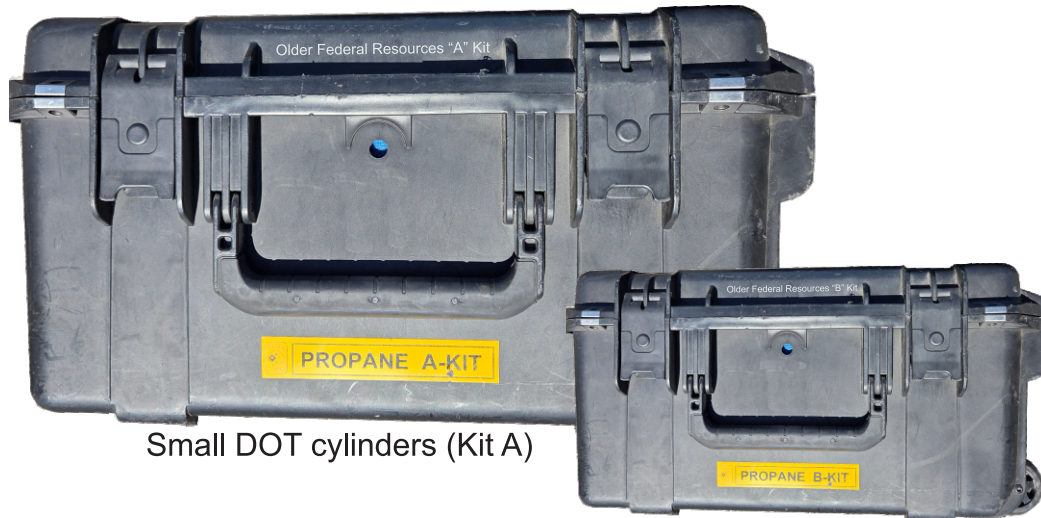


2026/08/15
Version 1.0.001

PROPANE A & B Kits



Small DOT cylinders (Kit A)

Residential ASME tanks (Kit B)



Tank/Cyl Connection Quick Reference Guide



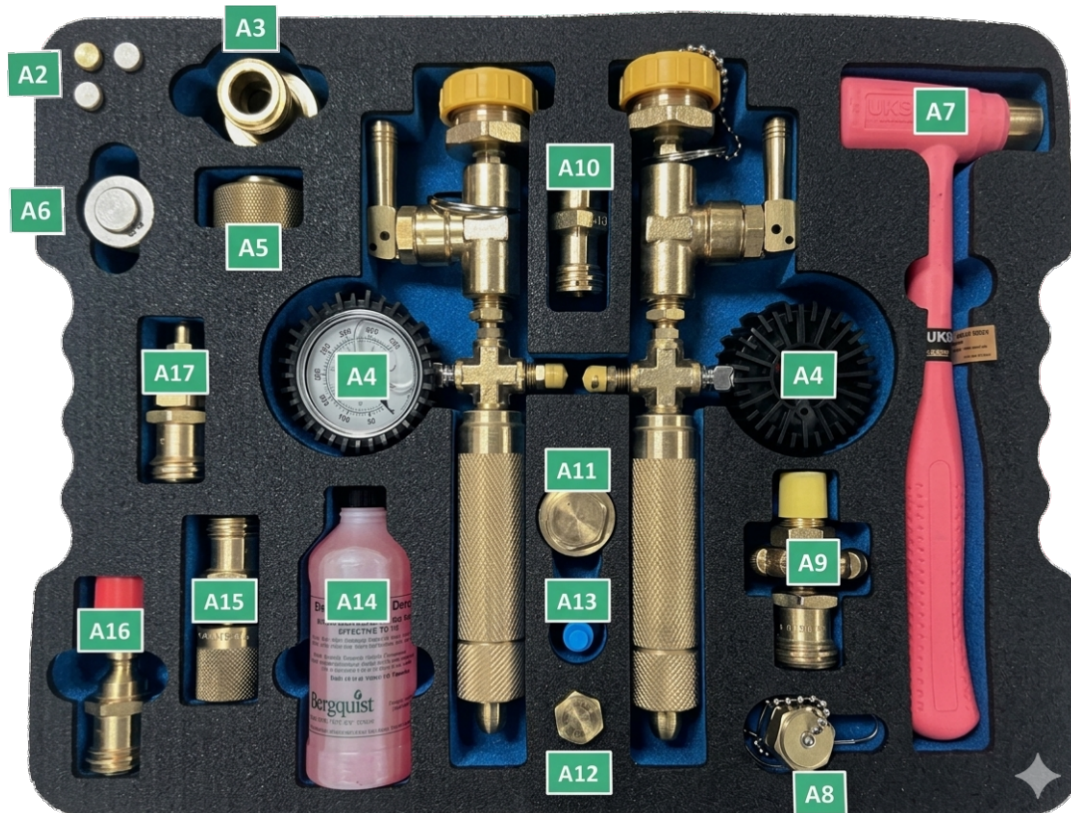
Created By: Ron Huffman, Owner
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19	Common Tank/Cylinder Information Handout	
20	Flaring Site Plan (training/incident)	
	Note: Your departments kit may have been altered through the years. Verify all connections are correct prior to use.	



A2 - BLEEDER PLUG

A3 - 1 3/4" FEMALE ACME X 1 5/16" MALE ACME (QCC)

A4 - GAUGE ASSEMBLY 1 3/4" MALE ACME X 1 5/16" FEMALE ACME (QCC)

A5 - 1 3/4" CAP

A6 - 1 1/4" CAP

A7 - HAMMER

A8 - CGA555 CAP

A9 - POL X 1 5/16" MALE ACME

A10 - 3/8" FEMALE NPT X 1/4" MALE ACME

A11 - QCC CAP

A12 - POL PLUG

A13 - FULL PRESSURE 1/4" QUICK CONNECTOR X FEMALE POL

A14 - LEAK DETECTION SOLUTION

A15 - FORKLIFT X 1 5/16" MALE ACME (QCC)

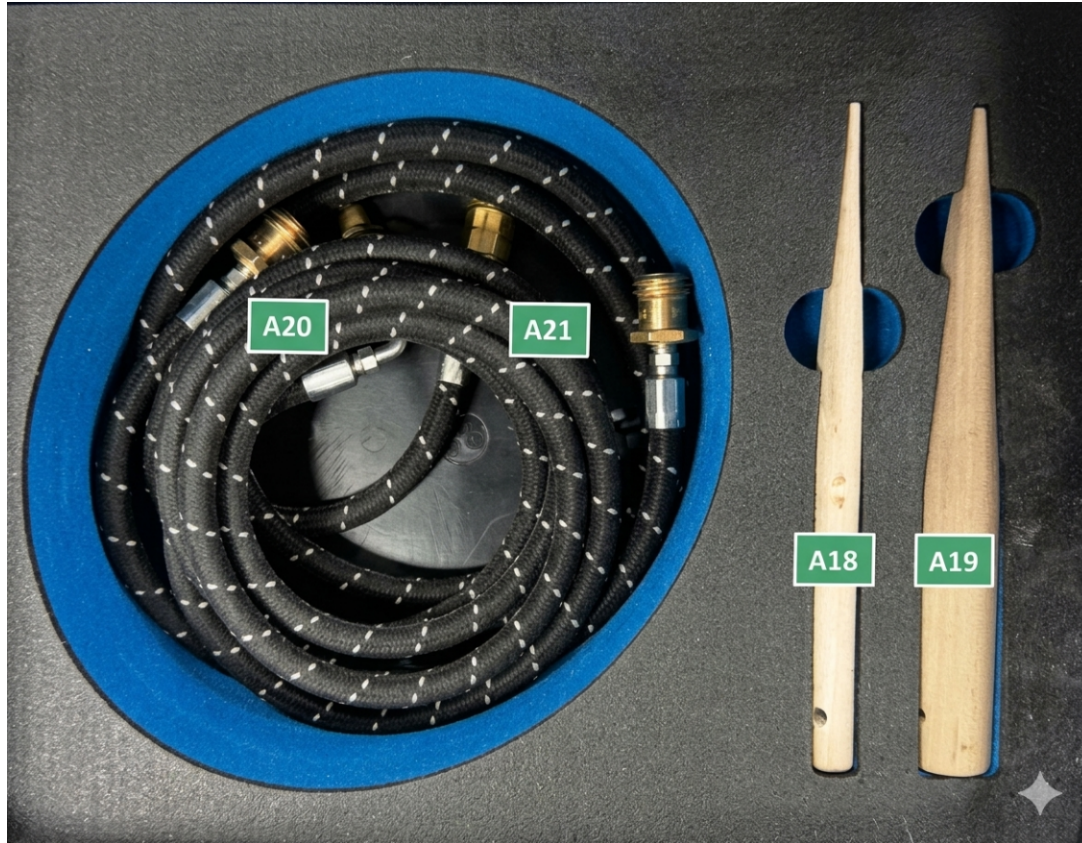
A16 - DISPOSABLE CYLINDER ADAPTER X 1 5/16" MALE ACME (QCC)

A17 - Liquid Withdrawal (CGA 555) X 1 5/16" MALE ACME (QCC)



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A18 - TAPER PLUG SMALL

A19 - TAPER PLUG MEDIUM

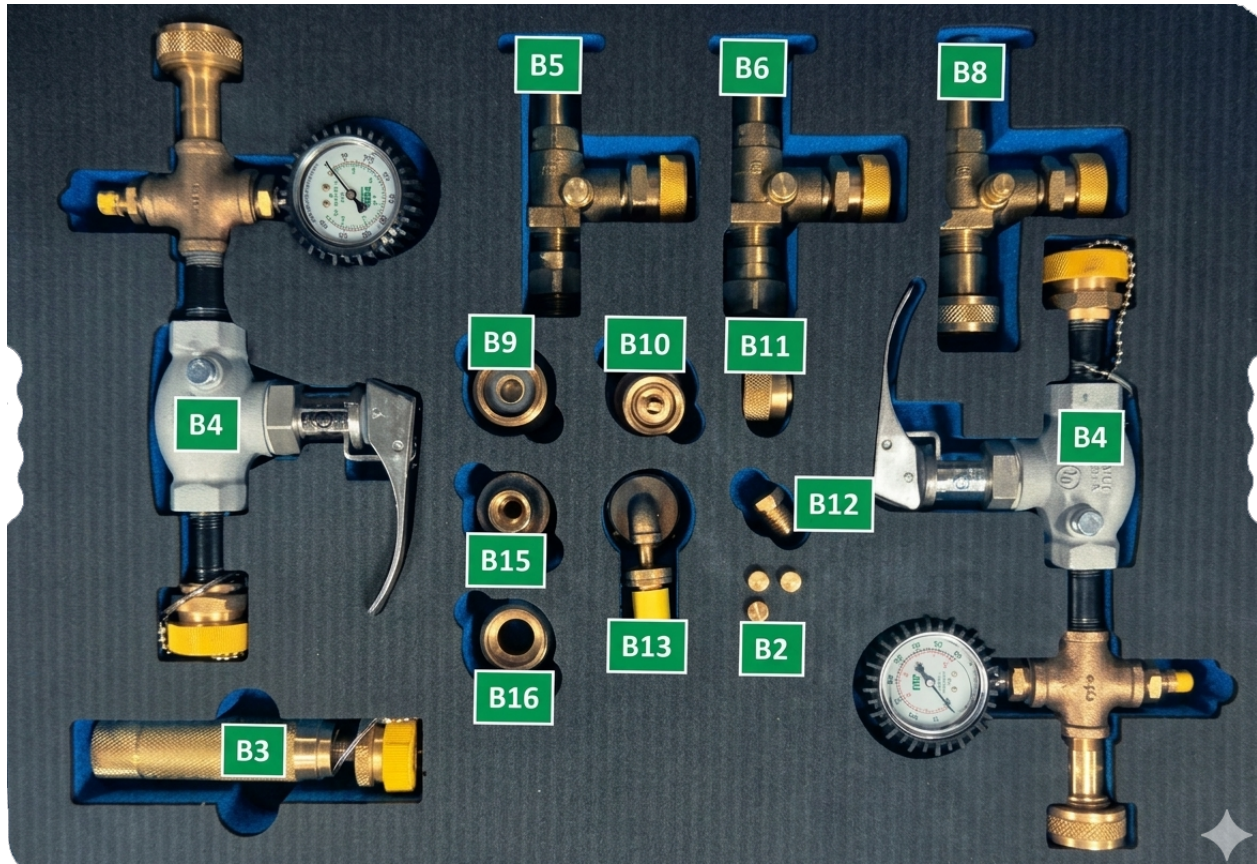
A20 - MALE QCC x STRAIGHT 3/8 FLARE with Female QCC ADAPTER

A21 - MALE QCC x 90 degree 3/8 FLARE with POL Adapter



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PROPANE Response**B Kit Users Guide**

B2 - BLEEDER PLUG

B3 - 1 3/4" MALE ACME X 1 5/16" FEMALE ACME (QCC)

B4 - GAUGE ASSEMBLY - 1 3/4" MALE ACME X 1 3/4" FEMALE ACME

B5 - **OLD STYLE LIQUID WITHDRAWAL** VALVE X 1 3/4" MALE ACME

B6 - **NEW STYLE LIQUID WITHDRAWAL** VALVE X 1 3/4" MALE ACME

B7 - HAMMER

B8 - **LIQUID FILL (VAPOR space)** UNLOADING ADAPTER X 1 3/4" MALE ACME

B9 - 1 3/4" FILL CHECK

B10 - 1 1/4" VAPOR RETURN X 1 3/4" MALE ACME

B11 - 1 1/4" CAP

B12 - POL PLUG

B13 - POL X 1 3/4" MALE ACME

B14 - LEAK DETECTOR (in the bottom of the case)

B15 - FEMALE POL X 1 3/4" FEMALE ACME

B16 - 1 3/4" MALE ACME X 1 3/4" MALE ACME



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B7 - HAMMER

B17 - MALE POL X 1 3/4" MALE ACME

B18 - TAPERED PLUG SMALL

B19 - TAPERED PLUG MEDIUM

B20 - TAPERED PLUG LARGE

B21 - 1 3/4" FEMALE ACME X 1 3/4" FEMALE ACME

B22 - 1 3/4" FEMALE ACME X 1 3/4" MALE ACME WITH VALVE

B23 - 1 1/4" VAPOR CONNECTOR X 1 3/4" MALE ACME WITH VALVE

B24 - 3/4" MALE NPT PIPE X 1 3/4" MALE ACME WITH VALVE

B25 - 3/4" FEMALE NPT REDUCING COUPLING X 1/4" MALE NPT

B26 - 3/4" FEMALE NPT REDUCING COUPLING X 1/2" MALE NPT

B27 - 3/4" FEMALE NPT PIPE X 1" MALE NPT REDUCER

B28 - 3/4" FEMALE NPT PIPE X 1 1/4" MALE NPT REDUCER

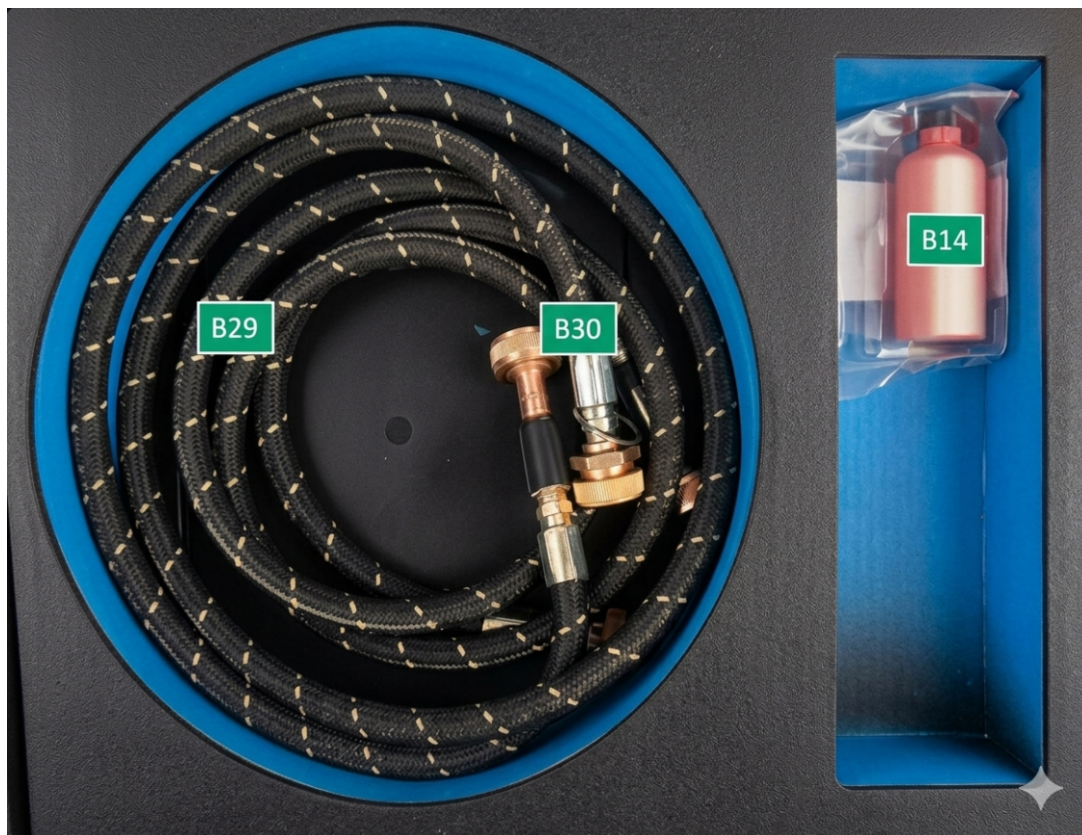


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PROPANE Response

B Kit Users Guide



B14 - LEAK DETECTION SOLUTION

B29 - 1-3/4 MALE ACME x 1-3/4 FEMALE ACME - 90 DEGREE

B30 - 1-3/4 MALE ACME x 1-3/4 FEMALE ACME - STRAIGHT ENDS



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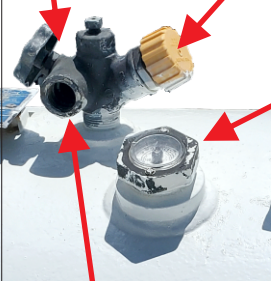
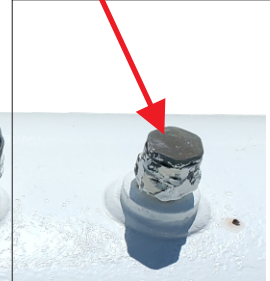
Propane A - B Response Kit Users Guide

Component Application and Identification Guide

COMMON Horizontal Residential Tank Connections



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

Vapor/Fill Valve 1 3/4" Male ACME See page "17" (FILL Valve)	Service Valve Vapor (P.O.L.)	Vapor Return 1-1/4" Male ACME	Liquid Volume Gauge 0-100%	OLD Style Liquid Withdrawal Valve	NEW Style Liquid Withdrawal Valve
					
 B8 "or"  B9	 B17 "or"  A9 "or"  B13 "or"  A21 "or"  A12	 Pressure Relief Device	 Old Style Liquid Withdrawal See page "16" for additional information  B5	 B6	
	 Vapor Return B10				

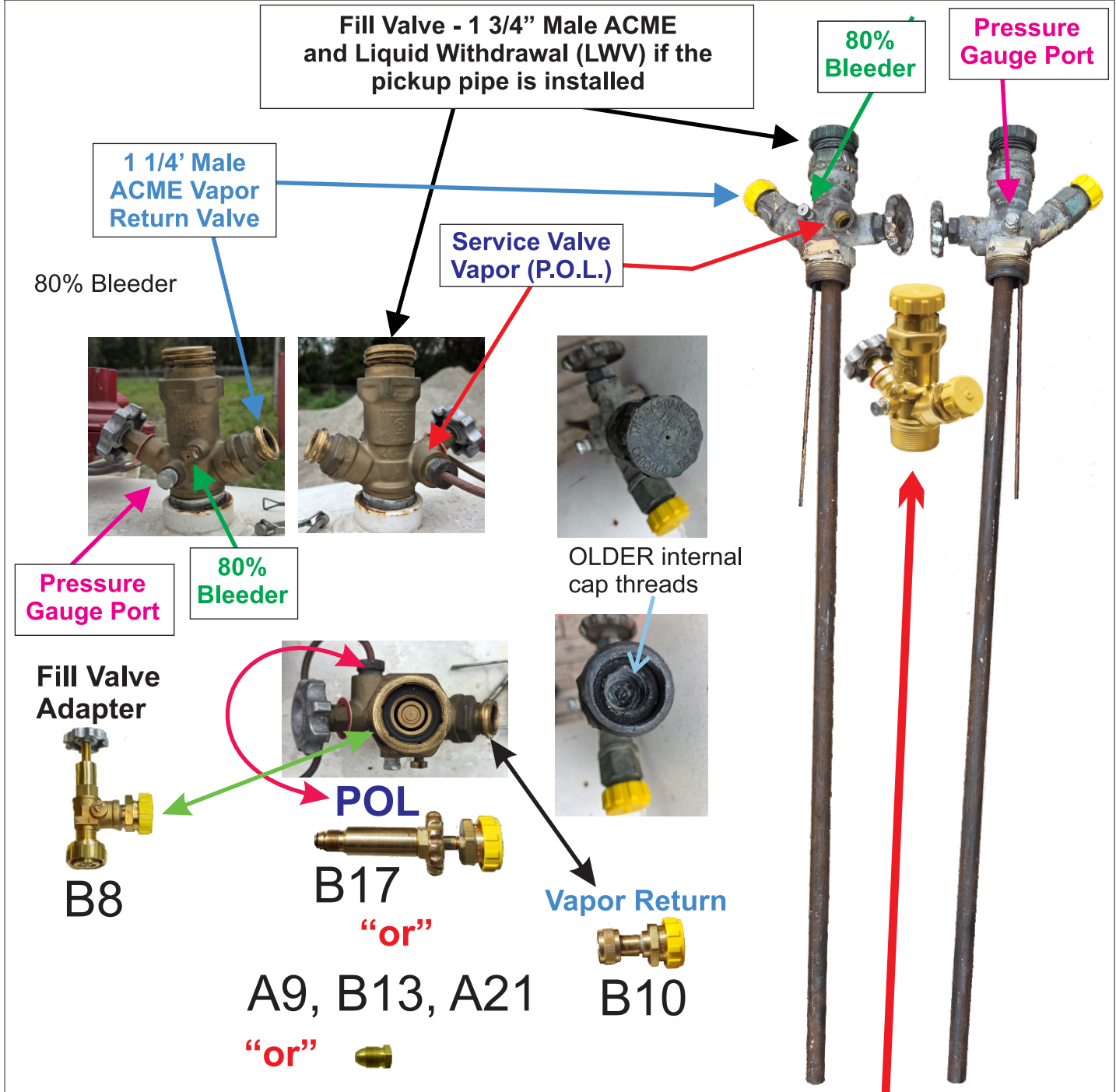
Propane A - B Response Kit Users Guide

Page 9

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.



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



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Propane A - B Response Kit Users Guide

Component Application and Identification Guide

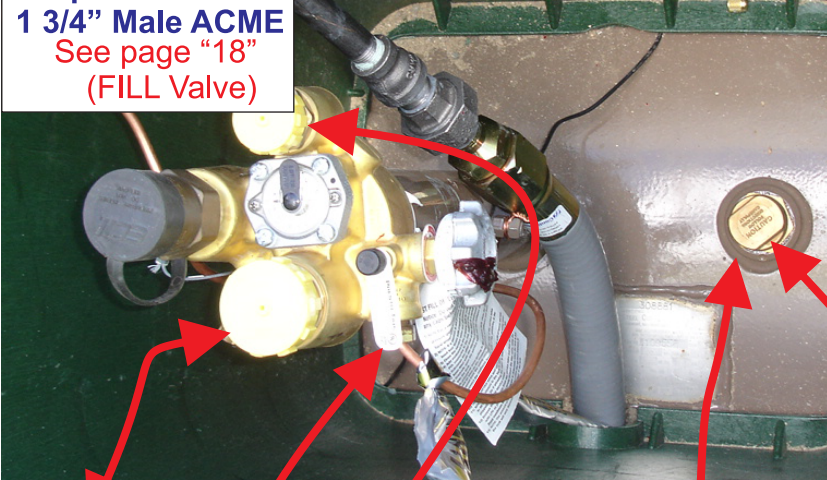
Page 10



COMMON Underground Tank Connections

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

Vapor/Fill Valve
1 3/4" Male ACME
See page "18"
(FILL Valve)



B8

"or"



B9



B10



B17

"or"

A9, B13, A21

"or"



A12

B6

New Style Liquid
Withdrawal B6
See page "16"

"or"

Old Style Liquid
Withdrawal B5
See page "16"



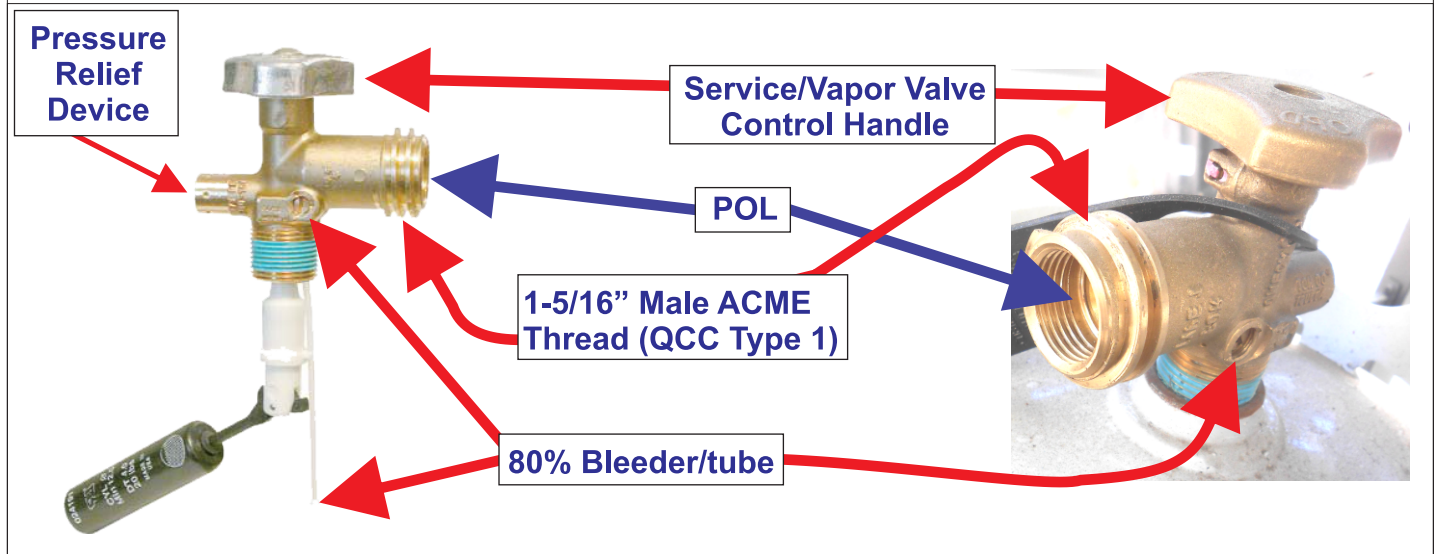
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Component Application and Identification Guide

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

Overfill Protection Device (OPD) REQUIRED ON 4-40 POUND TANKS



B3

POL



B17

A9, B13,
A21 A12



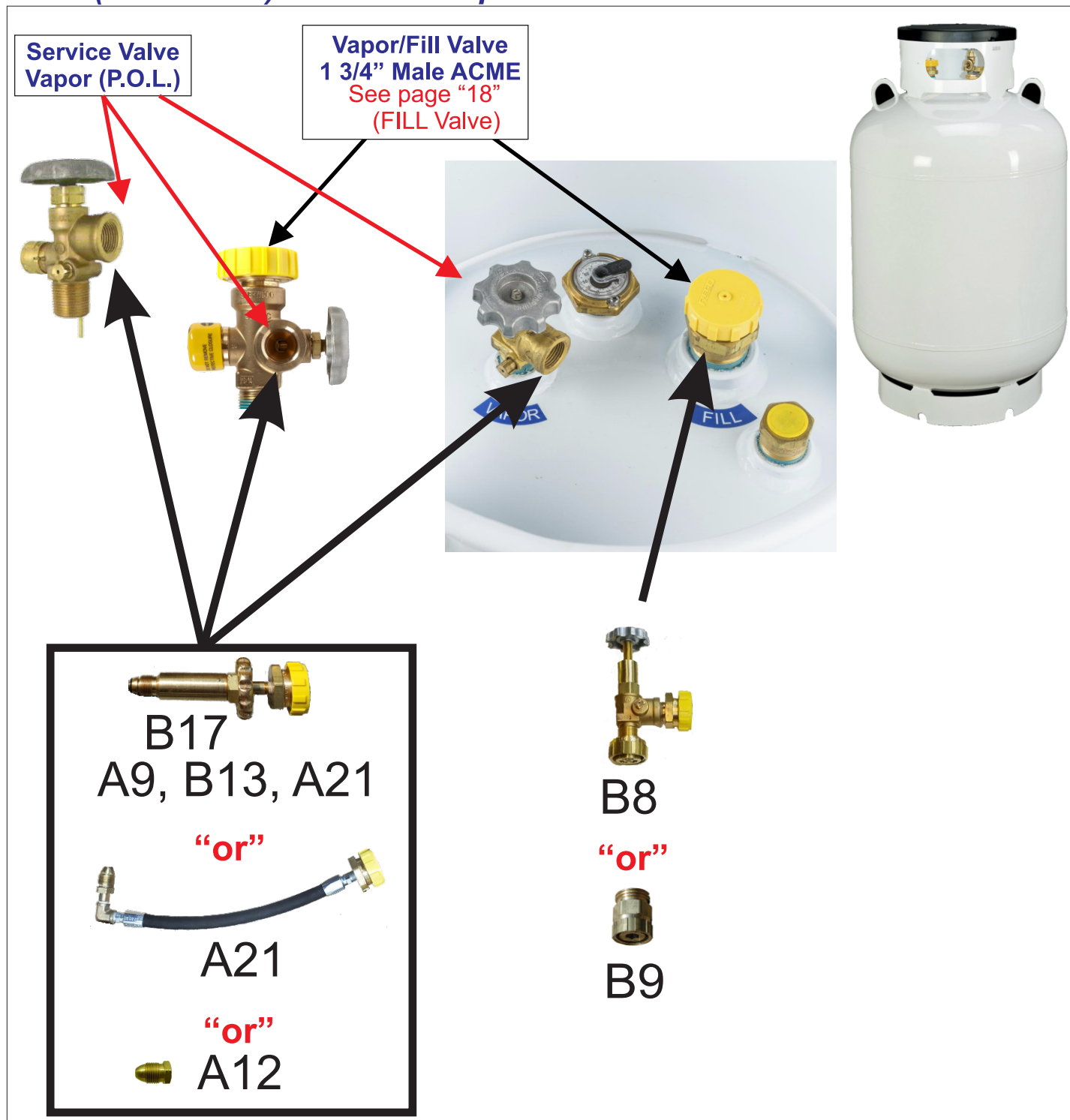
Vapor Service Valve with POL Connection ONLY



Component Application and Identification Guide

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

420# (100 Gallon) Tank Valve options

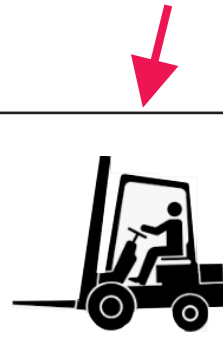
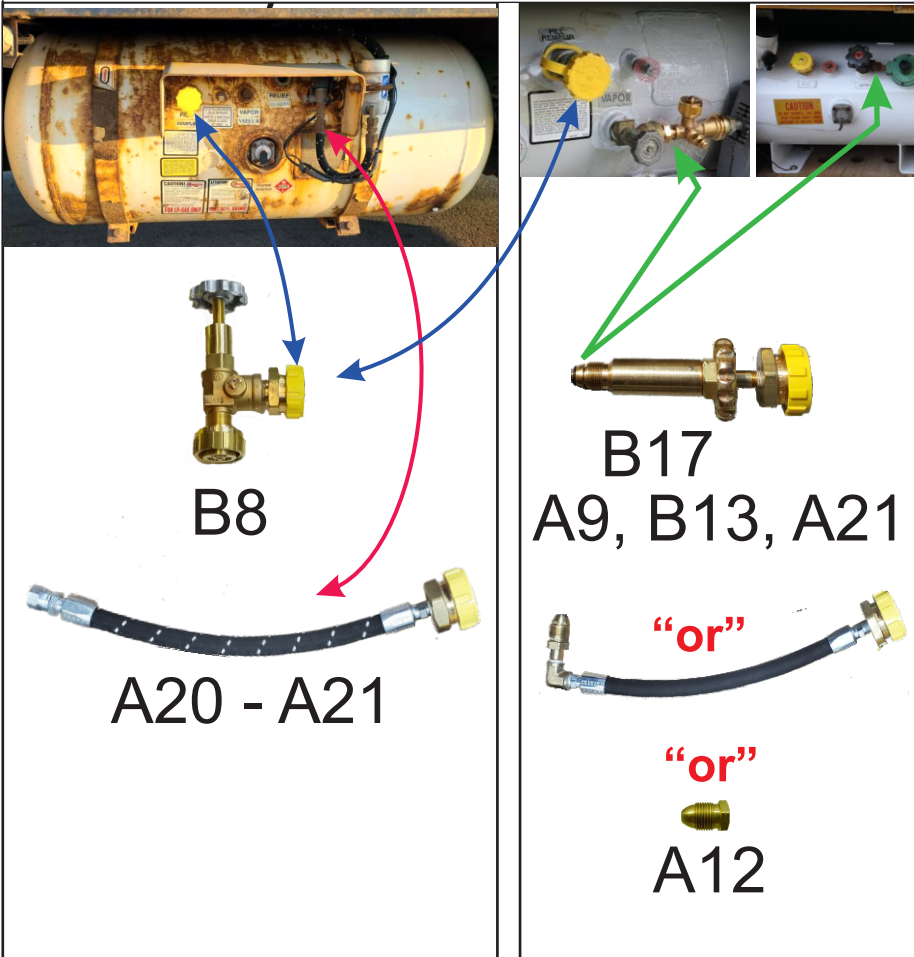


Component Application and Identification Guide

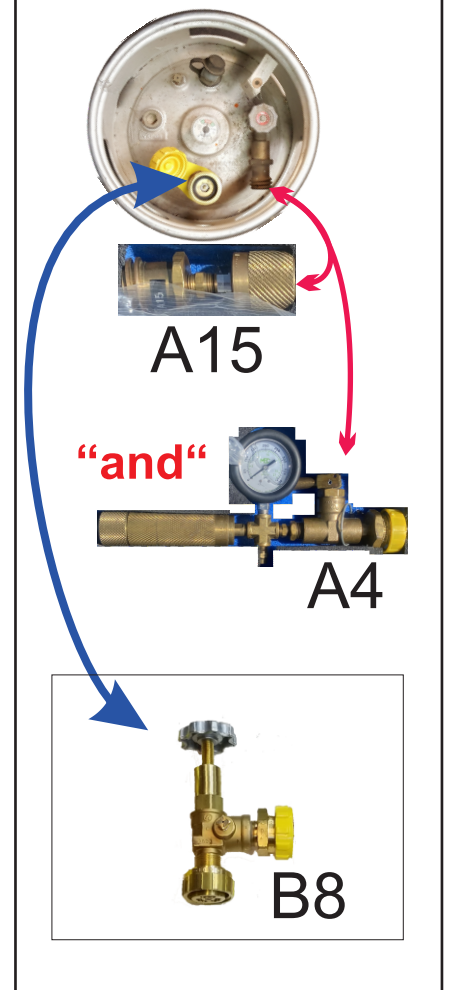
Motor Fuel Tanks

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

Motor Fuel Connections



ForkLift Connections



Specialty Tank Connections

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

HIGH Pressure Quick Connection



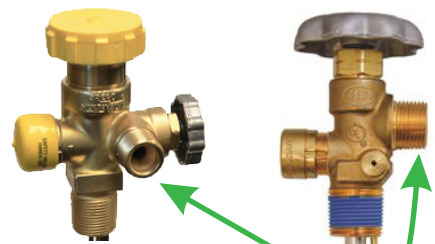
B17
A9, B13, A21

“or”



A21

Cylinder Liquid Withdrawal Connection (CGA 555)



A17

Male
LEFT
HAND
thread

“and”

A4

1-Pound Disposable Cylinder



“+”



B17

“or”

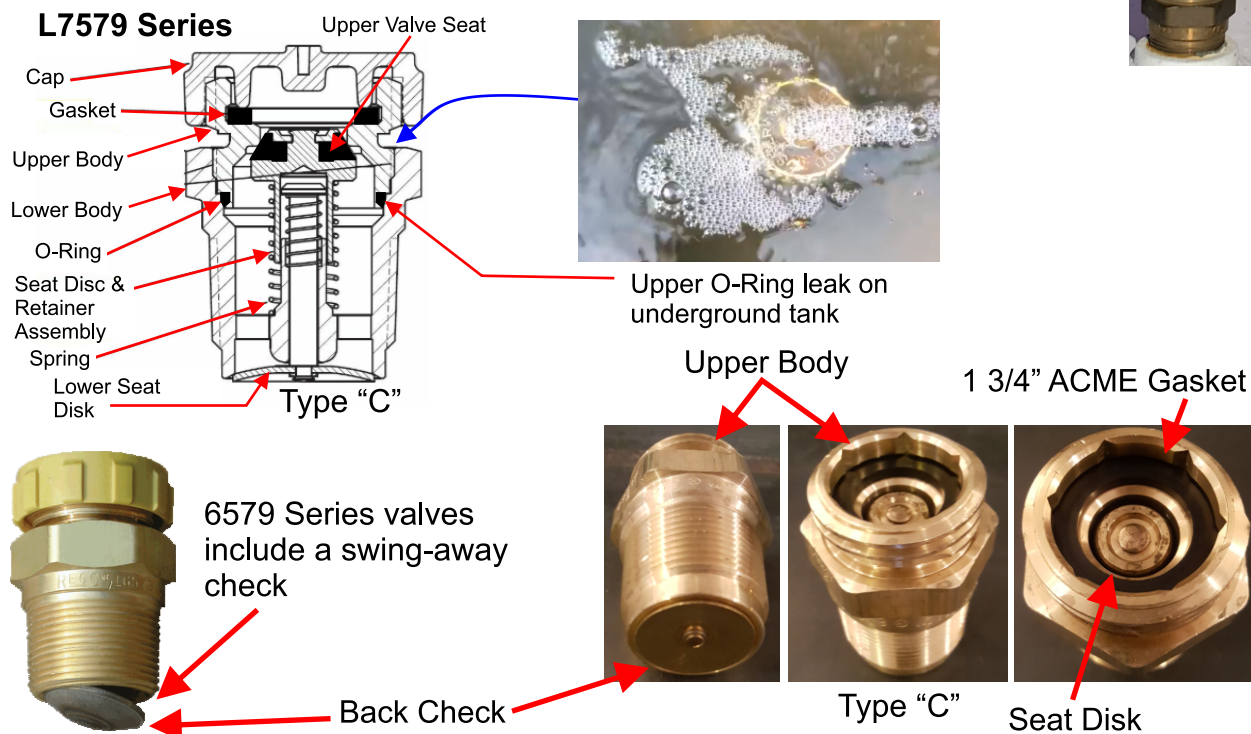


A21

Propane Fill Valves and Unloading Adapters

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 reseal.



SPECIAL NOTE: when using the Rego 3121 or Marshal Excelsior 450 adapter verify that the valve stem is completely retracted (UP) prior to connecting it to the Double-Check Filler Valve. Failure to do so may cause an unwanted product release.

Screw Down to OPEN - Up to CLOSE

WARNING: In many makes of valves, the valve opening distance may be less than the plunger travel of the adapter. Do not force the handwheel if it appears that the Filler Valve is wide open (screwed down).



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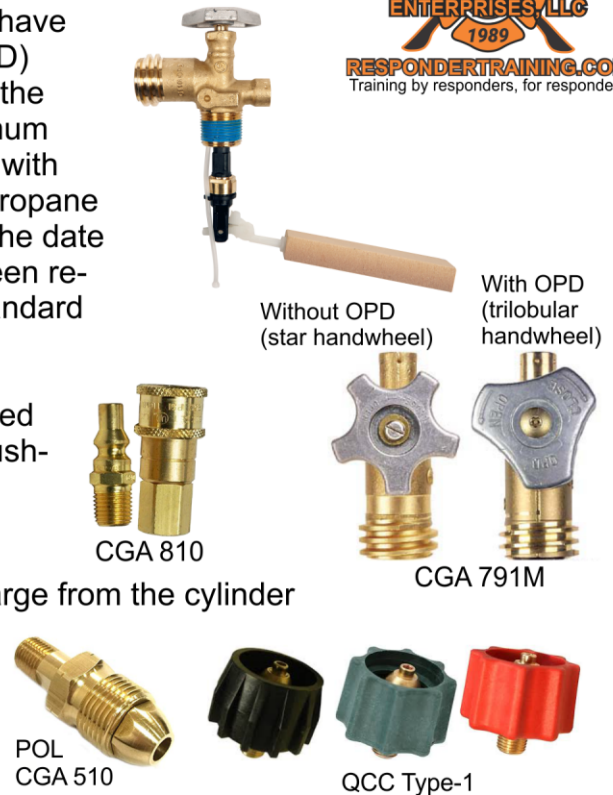
OPD Valve with QCC Type 1 and POL Connections



Since October 1st 1998 all new 4 to 40 pound cylinders have been required to have an Overfill Protection Device (OPD) installed. The OPD is designed to stop product flow into the cylinder during the filling process in excess of the maximum permitted filling limit or 80% of the tanks capacity. Along with this change came the Federal regulation requiring that propane tanks with an OPD's must be re-certified 12 years from the date of manufacture stamped on the tank. Tanks that have been re-certified must then be re-certified every 5 years. This standard has changed to exclude horizontal tanks.

OPD cylinder valves may have either a CGA (Compressed Gas Association) 791 (ACME threads) or a CGA 810 (push-pull, quick disconnect) connection device.

In addition to the 80% fill limiter, OPD valves contain a Discharge Check Valve. It's purpose is to prevent discharge from the cylinder unless a POL (Prest-O-Lite) or QCC (Quick Closing Coupling) type-1 fitting is connected to the valve. When the connector is properly threaded onto the OPD valve it pushes open the Discharge Check Valve and allows propane to flow through the connector and to the attached appliance.

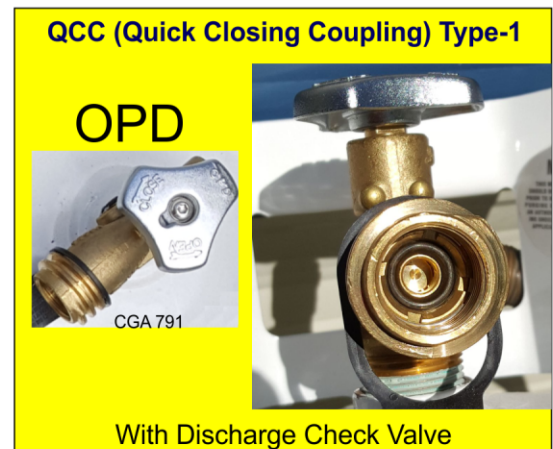
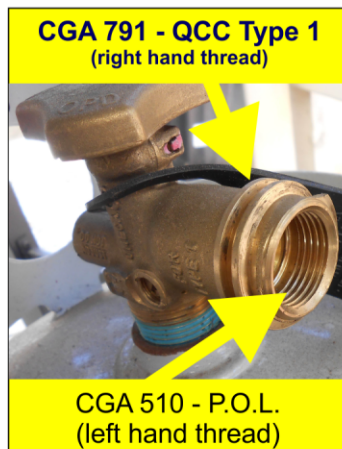


QCC Type 1 connectors are color coded to indicate the maximum BTU per Hour that each are capable of producing. **BLACK** is the lowest at 100,000 BTU/hour, **GREEN** is next at 200,000 BTU/hour and **RED** is the maximum at 400,000 BTU/hour.

Currently OPD valves with the QCC Type-1 connector are still capable of receiving a male POL, this could change someday. But, for now if you need to flare a larger quantity of propane than the QCC Type-1 is capable of, you may be able to use a full flow POL.

The QCC connector (CGA 791) is a 1-5/16" ACME (right hand thread) which is found on BBQ and other systems with OPD valves.

When purchasing propane equipment such as portable heaters they often are shipped with a POL connector. Don't be confused by the large QCC Type-1 threads.



Propane A - B Response Kit Users Guide

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Component Application and Identification Guide

Liquid Withdrawal

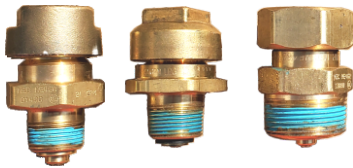
Performing liquid withdrawal operations on an OLD style Chek-Lok using the 7572C-14A adapter has always been accompanied by a release of liquid propane until the adapter has been tightened down. The New style adapter (7590U-10) stops the release with the new design and the use of an O-Ring.



New Style
7590U-10

Box 2 - #31, 35
Box 4 - #81

New Style Liquid Withdrawal



Old Style Liquid Withdrawal



Old Style
7572C-14A

Box 2 - #36
Box 4 - #80



Box-2 #35



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



Box-2 #36



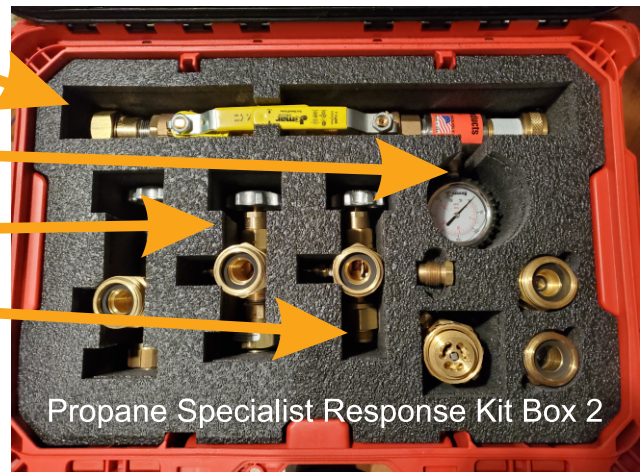
This style adapter is used on the Old style Liquid Evacuation Valve and **DO NOT seal to the tank unit until it is securely tightened.**

New Style Liquid Withdrawal (straight)
Box-2 #32

1-inch Control Valve W/Gauge
Box-2 #33

New Style Liquid Withdrawal
Box-2 #35

Old Style Liquid Withdrawal
Box-2 #36



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.**

Contact Responder Training Enterprises, LLC, for your propane response training and equipment needs. Ron Huffman, respondertraining.rdh@gmail.com www.respondertraining.com or (765) 524-4848

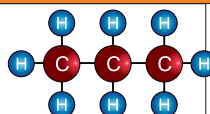
Propane Fact Sheet

DOT GUIDEBOOK
GUIDE # 115, 366-369, 375

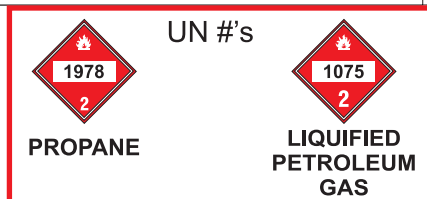
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Chemical Name: **Propane**
Chemical Family: **Hydrocarbon**
Chemical Formula: **C₃H₈**



CAS Registry No.: **74-98-6**
IDLH: **2200 ppm** (based on 10% LEL)
LEL: **2.15 (2)** UEL: **9.6 (10)**
Vapor Density: **1.52**
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**



NFPA -704

FIRE - Red

HEALTH
- Blue



REACTIVITY
- Yellow

SPECIAL HAZARDS - White

Color: **Colorless**
Odor: **Odorless, ALSO SEE BELOW**
Percent Volatile by Volume (%): **100**
Stability: **Stable**
Hazardous Polymerization: **Will not occur**
Decomposition Products: **CO, CO₂**
OSHA PEL: **1000 ppm**
ACGIH TLV: **1000 ppm**

STORAGE VESSALS

Propane and other Liquefied Petroleum Gases (LPG) are commonly 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 100 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.

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 assist in cooling the tank. Manage vapor leaks as needed. 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 the fire contacting the vapor space is extinguished, 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 your PPE, test LOW medium and high in accordance with your departments SOP's and SOG's.

Identify if there is a basement, cellar or crawl space. Ask if there has recently been any service work of the gas system (this may help you locate small leaks quicker). A leak detection fluid may help identify small leaks that a meter reading in % of LEL cannot detect.

Liquid leaks produce visible clouds when sufficient humidity is present. may be able to be converted to a water leak using water injection.

PPE

***Respiratory:** SCBA for gas in 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.

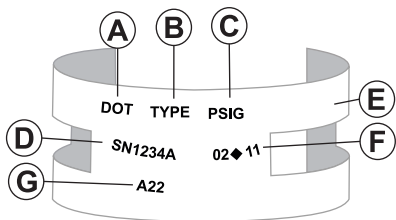
Extinguishing Media: Shut off source, Water Injection, Water spray, Class A-B-C or BC extinguisher.

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.

Common Tank/Cylinder Information

PROPANE CYLINDER MARKINGS GUIDE



A - Indicates that the cylinder has been manufactured according to U.S. DOT specifications

B - Cylinder specification type

C - Cylinder service pressure (psig)

D - Cylinder serial number

E - Manufacturer's name (or registered symbol)

F - Original manufacture test date, month, year and inspectors mark

G - Area for date requalified/retested (most often indicated by a letter with A, B, C & D corresponding to 1st, 2nd, 3rd & 4th quarter of a year, respectively), followed by two numbers of the year.

OTHER POSSIBLE MARKINGS

TW - Tare weight or empty weight of the cylinder
WC - Water storage capacity of the tank

Data plates and tank collars provide specific tank information.

20 lb Propane Tank

Dimensions: 1' 6" in height and 1' in diameter.

20 pound propane tanks are often referred to as grill cylinders and hold approximately 4.6 gallons of propane

30 lb Propane Tank

Dimensions: 2' in height and 1' in diameter.

30 pound propane tanks hold approximately 7 gallons of propane when full.

33.5lb Forklift Propane Tank

Dimensions: 30" x 12" x 12"

Hold approximately 8 gallons of propane when full.

43.5lb Forklift Propane Tank

Dimensions: 34" x 12" x 12"

Holds approximately 9 gallons of propane when full.

40 lb Propane Tank

Dimensions: 29" in height and 12.5" in diameter.

40 pound propane tanks are often found on the front of campers and hold approximately 9.5 gallons of propane when full.

100 lb Propane Tank

Dimensions: 48" in height and 14.5" in diameter.

100 pound propane tanks hold approximately 23.5 gallons of propane when full.

120 Gallon Vertical Propane Tank

Dimensions: 54.5" in height and 30" in diameter

A 120 vertical gallon propane tank is also commonly referred to as 420 lb or PIG propane tank.

A 120 gallon propane tanks hold 99 gallons of propane when full.

150 Gallon Horizontal Propane Tank

Dimensions: 5'8" in height and 24" in diameter

A 150 gallon propane tanks hold 120 gallons of propane when full.

250 Gallon Horizontal Propane Tank

Dimensions: 7'10" long and 30" in diameter

A 250 gallon propane tank holds 200 gallons of propane when full.

500 Gallon Horizontal Propane Tank

Dimensions: 9' 11" long and 37.5" in diameter

A 500 gallon propane tank holds 400 gallons of propane when full.

1000 Gallon Horizontal Propane Tank

Dimensions: 16' 2" long and 41" in diameter

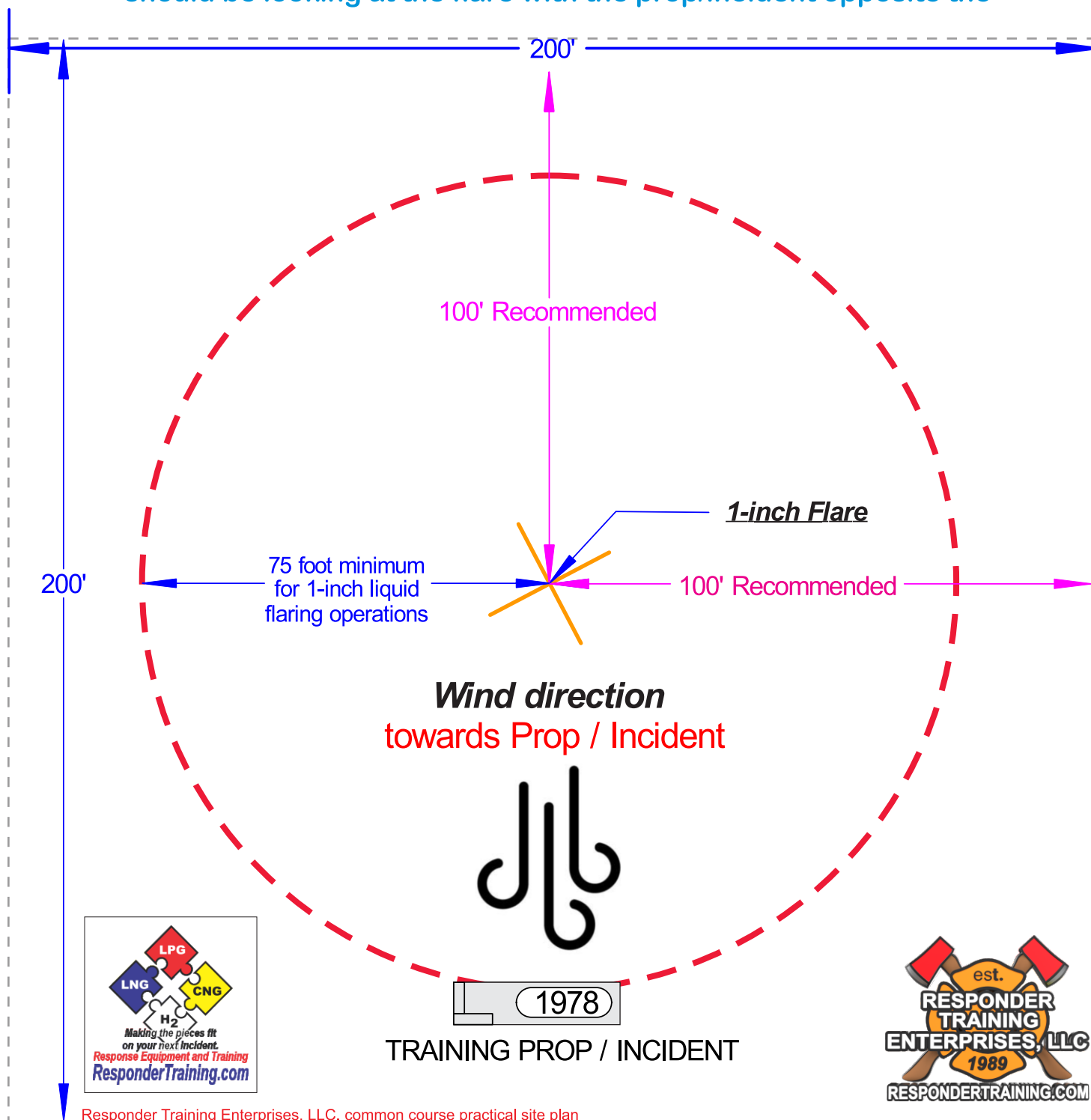
A 1000 gallon propane tank holds 800 gallons when full.

RTE 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.

Preferred propane flare set up: Put the wind at your back, you should be looking at the flare with the prop/incident opposite the



Responder Training Enterprises, LLC. common course practical site plan

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**.