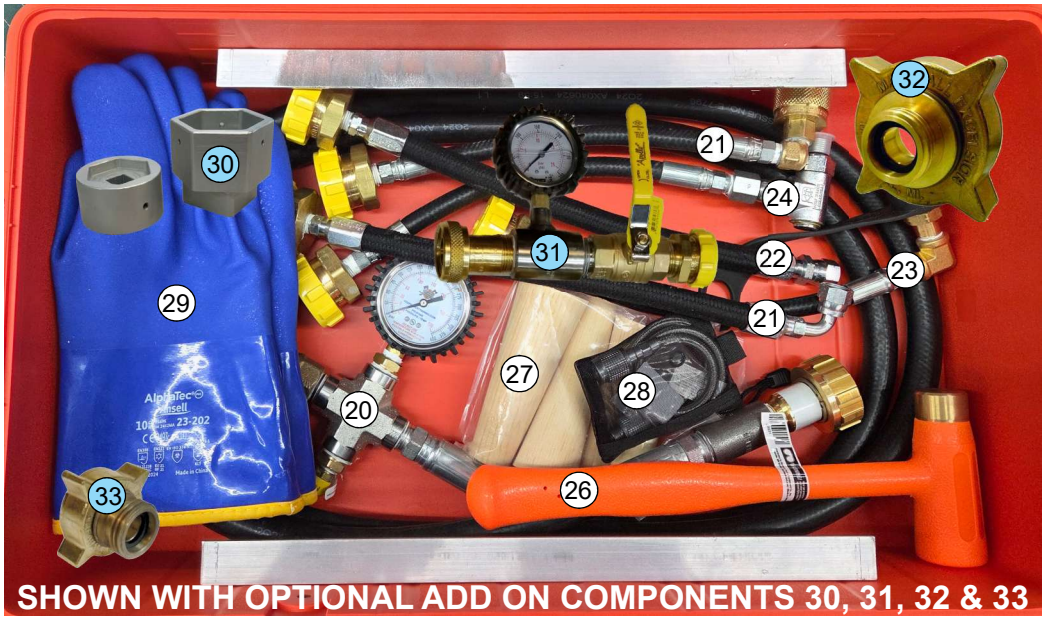
LPG Flaring Kit

Non-Bulk/Bulk MC331

Tank/Cyl Connection Quick Reference Guide





SHOWN WITH OPTIONAL ADD ON COMPONENTS 30, 31, 32 & 33

Components for Propane and Butane operations

Responder Training Enterprises, LLC
P.O Box 182
Shirley, Indiana 47384
(765) 524-4848
respondertraining.rdh@gmail.com

USERS GUIDE

10/23/2026
Version 1.0

INDEX

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6	COMMON Residential Tank Connections	
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12	ForkLift Tanks	
13	Specialty Tank Connectors	
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16	Liquid Withdrawal Valve Spec Sheet	
17	Fill Valves and Unloading Adapters	

Pages 14, 15 and 16 are handouts that I have created for our class titled “Propane Response – 101 to Advanced Tactics”. I added them in this Users Guide to aid you on scene.

If you are ever on scene and would like another perspective feel free to call me. If I can, I’ll take the call or I’ll call you back as soon as possible.

Ronald (Ron) Huffman, (765) 524-4848

“LPG Flaring Kit”

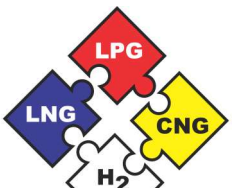
Video Links application Guide

As responders ourselves, we understand that your team members have alot to remember. This document has been designed using images and numbers assigned to the Propane Specialist Response Kits components to assist in quickly identifying what is needed to connect to what you’re working on.

To augment this users Guide I will be creating short videos to assist the first responders that can be viewed on scene. The QR code below will take you to a page on our website where you can select and view videos related to what you’re working on.

Scan this QR link to access the
Kit’s Users Guide Video Link Page





Response Equipment and Training
ResponderTraining.com
Contact: Ron Huffman, Local 1722 Retired (765) 524-4848

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NOTE
This users guide and associated online videos do not provided guidance or information for every component of the ***Response Kit*** or training. It is intended to augment training provided by ***Responder Training Enterprises, LLC.***

"LPG Flaring Kit"
Component Location Index

Kit Item Identifier **Description**

Kit Components (upper)

1 Unloading Adapter Straight (REGO 3119a)
2 Gasket Set
- 1-3/4" ACME Propane Filler Valve Gasket
- POL O-Ring
- Nylon Gasket
- Tube Grease
- Unloading Adapter O-Ring

3 OLD Style (Liquid)
4 RESERVED
5 NEW Style (Liquid)
6 RESERVED
7 Unloading Adapter 90 degree (REGO 3121)
8 1 Pound Cylinder to QCC Adapter
9 QCC Adapter
10 CGA 555 Adapter (used with #15)
11 1 Pound Cylinder Adapter (used with #15)
12 Forklift Adapter (used with #15)
13 Hose End Fill Check Adapter
14 High Pressure Quick Connect (used with #15)
15 POL Adapter
16 Low Pressure Quick Connector (used with #15)
17 3/8 Quick Connector (used with #15)
18 1-Pound Cylinder Male Adapter (used with #15)
19 Butane cylinder/Valve/Adapter
(used with #18 or extension hose in the lower level)

Kit Components (lower)

20 10-Foot Hose Assembly
21 3/8 Flare 90 One Foot Hose Assembly
22 3/8 Flare Straight One Foot Hose Assembly
23 POL One Foot Hose Assembly
24 #6 ORB Swivel One Foot Hose Assembly
25 Forklift One Foot Hose Assembly
26 Non-Sparking Hammer
27 Wood Plug Set
28 Butane Extension Hose
29 Gloves
30 Liquid Withdrawal Socket Set
31 1-inch Valve Assembly
32 3 1/4" x 1 1/4" Adapter
33 2 1/4 x 1 1/4" Adapter

} Optional items that are NOT included with the standard NON-BULK Kit but may be added to increase the kits capabilities:
TOOLS (LWSS), 1-INCH BALL VALVE ASSEMBLY BULK TANK & MC330/MC331 ADAPTERS

LPG Flaring Kit Users Guide
Component Location Index

Note: Some kit items are not referenced in this GUIDE because they are not specific valve connectors.

Upper Level



Lower Level



LPG Flaring Kit Users Guide
Component Usage Guide

COMMON Residential Tank Connections

Identified tank connection points may only need one of the items identified or multiple pieces to accomplish the task.





#7

"or"



#1

"or"



#13



#15

The flexible 90 degree POL hose connector #23 can be used instead of item #15



#23



#3





#5



#30

Liquid Withdrawal Tool Set



#20

Add a control valve assembly



#31

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LPG Flaring Kit Users Guide

Component Application and Identification Guide

1 1/2" Multi-Valve - *Tanks with multi-valves are commonly the tank fill location and utilize a dip tube and double as the liquid withdrawal*

Identified tank connection points may only need one of the items identified or multiple pieces to accomplish the task.

Fill Valve - 1 3/4" Male ACME and Liquid Withdrawal (LWV) if the pickup pipe is installed

80% Bleeder

Pressure Gauge Port

1 1/4' Male ACME Vapor Return Valve

Service Valve Vapor (P.O.L.)

80% Bleeder

Pressure Gauge Port





80% Bleeder



OLDER internal cap threads





#7

"or"

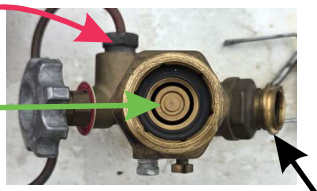


#1

"or"



#13



POL



#15

"or"



#23

Vapor Return

The flexible 90 degree POL hose connector #23 can be used instead of item #15

NOTE: ***Tanks with multi-valves may have had the dip tube removed and could be VAPOR service only.***



#20

Add a control valve assembly

#31

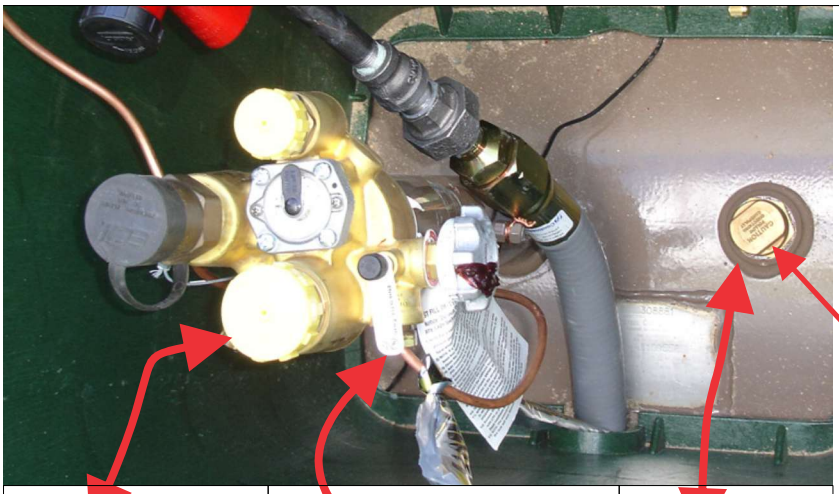


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LPG Flaring Kit Users Guide
Component Usage Guide

COMMON Underground Tank Connections

Identified tank connection points may only need one of the items identified or multiple pieces to accomplish the task.





New Style Liquid Withdrawal #5

Old Style Liquid Withdrawal #3



#7

"or"



#1

"or"



#13



#15

The flexible 90 degree POL hose connector #23 can be used instead of item #15



#23



#5

"or"



#3



#30

Liquid Withdrawal Tool Set



#20

Add a control valve assembly

#31

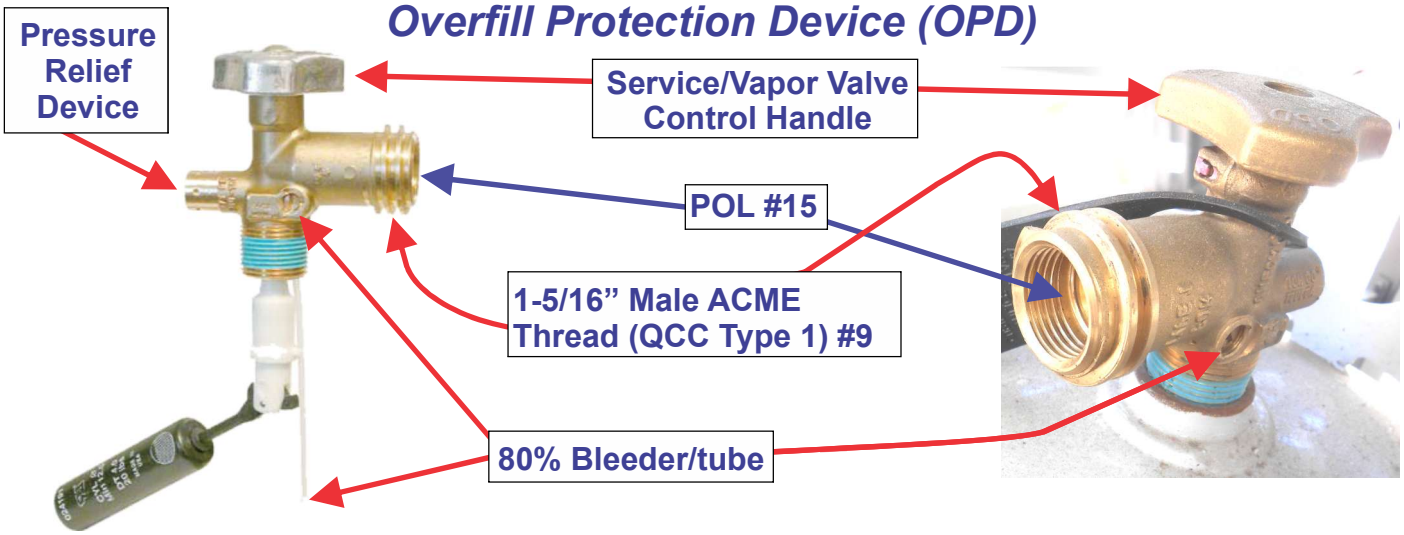


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LPG Flaring Kit Users Guide
Component Usage Guide

Identified tank connection points may only need one of the items identified or multiple pieces to accomplish the task.

Overfill Protection Device (OPD)




#9


#15

The flexible 90 degree POL hose connector #23 can be used instead of item #15


#23



Vapor Service Valve with POL Connection ONLY



#15



The flexible 90 degree POL hose connector #23 can be used instead of item #15


#23


#20

Add a control valve assembly

#31



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LPG Flaring Kit Users Guide
Component Usage Guide

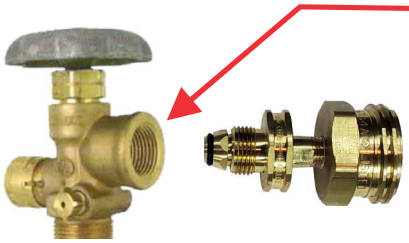
Identified tank connection points may only need one of the items identified or multiple pieces to accomplish the task.

100 Pound Cylinder Valves

Service/Vapor Valve Control Handle



Vapor Service Valve with POL Connection ONLY



#15

The flexible 90 degree POL hose connector #23 can be used instead of item #15



#23

Tank Fill Vapor Space

Service/Vapor Valve Control Handle



Vapor Service Valve POL



#20

Add a control valve assembly



#31

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LPG Flaring Kit Users Guide
Component Usage Guide

Motor Fuel / Tank Connections

Identified tank connection points may only need one of the items identified or multiple pieces to accomplish the task.











#15







#7

“or”

#1



“or”



#22

#21



#13

The flexible 90 degree POL hose connector #23 can be used instead of item #15



#23

Add a control valve assembly



#20



#31



LPG Flaring Kit Users Guide

Component Application and Identification Guide

Forklift

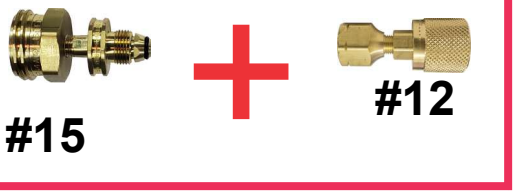




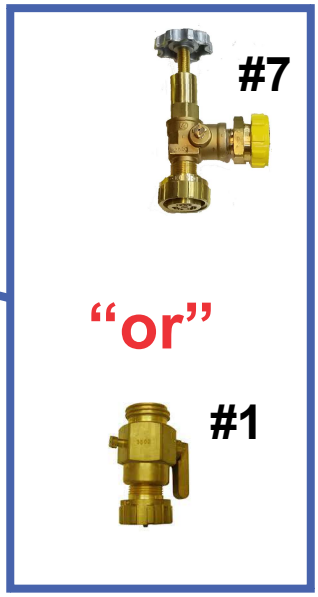














Add a control valve assembly



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LPG Flaring Kit Users Guide
Component Usage Guide

Specialty Tank Connections

Identified tank connection points may only need one of the items identified or multiple pieces to accomplish the task.

Camper Low Pressure (regulated) Connections





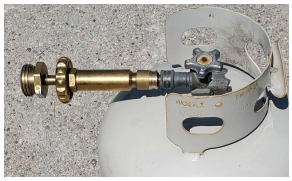
#17


#16

+


#15

HIGH Pressure Quick Connection



#14

+


#15

Cylinder Liquid Withdrawal Connection


#10


CGA 555

+


#15

The flexible 90 degree POL hose connector #23 can be used instead of item #15


#23


#20

Add a control valve assembly

1-Pound Cylinder






#11

+


#15

Butane Cartridge



#15

#18

#19

3 pieces
*Disposable Cyl Adapter (female)
*Valve w/handle
*Butane cartridge connector


#28

Extension Hose in case (lower)

LPG Flaring Kit Users Guide

Component Application and Identification Guide

Bulk Plants and DOT MC330/331

Identified tank connection points may only need one of the items identified or multiple pieces to accomplish the task.

Bulk Plants





DOT MC330/331







Bulk Tank, Bobtail and Transport options

2 1/4” ACME



#33

3 1/4” ACME



#32



#31

(OPTIONAL ADD ON COMPONENTS)

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LPG Flaring Kit Users Guide

Component Application and Identification Guide

AFV Alternative Fuel Vehicle - ROUSH Propane SYSTEM

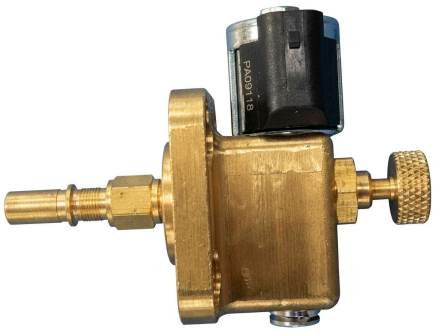
Identified tank connection points may only need one of the items identified or multiple pieces to accomplish the task.



Blue Bird Vision
Liquid Propane Autogas
Service Manual GEN 4 LPG System



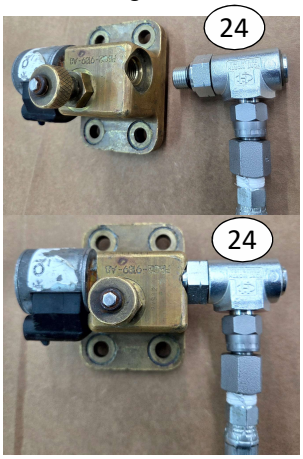
NEW STYLE



OLD STYLE



#6 ORB 90 Degree Swivel Adapter



Shown with ROUSH
OLD style tank valve



#20

Add a control valve assembly

#31



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LPG Flaring Kit Users Guide

Component Usage Guide

Liquid Withdrawal Valves

Performing liquid withdrawal operations on an OLD style Chek-Lok using the 7572C-14A adapter has always been accompanied by a release of liquid propane until the adapter has been tightened down. The New style adapter (7590U-10) stops the release with the new design and the use of an O-Ring.



Old Style Liquid Withdrawal



Old Style
7572C-14A





Valve Assembly #3

This style adapter is used on the Old style Liquid Evacuation Valve and ***DO NOT seal to the tank unit until it is securely tightened***.



New Style
7590U-10



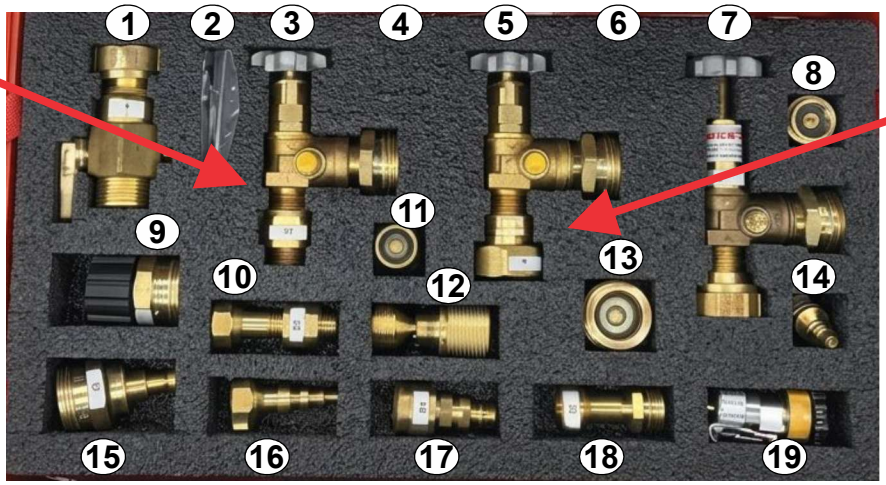
New Style Liquid Withdrawal





Valve Assembly #5

NEW style Liquid Evacuation Valve adapter utilizes an ***O-ring*** to seal the valve to the tank unit.



#30



Liquid Withdrawal
Tool Set

Loosen cap to vent any accumulated LP-Gas from the Liquid Withdrawal Valve. After venting stops, remove the cap. If venting does not stop, retighten the cap and use other approved means to withdraw liquid from the container. ***NOTE:*** Use a suitable size wrench when removing the cap and adapter from the Chek-Lok. ***Do not allow the Chek-Lok to un-thread from the tank during removal.***
When necessary, use a second wrench to secure the Chek-Lok in position.

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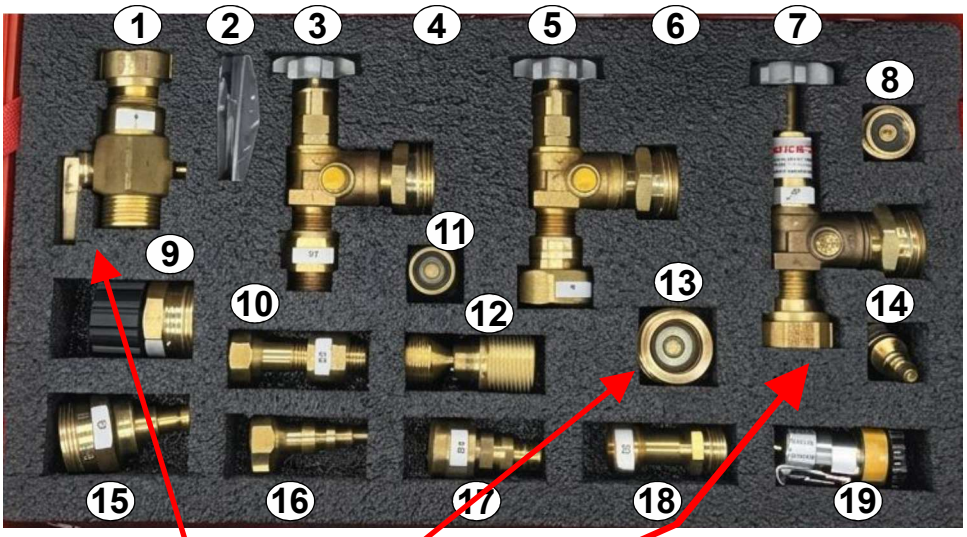
Propane Fill Valves and Unloading Adapters

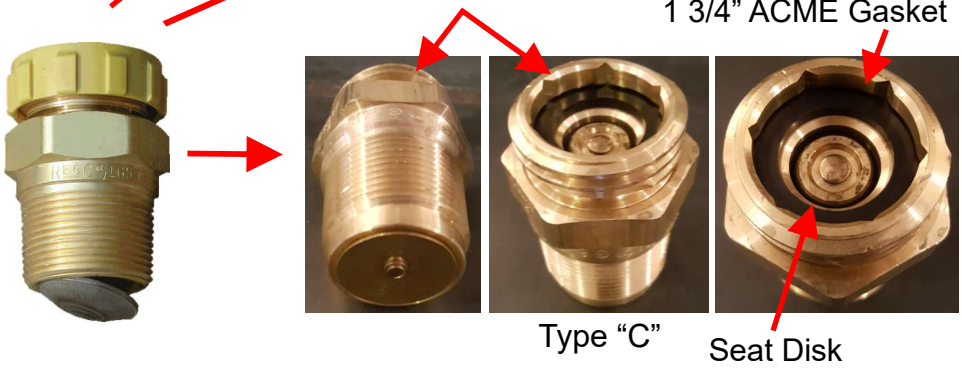
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On most tanks and cylinders without a dedicated large bore vapor connection such as a Mc331, a 1-3/4” ACME connection that is commonly used as a filler valve would be a good choice for vapor flaring operations.

Note: Unloading adapters such as the REGO 3119a and the REGO 3121 are not valves. They are designed to open the tank connection only. A separate control valve assembly should be installed inline in case the tank valve does not reseat.







LIQUID LOADING-UNLOADING ADAPTOR
(In and Out)

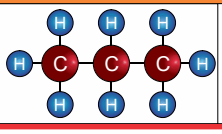
SPECIAL NOTE: when using the Rego 3121 adapter verify that the valve stem is completely retracted prior to connecting it to the Double-Check Filler Valve. Failure to do so may cause an unwanted product release.

3121 WARNING: Do not force the handwheel if it appears that the Filler Valve is wide open. In many makes of valves, the valve stem travel may be less than the plunger travel of the Unloading Adapter.

Propane Fact Sheet

DOT GUIDEBOOK GUIDE # 115, 366, 367, 374

Chemical Name: **Propane**
Chemical Family: **Hydrocarbon**
Chemical Formula: C_3H_8



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CAS Registry No.: **74-98-6**
IDLH: **2200 ppm** (based on 10% LEL)
LEL: **2.15 (2)** UEL: **9.6 (10)**
Vapor Density: **1.5**
Specific Gravity: **0.5**
Vapor Pressure: **95 psig @ 60 Deg. F**
Boiling Point: **-44 Deg. F**
Freeze Point -306
Evaporation Rate: **Gas at normal ambient temperatures**
Flash Point: **-156 Deg. F**
Ignition Temp.: **900 - 1100 Deg. F**
Weight: **4.24 Lbs. per gallon @ 60 Deg. F**
Expansion Ratio: **270 - 1**
Solubility: **Not soluble in water**

UN #

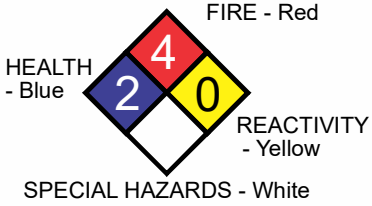


PROPANE



LIQUIFIED PETROLEUM GAS

NFPA -704



Color: **Colorless**
Odor: **Odorless, ALSO SEE BELOW**
Percent Volatile by Volume (%): **100**
Stability: **Stable**
Hazardous Polymerization: **Will not occur**
Decomposition Products: **CO, CO_2**
OSHA PEL: **1000 ppm**
ACGIH TLV: **1000 ppm**

STORAGE VESSALS

Propane and other Liquified Petroleum Gases (LPG) are shipped in container sizes from less than 1 ounce, to over 34,000 gallons (railcar). Cigarette lighters, hand held torches, spray cans, semi trailers and rail cars can all be used as a vessel to hold propane and other LPG's.
Normally small cylinders (less than 4 lbs.) are used to supply propane vapor and do not have a dip tube (80% liquid tube). If a cylinder that was designed to supply vapor only is inverted, liquid will be expelled from the vapor opening. If this happens, place the cylinder in an upright position to convert the leak back to vapor.
20 lb. or gas grill type cylinders should never be stored in an inverted position, unless completely void of liquid. ***NEVER use the OPD valve as the fill stop.***

Pre-Plan your local area and know what's being transported, stored and how!

EMERGENCY RESPONSE

Warning : Danger! Compressed Flammable gas. Simple asphyxiate: death possible in higher concentrations (IDLH 2200 ppm). Contact with liquid causes cryogenic type burns, can be extreme, similar to frost bite.

If responding to a tank on fire: **YOUR FIRST DECISION** must be whether to apply water or evacuate the area. If an attack is made, apply water to the point of flame contact first and continuously then to other tank surfaces to cool the tank. If possible use un-maned or remote nozzles. After the fire has been extinguished continue to apply water to the tank surface until the tank is cool. If possible you should NOT extinguish a flammable gas fire with-out shutting off the flow of gas first unless the flame is impinging on the vapor space. If this happens continually disperse product vapors until the hazard is removed.

If responding to a potential odor/leak: Arrive with your meter ready. Calibrated and warmed up, Wear all of you PPE, test LOW, medium and high in accordance with your departments SOP's and SOG's.
Liquid leaks may be able to be converted to a water leak using water injection.

PPE

***Respiratory:** SCBA for gas unknown concentrations and concentrations above occupational exposure limits and firefighting.
***Hands:** Use cold-impervious, insulating gloves where contact with liquid may occur that will not freeze to objects.
***Eyes:** Possibility of liquid contact, wear splash-proof safety glasses and face shield.
***Skin and Body:** Where contact with liquid may occur, wear appropriate cold insulating protective clothing and face shield (SCBA). Structural PPE required for firefighting.
Extinguishing Media: Shut off source, Water Injection, Water spray, Class A-B-C or BC extinguisher.
Product vapors will gather in low areas, check all low areas for gas vapor accumulations (ditches, sewers, river beds and structure), disperse product vapors with water fog or forced air.
CAUTION: Flammability limits (i.e., explosion hazard) should be considered when assessing the need to expose personnel to concentrations requiring respiratory protection.

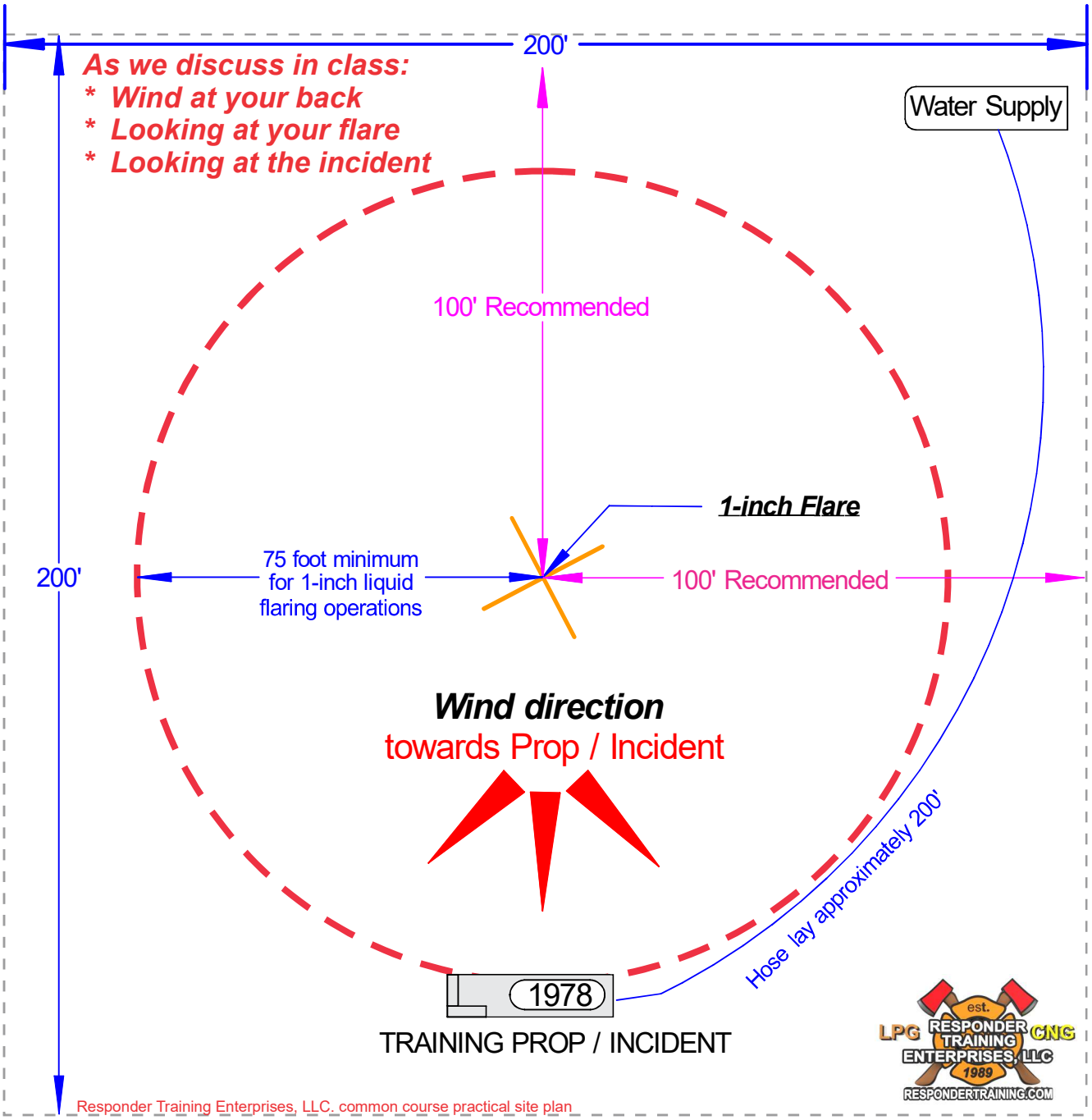
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Flaring Site Plan (training/incident)

Propane Response - 101 to Advanced Tactics Class practical site plan for ***Liquid*** Propane Flaring Operations using the ***1-inch Responder Flare (AKA The Dragon Slayer)***.

Smaller flares with reduced flows or propane systems that can not supply full 1-inch liquid flows ***will not require the same size spacing.***



These are the "minimum" distances "*commonly used*" by Responder Training Enterprises, LLC. based on the radiated heat produced while burning ***LIQUID*** propane using our ***1-inch flare***.