JOHN ZINK™
A KOCH ENGINEERED SOLUTIONS BUSINESS

STEAM-ASSISTED FLARES

SAFE, ECONOMICAL AND SMOKELESS

John Zink offers engineered solutions for steam-assisted flare systems, meeting ever-tightening environmental regulations while extending run times and reducing operating costs. Our solutions use advanced, simplified steam delivery and special noise control technologies to maximize smokeless performance efficiencies and reduce the impact of flaring.



Steamizer™ XP™

One flare does it all. Our state-of-the-art Steamizer™ XP™ minimizes smoke and reduces steam consumption compared to traditional steam flare solutions.

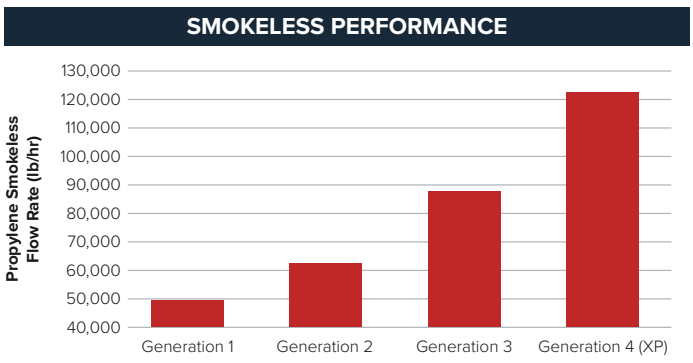
EXCEPTIONAL PERFORMANCE

Steam Savings

The XP utilizes 30% to 40% less steam for smoke suppression than traditional technologies, resulting in significantly reduced operating and capital costs.

Increased Smokeless Capacity

Innovative primary steam/air eduction and secondary air entrainment techniques result in an increased smokeless capacity of 40% to 60% for a given steam flow rate.





"After installing the XPs, we achieved our first smokeless start-up ever. Now, over 10 years and two turnarounds later, inspection showed both flares are still in very good condition." – Customer in Europe

HAMWORTHY COMBUSTION® KALDAIR® Airoil-Flaregas Peabody Engineering



Steamizer™ XP™

Lower Installation Costs

Conventional steam-assisted flares require multiple steam lines for optimal smoke suppression. The XP can be supplied with a single steam line, providing significant material and installation cost savings.

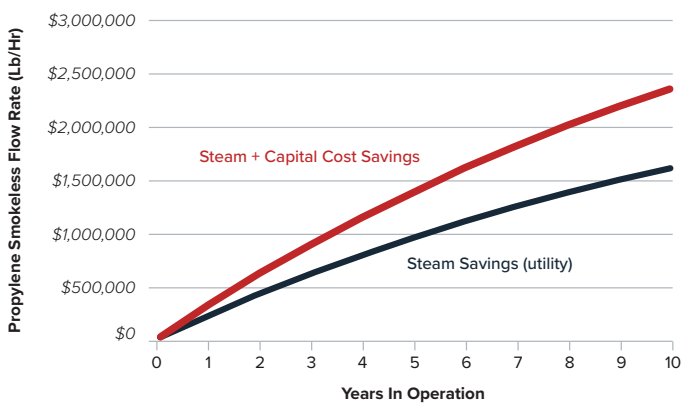
Increased Tip Life

Flame damage due to improper steam operation is significantly reduced as a result of the XP's unique design, which provides for simplified control. In addition, steam injection components are well protected from radiation and flame impingement compared to traditional flare designs.

"Our smokeless capacity has more than doubled and day-to-day operations are quieter."

— Customer in South Korea

EXAMPLE XP SAVINGS (NPV)+



Performance of traditional steam flare versus a Steamizer™ XP™ using the same steam and gas rates.



Traditional Design



Steamizer XP

STEAMIZER™ XP™ DESIGN FEATURES

Shear Mixing

A converging nozzle directs the waste stream to intersect the steam/air stream at a slight angle. The patented design improves mixing, resulting in exceptional smokeless performance. It is particularly efficient for olefins due to the exceptional mixing characteristics of the tip.

Steam/Air (S/A) Tube Efficiency

The XP flare is designed with straight S/A tubes instead of angled S/A tubes found in other steam flares. This innovation results in optimized air eduction efficiency that contributes to superior performance.

Secondary Air Entrainment

The XP configuration utilizes multiple discharge nozzles that allow for improved secondary air entrainment. An increased amount of air mixes with the flare gases to reduce overall steam consumption.

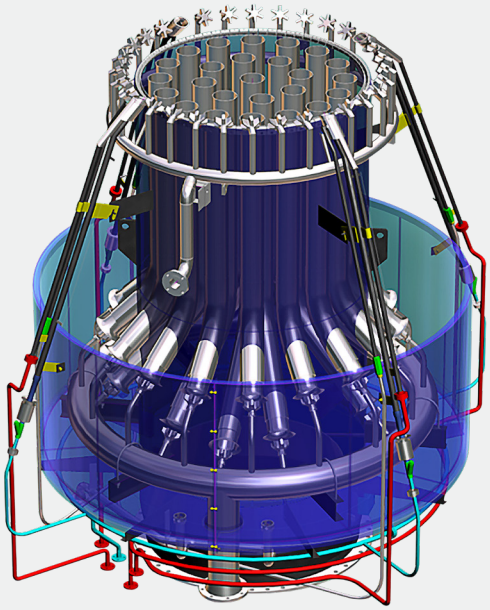


Secondary Air Entrainment

FEATURES	BENEFITS
• Ultra-high smokeless capacity • Low noise design	• Minimizes environmental/community impact of flaring
• Eliminates steam capping	• Extended tip life
• Low steam/gas ratio for smokeless flaring	• Reduced steam consumption
• Single steam-line option • No center steam required • Ultra-low minimum steam capability	• Simple operation • Minimizes over-steaming • Significantly reduced operating costs

Steamizer HSA

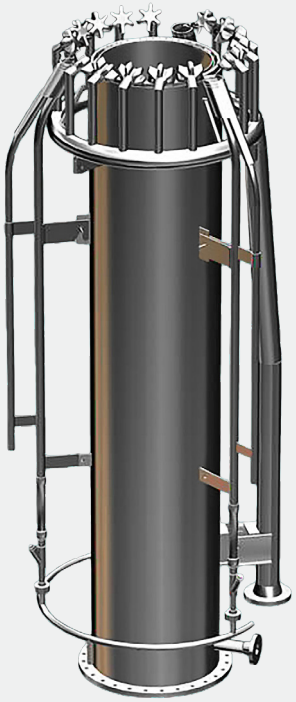
Prior to development of XP technology, our Steamizer HSA flare tip set the industry standard for high-capacity steam flares. It provides improved efficiency over perimeter-only steam tips via the use of internal steam/air tubes. Some of the largest steam flares in the world are of this design.



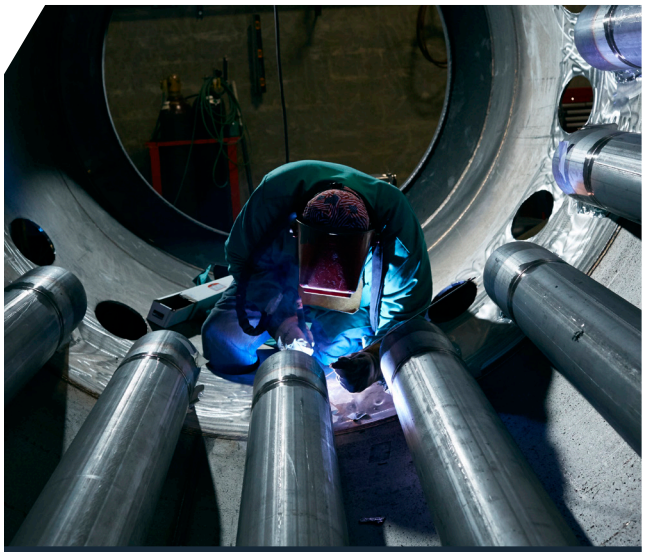
Steamizer HSA Flare Tip

QS

John Zink's QS™ steam-assisted flare tip is a cost-effective design that delivers smokeless operation where moderate smokeless capacities and noise levels are acceptable.



QS Upper-Steam Flare



Flare Manufacturing

GLOBAL REACH

John Zink has locations all over the map, with thousands of employees worldwide.



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