PETROGEN
Advanced Cutting Torch Systems

Made in the U.S.A.

PETROGEN V. ACETYLENE

SAFETY	PETROGEN	ACETYLENE
FUEL	• Combustion of liquid fuel is not possible with the absence of oxygen. This is what eliminates fuel line flashback with the Petrogen system. • Fuel leaks are visible and odorous making them easy to detect and address.	• Acetylene is an unstable compound that can explode from heat and/or shock and without oxygen present. • Fuel leaks are not visible and only slightly odorous making them harder to detect and address. Leaks can also lead to major accidents.
SLAG	The liquid fuel flames oxidize steel 99.99% (based on oxygen purity). This leaves no leftover molten steel. The higher oxidization rate also produces lighter weight sparks with little heat, reducing the potential for unforeseen hazards.	Acetylene only oxidizes 70% of the steel, leaving 30% of the steel to melt through. This slows the cutting process and allows the cut to re-weld to itself. This lower oxidization rate leads to sparks that are heavy, hot, and dangerous the operator and environment.
FUEL TANK	The Petrogen Liquid Fuel Tank provides the following safety features. • "Fast Flow Check Valve" which activates when there has been a spike in pressure (i.e. dry or severed fuel line). • Relief valve which is designed to release any pressure that exceeds the valves capacity. • Smaller light weigh vessel, which is easy to transport.	An acetylene cylinder is subject to explosion if caught in a fire or if subjected to shock. Acetylene cylinders are also difficult to maneuver and hazardous to transport.
AIRBORNE CONTAMINATION	Cutting with Petrogen will produce carbon dioxide and steam. Though it will not produce carbon monoxide. The metal contaminants produced are also oxidized more completely, producing much less toxic fumes.	Cutting with acetylene produces carbon, carbon dioxide, steam, and carbon monoxide (highly toxic).

www.PETROGEN.com
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PERFORMANCE	PETROGEN	ACETYLENE
CUTTING SPEED	With Petrogen's higher oxidization rate and an almost four times heavier vapor, cuts with Petrogen can be made up to four times faster than acetylene. • 20% faster at 1 inch • 400% faster at 10-12 inches	Because the acetylene flame loses its depth of penetration quickly it relies on burning steel from the top to carry the heat to the bottom of a deep cut.
CAPABILITIES	The longer release of liquid fuel's BTUs enables the Petrogen system to make layered cuts, gapped cuts, and deep hole punches.	Acetylene is limited to single layer cutting and just 3 inch hole punches.
OXYGEN	Petrogen systems are capable of cutting with Pressure Swing Adsorption (PSA) oxygen (90% pure). It is the only torch that use an oxygen purity that low.	Acetylene requires cryogenic oxygen (99.99% pure) in order to perform.
SAVINGS	**PETROGEN**	**ACETYLENE**
FUEL COST	A 2.5 gallon Petrogen Liquid Fuel Tank holds as much preheat energy as a 250 cu.ft. acetylene cylinder. That's $8.00 for 2 gallons of liquid fuel compared to $230 for 250 cu.ft. of acetylene, not including delivery fees.	Though an acetylene cylinder provides the same amount of cutting time as Petrogen, acetylene users are still not cutting the as quickly nor as much.
CONSUMABLES	When the liquid fuel evaporates inside the Petrogen tip, it creates a refrigerant effect. The larger the tip, the cooler it runs. This is one reason why Petrogen tips are known to last for a year plus with regular use. Other reasons for longer tip life are because of the higher oxidation rate which creates less harmful debris, and the coupling distance that can be reached to distance the tip from potentially damaging heat.	Acetylene tips are known to clog with molten steel.

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AVAILABILITY	Liquid fuels are available in every part of the world, even in the remote corners. Many foreign jobs have been saved by Petrogen because acetylene and propane were unavailable. But you'll always find gasoline everywhere.	Acetylene is seldom easily available in places like the Pacific islands, Antarctica, Cameroon, the Amazon, Arctic territories, Russian wastelands. Even in the U.S. there might be a problem getting acetylene delivered on a weekend night.

Switching to Petrogen from acetylene will provide operators with several safety, performance, and savings advantages.

SAFETY

- No risk of fuel line flashback
- Detectable fuel leaks
- Less harmful sparks
- Fuel vessel is safe and easy to transoprt
- No carbon monoxide fumes

PERFORMANCE

- Quicker cutting speeds
- Layer and gap cuts
- Deeper hole punching
- Ability to use PSA oxygen

SAVINGS

- Lower fuel costs
- No delivery charges
- Higher efficency
- Longer lasting consumables
- Greater fuel availability

One advantage operators do lose when switching to Petrogen is their ability to weld. Welding requires a neutral flame (neither oxidizing, nor carburizing) which liquid fuels are not capable of making. The liquid fuel flame produces too much oxidation (nearly 100% based on oxygen purity) which does not allow the two metals to melt together. This higher oxidation rate, on the other hand, is what makes the Petrogen system more efficient at cutting.

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