PETROGEN
Advanced Cutting Torch Systems

Made in the U.S.A.

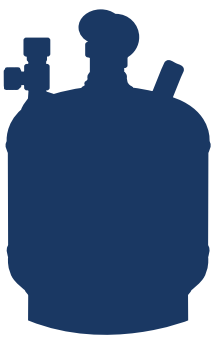
THE ADVANTAGES OF PETROGEN

Many of the advantages that are gained by using Petrogen over other oxy-fuel systems are due to the fact that the system uses liquid fuel to produce the preheat flame. Though, many misconceptions are applied to liquid fuels (many coming from chase scenes from early 80's movies), it is actually the fuel that make the Petrogen system the safest hot cutting oxy-fuel system in the field.

SAFETY

A large part of why we use liquid fuels in our vehicles is because the fuel itself is very stable. The combustion of the liquid fuel is not actually possible without oxygen present. This is how Petrogen's "tank to tip" fuel distribution eliminates fuel line flashback. The liquid fuel stays a liquid all the way from the liquid fuel tank to the tip of the torch, where the fuel and oxygen then meet and mix to make an ignitable vapor. This way of fuel distribution also makes fuel leaks easy to detect.

Once lit, the liquid fuel flame continues to protect the system in various ways. As the liquid fuel evaporates inside the Petrogen tip, it creates a refrigerant effect. The higher the tip size, the cooler it runs. This is one reason why Petrogen tips are known to last for a year plus with regular use. The liquid fuel flame also produces a higher oxidation rate compared to other oxy-fuel systems, nearly 100% oxidization. With a higher oxidation rate, more material is being consumed, which produces lighter, cooler and less harmful sparks. There is also a longer release of BTUs in the liquid fuel flame. This not only contributes to the Petrogen systems advanced cutting capabilities, but it also allows operators to increase their coupling distance well beyond the standard quarter inch to both distance the torch and themselves from potentially damaging heat and/or debris.



As for the equipment, Petrogen systems have a variety of safety components which, in conjunction with the liquid fuel being used, help to keep operator and operations safe from unforeseen hazards. The ASME code liquid fuel tank specifically has two main safety components. One is a "Fast Flow Check Valve" which will activate when there has been a spike in fuel line pressure (i.e. dry or severed fuel line), and the second is the Relief valve located in the Filler Cap. The valve is designed to release any pressure that exceeds the valve's capacity, preventing the fuel tank from becoming a hazard should it get caught in a fire.

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PERFORMANCE

The same liquid fuel attributes that make the Petrogen system safe are ones that also cater to its increased performance over other oxy-fuel systems. For instance, the higher oxidation rate enables quicker cutting speeds. Where other oxy-fuel systems may only oxidize the material as low as 70% and have to melt through the rest, using liquid fuel and cryogenic (99.99% pure) oxygen leads to 99.99% of the steel being consumed.

This benefits operations in more ways than just faster cuts. With the steel almost completely being consumed, there is no slag build up or reconnecting material, so cuts can be made in one pass. Also, without slag build up, grinding a cut for re-welding is no longer necessary.

Additionally, the higher oxidation rate also allows Petrogen systems to use Pressure Swing Adsorption (PSA) oxygen (93-95% pure). Though, operators can expect as much as a 35% drop in performance (for every 1% of oxygen purity reduced, the cutting speed/performance will be reduced by 3-5%), the Petrogen system is the only oxy-fuel cutting torch that can use an oxygen purity below that of cryogenic.

Liquid fuel's longer release of BTU's is another large contributing factor to the cutting capabilities of the Petrogen system. The

heavy vapors of liquid fuel's push combustion all the way down the length of the flame. This longer duration of combustion pushes further into the steel and continues to heat down the length of the steel. The BTUs released by the burning steel also add to the flame's heat and penetration.

This is what allows the Petrogen system to make stacked/layered cuts, air gap cuts, and deep hole punches. It is also the reason why coupling distance with the Petrogen system is so flexible, and why preheating through dirt and paint happens much quicker.

SAVINGS

The use of liquid fuels with the Petrogen system plays another large role in savings. Switching to Petrogen from another oxy-fuel system has multiple financial perks. One is conserving fuel charges. Operators with Petrogen can anticipate eight plus, continuous hours of preheating with two gallons of liquid fuel. A cost of about $8.00. Compared to acetylene, which requires a 250 cubic foot cylinder for the same amount of preheat time and will cost around $230.00. With this drastic decrease

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in fuel cost, saving begins immediately. As for less expensive oxy-fuels, like propane, fuel cost savings are still there, but where switching becomes profitable is in the lower oxygen consumption rate. There is a 30% savings in oxygen consumption with Petrogen compared to propane.

Another saving benefit is the availability of liquid fuel. In many instances, users will have a liquid fuel already on site, and if not, it is just a matter of locating the local gas station. The savings in liquid fuel's availability comes into play when operators are pressed for time and need fuel instantly. Having fuel readily available reduces both delays in operations and also eliminates delivery fees/charges.

Also contributing to more efficient cost savings and operations are the performance and safety benefits of the Petrogen system. Operators are supported with quicker cutting capabilities, the ability to make multiple cuts at once and cuts through air gas, and no longer having to grind cuts for welding allows them the opportunity to take their productivity to a higher level. Operators are also put into a safer work environment, with a hot cutting system that will not just protect them from unforeseen hazardous situations but will also help them protect the system from creating premature consumables.

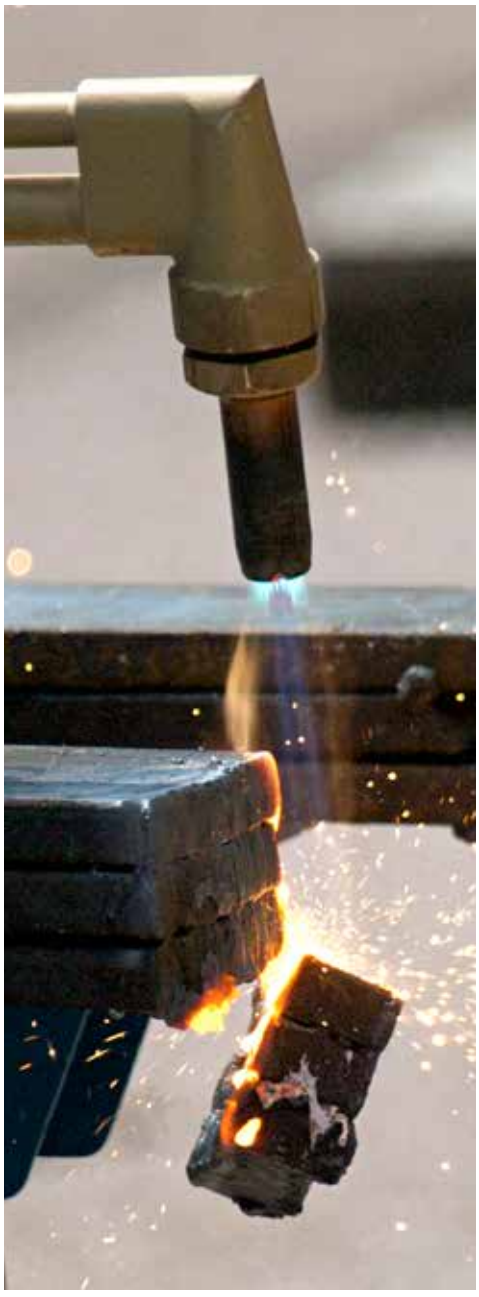
Petrogen also goes further by providing a 25-year warranty on its craftsmanship and materials and making available multiple training courses to ensure users understanding of the system and to help prolong the life of the system.

RECAP

SAFETY
- No risk of fuel line flashback
- Detectable fuel leaks
- Runs cool
- Fewer harmful sparks
- Flexible coupling distance
- System safety components

PERFORMANCE
- Quicker cutting
- No slag build up
- No grinding
- Ability to use PSA oxygen
- Layer and gap cuts
- Deeper hole punching

SAVINGS
- Lower fuel costs
- Greater fuel availability
- No delivery fees/charges
- Higher efficiency
- Longer lasting consumables



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