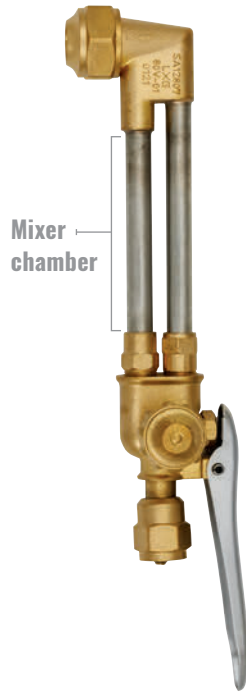


Are All Oxy-Fuel Torches the Same?

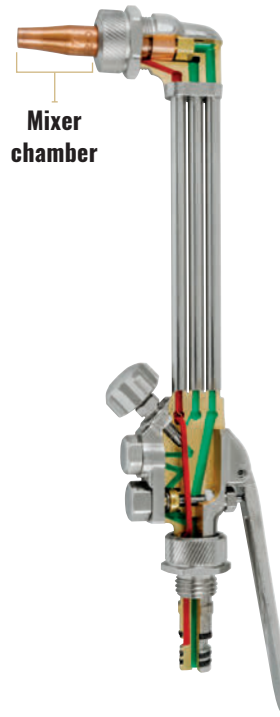
All oxy-fuel torches use a combustion process, mixing oxygen and fuel to cut, heat, braze and weld, but not all oxy-fuel torches mix oxygen and fuel in the same location.



Mixer chamber

TUBE MIX

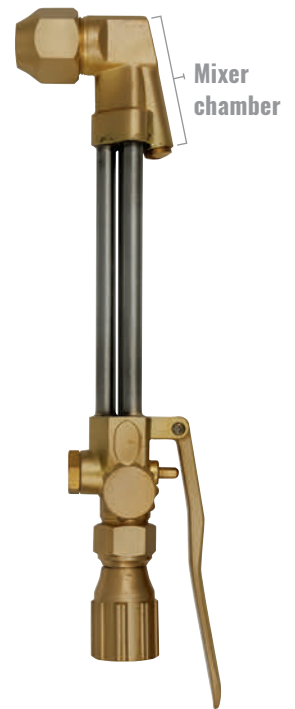
Two Tubes —
Preheat Mixed Gas
Cutting Oxygen



Mixer chamber

SMITH IN-TIP MIX

Three Tubes —
Preheat Fuel
Preheat Oxygen
Cutting Oxygen



Mixer chamber

HEAD MIX

Three Tubes —
Preheat Fuel
Preheat Oxygen
Cutting Oxygen

Why Does the Location of Mixing Matter?

In the event of a sustained backfire where the flame is burning back inside of the torch, the flame will typically travel up to the mixer chamber. Continued burning can cause torch damage or fire, affecting both safety of the operator and performance of the torch.

SAFETY

In a tube-mix design, during a sustained backfire, the mixed gas is burning inside of the torch tube. With the **Smith three-tube in-tip mix design**, mixed gas is isolated to the tip for safety.

PERFORMANCE

In a tube-mix or head-mix design, during a sustained backfire, damage to the torch tube or head can result, increasing downtime and cost of repair. With the **Smith three-tube in-tip mix design** the torch remains undamaged, decreasing downtime and cost of repair. Every tip replacement is a new mixer.

Are All Oxy-Fuel Tips the Same?

All oxy-fuel tips are made to perform a specific task, whether it's cutting, heating, brazing or welding, but not all oxy-fuel tips have the same design.



METAL-TO-METAL
SEAT DESIGN



SMITH GRAF-TITE™
SOFT-SEAT DESIGN



METAL-TO-METAL
SEAT DESIGN

Why Does the Tip Seat Matter?

Metal-to-metal seat designs rely on accurately machined seating surfaces to seat properly. The Graf-Tite soft-seat design by Smith uses pliable graf-tite material which conforms to potentially uneven seating surfaces.

PERFORMANCE

When a tip with a metal-to-metal seat design is dropped and damage to the tip seat occurs, the tip no longer fits or seats properly in the torch and the tip is no longer serviceable, increasing downtime. With the **Smith Graf-Tite soft-seat design**, if a tip seat is damaged, it can still conform to the mating surface and function properly, reducing downtime.

PRODUCTIVITY

Metal-to-metal seat designs rely on tip nut torque and accurately machined seating surfaces to seat properly, requiring a tool to be used to tighten the tip into the torch. Compared to the metal-to-metal seat design, the **Smith Graf-Tite soft-seat design** conforms to uneven seating surfaces, allowing tips to be hand tightened with no tools required.



MillerWelds.com/oxy-fuel

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